

The Township of Guelph/Eramosa Water and Wastewater Rate Study

July 2, 2015



Plaza Three
101-2000 Argentia Rd.
Mississauga, Ontario
Canada L5N 1V9

Phone: (905) 272-3600

Fax: (905) 272-3602

e-mail: info@watson-econ.ca

www.watson-econ.ca

 Planning for growth

Contents

	Page
Executive Summary	i
1. Introduction	1-1
1.1 Background.....	1-1
1.2 Study Process.....	1-3
1.3 Regulatory Changes in Ontario.....	1-4
1.4 Sustainable Water and Sewage Systems Act.....	1-4
1.5 Financial Plans Regulation	1-6
1.6 Water Opportunities Act, 2010.....	1-8
1.7 Forecast Growth and Servicing Requirements	1-9
2. Capital Infrastructure Needs.....	2-1
2.1 Capital Forecast.....	2-1
3. Lifecycle Costing	3-1
3.1 Overview of Lifecycle Costing.....	3-1
3.1.1 Definition	3-1
3.1.2 Financing Costs	3-1
3.1.3 Costing Methods	3-5
3.2 Impact on Budgets.....	3-6
4. Capital Cost Financing Options	4-1
4.1 Summary of Capital Cost Financing Alternatives.....	4-1
4.2 Development Charges Act, 1997	4-2
4.3 Municipal Act	4-3
4.4 Grant Funding Availability	4-5
4.5 Existing Reserves/Reserve Funds.....	4-5
4.6 Debenture Financing.....	4-6
4.7 Infrastructure Renewal Bonds.....	4-6
4.8 Recommended Capital Financing Approach.....	4-8
5. Overview of Expenditures and Revenues.....	5-1
5.1 Water Operating Expenditures.....	5-1
5.2 Water Operating Revenues	5-2
5.3 Wastewater Operating Expenditures	5-4
5.4 Wastewater Operating Revenues	5-4
6. Pricing Structures	6-1
6.1 Introduction	6-1
6.2 Alternative Pricing Structures.....	6-2
6.3 Assessment of Alternative Pricing Structures	6-4
6.4 Rate Structures in Ontario	6-9
6.5 Recommended Rate Structures.....	6-9
7. Analysis of Water and Wastewater Rates and Policy Matters	7-1
7.1 Introduction	7-1
7.2 Water Rates (Combined Operating for Rockwood and Hamilton Drive) .	7-1

7.3	Water Rates (Hamilton Drive Capital)	7-1
7.4	Water Rates (Rockwood Capital).....	7-2
7.5	Wastewater Rates (Rockwood)	7-2
7.6	Gazer-Mooney Area.....	7-3
8.	Recommendations.....	8-1
	Appendix A – Rockwood Water System Inventory Data.....	A-1
	Appendix B – Hamilton Drive Water System Inventory Data.....	B-1
	Appendix C – Gazer Mooney Water and Wastewater System Inventory Data	C-1
	Appendix D – Rockwood Wastewater System Inventory Data	D-1
	Appendix E – Rockwood System Detailed Capital Water Rate Calculations.....	E-1
	Appendix F – Hamilton Drive System Detailed Capital Water Rate Calculations	F-1
	Appendix G – Rockwood and Hamilton Drive Combined Water Systems Detailed Operating Water Rate Calculations	G-1
	Appendix H – Gazer Mooney Water and Wastewater Rate Calculations	H-1
	Appendix I – Rockwood Detailed Wastewater Rate Calculations.....	I-1
	Appendix J – 2015 Debt Capacity Calculations.....	J-1

List of Acronyms and Abbreviations

C.O.M.R.I.F.	Canada-Ontario Municipal Rural Infrastructure Fund
D.C.A.	Development Charges Act
F.I.R.	Financial Information Return
I.O.	Infrastructure Ontario
M.O.E.	Ministry of Environment
O.M.B.	Ontario Municipal Board
O.Reg.	Ontario Regulation
O.S.I.F.A.	Ontario Strategic Infrastructure Financing Authority
O.S.T.A.R.	Ontario Small Town and Rural
P.S.A.B.	Public Sector Accounting Board
S.W.S.S.A.	Sustainable Water and Sewage Systems Act, 2002

Executive Summary

The Township of Guelph/Eramosa retained Watson & Associates Economists Ltd. (Watson) to undertake a water and wastewater rate study and Financial Plan. Watson provided a water and wastewater rate study as well as a Water Financial Plan in 2011. This study extends off of those studies, updating the analysis for current capital and operating forecasts, costing for lifecycle cost requirements, current metered 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 monthly base charge rates are anticipated to increase in 2016 to \$10 per month and then increase at 2% every year thereafter. The volume rates for water and wastewater are also anticipated to increase annually from 2016 to 2025 for the Rockwood, Hamilton Drive and Gazer Mooney Systems.

The following summaries provide the water and wastewater rates and average annual bills based on the analysis provided herein over the forecast period to 2025. For Rockwood, assuming an annual volume of 190 m³ (based on the average annual usage in this system), the water rates are provided in Table ES-1 and the wastewater rates are provided in Table ES-2. For Hamilton Drive, assuming an annual volume of 240 m³ (based on the average annual usage in this system), the water rates are provided in Table ES-3. Table ES-4 provides the annual flat rate for water and wastewater services in the Gazer Mooney system. Tables ES-1 through ES-4 also provides the average monthly bill and the monthly increases anticipated based on the calculated rates.

Table ES-1
Guelph/Eramosa
Water Rate Summary - Rockwood
Average Customer Water Bill - Based on 190 m³ of usage and 5/8" or 3/4" meter

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Monthly Base Rate	\$4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Capital Water Volume Rate/m ³	\$0.07	\$0.19	\$0.19	\$0.20	\$0.20	\$0.20	\$0.15	\$0.13	\$0.13	\$0.13	\$0.13
Lifecycle Capital Water Volume Rate/m ³	\$0.12	\$0.00	\$0.00	\$0.00	\$0.00	\$0.01	\$0.06	\$0.09	\$0.10	\$0.10	\$0.11
Operating Water Volume Rate/m ³	\$1.68	\$1.80	\$1.92	\$2.06	\$2.20	\$2.31	\$2.43	\$2.55	\$2.68	\$2.81	\$2.95
Total Volume Rate	\$1.87	\$1.99	\$2.12	\$2.26	\$2.41	\$2.52	\$2.64	\$2.77	\$2.90	\$3.04	\$3.18
Annual Base Rate Bill	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Annual Metered Volume	190	190	190	190	190	190	190	190	190	190	190
Annual Metered Volume Bill	\$355.32	\$378.39	\$403.03	\$429.36	\$457.50	\$479.20	\$501.96	\$525.84	\$550.91	\$577.18	\$604.73
Total Annual Bill	\$405.72	\$498.39	\$525.43	\$554.21	\$584.85	\$609.09	\$634.45	\$660.98	\$688.75	\$717.78	\$748.14
Total Average Monthly Bill	\$33.81	\$41.53	\$43.79	\$46.18	\$48.74	\$50.76	\$52.87	\$55.08	\$57.40	\$59.82	\$62.35
\$ Monthly Increase - Base Rate		\$5.80	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.22	\$0.23	\$0.23	\$0.23
\$ Monthly Increase - Metered Volume Rate		\$1.92	\$2.05	\$2.19	\$2.34	\$1.81	\$1.90	\$1.99	\$2.09	\$2.19	\$2.30
\$ Monthly Increase - Total Monthly Bill		\$7.72	\$2.25	\$2.40	\$2.55	\$2.02	\$2.11	\$2.21	\$2.31	\$2.42	\$2.53

Table ES-2
Guelph/Eramosa
Rockwood Wastewater Rate Summary
Average Customer Wastewater Bill - Based on 190 m³ of usage and 5/8" or 3/4" meter

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Monthly Base Rate	\$4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Constant Metered Volume Rate	\$2.64	\$2.80	\$2.94	\$3.09	\$3.24	\$3.40	\$3.54	\$3.68	\$3.75	\$3.83	\$3.90
Annual Base Rate Bill	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Annual Metered Volume	190	190	190	190	190	190	190	190	190	190	190
Annual Metered Volume Bill	\$501.60	\$531.70	\$558.28	\$586.19	\$615.51	\$646.29	\$672.14	\$699.03	\$713.01	\$727.28	\$741.84
Total Annual Bill	\$552.00	\$651.70	\$680.68	\$711.04	\$742.85	\$776.18	\$804.63	\$834.17	\$850.86	\$867.88	\$885.25
Total Average Monthly Bill	\$46.00	\$54.31	\$56.72	\$59.25	\$61.90	\$64.68	\$67.05	\$69.51	\$70.90	\$72.32	\$73.77
\$ Monthly Increase - Base Rate		\$5.80	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.22	\$0.23	\$0.23	\$0.23
\$ Monthly Increase - Metered Volume Rate		\$2.51	\$2.22	\$2.33	\$2.44	\$2.57	\$2.15	\$2.24	\$1.17	\$1.19	\$1.21
\$ Monthly Increase - Total Monthly Bill		\$8.31	\$2.42	\$2.53	\$2.65	\$2.78	\$2.37	\$2.46	\$1.39	\$1.42	\$1.45

Table ES-3
Guelph/Eramosa
Water Rate Summary - Hamilton Drive
Average Customer Water Bill - Based on 240 m³ of usage and 5/8" or 3/4" meter

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Monthly Base Rate	4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Capital Water Volume Rate/m ³	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.09	\$0.08	\$0.08	\$0.08	\$0.08
Lifecycle Capital Water Volume Rate/m ³	\$0.61	\$0.67	\$0.75	\$0.83	\$0.93	\$1.03	\$1.14	\$1.17	\$1.19	\$1.22	\$1.25
Operating Water Volume Rate/m ³	\$1.68	\$1.80	\$1.92	\$2.06	\$2.20	\$2.31	\$2.43	\$2.55	\$2.68	\$2.81	\$2.95
Total Volume Rate	\$2.37	\$2.56	\$2.76	\$2.98	\$3.21	\$3.42	\$3.65	\$3.80	\$3.95	\$4.11	\$4.27
Annual Base Rate Bill	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Annual Metered Volume	240	240	240	240	240	240	240	240	240	240	240
Annual Metered Volume Bill	\$568.82	\$613.61	\$662.02	\$714.36	\$770.98	\$821.64	\$876.05	\$911.04	\$947.62	\$985.82	\$1,025.76
Total Annual Bill	\$619.22	\$733.61	\$784.42	\$839.21	\$898.32	\$951.53	\$1,008.54	\$1,046.18	\$1,085.46	\$1,126.42	\$1,169.17
Total Average Monthly Bill	\$51.60	\$61.13	\$65.37	\$69.93	\$74.86	\$79.29	\$84.04	\$87.18	\$90.45	\$93.87	\$97.43
\$ Monthly Increase - Base Rate		\$5.80	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.22	\$0.23	\$0.23	\$0.23
\$ Monthly Increase - Metered Volume Rate		\$3.73	\$4.03	\$4.36	\$4.72	\$4.22	\$4.53	\$2.92	\$3.05	\$3.18	\$3.33
\$ Monthly Increase - Total Monthly Bill		\$9.53	\$4.23	\$4.57	\$4.93	\$4.43	\$4.75	\$3.14	\$3.27	\$3.41	\$3.56

**Table ES-4
Gazer Mooney Annual Water & Wastewater Bill**

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Annual Bill	235.14	251.60	\$269.21	\$288.05	\$308.21	\$329.78	\$342.97	\$356.69	\$367.39	\$378.41	\$389.76
\$ Increase - Flat Charge		\$16.46	\$17.61	\$18.84	\$20.16	\$21.57	\$13.19	\$13.72	\$10.70	\$11.02	\$11.35

Gazer Mooney Monthly Water and Wastewater Bill

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Monthly Bill	19.60	\$20.97	\$22.43	\$24.00	\$25.68	\$27.48	\$28.58	\$29.72	\$30.62	\$31.53	\$32.48
\$ Increase - Flat Charge		\$1.37	\$1.47	\$1.57	\$1.68	\$1.80	\$1.10	\$1.14	\$0.89	\$0.92	\$0.95

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 raw water from each well is chlorinated to protect against microbial contaminants prior to discharge into the 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 6.7 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 water tower and distribution system. Two of the wells are located at the Station Street pumphouse and the other at the Bernardi Pumphouse. The water level in the water tower starts and stops the well pumps. The raw water from the wells is chlorinated prior to discharge into the distribution system. Once the low level in the water tower has been reached, the pump station is called upon to operate and supply the distribution system with the excess water filling the tower. This water system is known as a demand/storage system. Once the water tower is full, the well pumps shut down until the water level drops in the water tower and the pumps are required to run again.

The Rockwood system presently has 1,635 users. Development has been proceeding in the area and further growth is anticipated over the next few years. The Hamilton system has 216 users and is at its approximate capacity. 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 to the Gazer Mooney system. The Township is responsible for the lifecycle costs for the

infrastructure in place for the Gazer Mooney system and hence imposes a flat rate to recover the lifecycle costs associated with the infrastructure.

Municipal wastewater collection and treatment is provided by the Township to Rockwood. This system consists of four pumping stations and the new skyway monitoring station 28 kilometers of sanitary sewers and 2.7 kilometers of forcemains. The Gazer-Mooney area is also serviced by municipal wastewater treatment, once again, under an agreement with the City of Guelph. However, the Township retains responsibility for the localized infrastructure. Charges are imposed by the Township for the long term replacement of the infrastructure.

The Township currently imposes a water base charge and charges on a volume basis for both water and wastewater. The rates are in place to recover capital and operating costs related to the systems. The water rates presently in effect are as follows:

2015 - Water Billing Rates		
Monthly Base Charge		
Rockwood		4.20
Hamilton Drive		4.20
Volume Charge		
\$	1.870	Rockwood per m ³
\$	2.370	Hamilton Drive per m ³

Wastewater charges for the Rockwood area are based upon metered water volumes. The rates are in place to recover both capital and operating costs as they relate to wastewater collection.

The wastewater rates presently in effect in the Rockwood area, are as follows:

2015 - Wastewater Billing Rates		
Monthly Base Charge		
Rockwood		4.20
Hamilton Drive	n/a	
Volume Charge		
	2.64	Rockwood per m ³

The water and wastewater charges in the Gazer-Mooney presently in effect are as follows:

Combined Water & Wastewater	
Annual Flat Rate - Gazer-Mooney Area (lifecycle charge only)	\$235.14

With the legislative changes being made across Ontario, as a result of the Walkerton crisis, Municipalities are required to conform to new statutes governing the management of water and wastewater systems. Watson & Associates Economists Ltd. 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.

As discussed in more detail in section 1.5, municipalities across Ontario are required to make application to the province for a license to operate their water systems. As part of the licensing approval process, a municipality must submit a “Financial Plan” as part of the application for the licence, six months prior to the expiry of the current licence. The Township of Guelph/Eramosa’s Municipal Drinking Water Licence was issued on February 2, 2011. Watson & Associates prepared the Water Ontario Regulation 453/07 Financial Plan # 104-301A, dated July 20, 2011. The current licence expires on February 1, 2016 and therefore, the Township must submit their application for their license to operate their water system by August 2, 2015. Municipalities are also encouraged to prepare and submit Wastewater Financial Plan therefore, the Township is undertaking this in conjunction with the Water Financial Plan.

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, 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 2016 and future years.

1.3 Regulatory Changes in Ontario

Resulting from the water crisis in Walkerton, significant regulatory changes have been made in Ontario over the past decade. 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 Act was enacted in 2002, however, 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.. The following sections describe these various resulting changes.

1.4 Sustainable Water and Sewage Systems Act

As noted earlier, the Sustainable Water and Sewage Systems Act (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 that this Act has been repealed, however, 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) respecting the “collecting, treating or discharging waste water.”

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

In regard to the “Full Cost of Services” report, the Township (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 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 Township’s auditor would be required to provide a written opinion on the report. The report was to be approved by the Township 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 Township intended to pay for the full costs of providing the service. The regulations were to specify limitations on what sources of revenue the Township 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 Township 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 Township 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 Township. 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 Township 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 Township 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 Township 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 Township to obtain its Drinking Water License;
- 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 Drinking Water Act, 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 Township'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. However, many of the prescriptive requirements 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”) has been developed to assist municipalities in understanding the Province’s direction and provides 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, 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 was introduced into the legislation on May 18, 2010 and received Royal Assent on November 29, 2010.

On November 29, 2010, Bill 72, the Water Opportunities Act, 2010 received Royal Assent.

The Act provides for the following elements:

- Foster innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
- Prepare water conservation plans to achieve water conservation targets established by the regulations; and
- Prepare 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:

- May relate to the financing, operation or maintenance of a municipal service or to any other matter in respect of which 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;
- Identifying what 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 Sustainable Water and Sewage Systems Act once all regulations are put in place.

1.7 Forecast Growth and Servicing Requirements

The Township, as of December, 2014, services approximately 1,851 water customers (216 in the Hamilton Drive area and 1,635 in the Rockwood area) as well as 1,635 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 240 m³ per customer annually over the past three years and in Rockwood, the water usage has averaged 190 m³ per customer over the last three years. The average customer was also billed based on 190 m³ per year for wastewater usage in Rockwood. For forecasting future water volumes, the average volume per residential customer of 240 m³ has been assumed for

new Hamilton Drive Area water customers and 190 m³ for new Rockwood water customers.

For forecasting future wastewater volumes in Rockwood the average volume per residential customer of 190 m³ has been used.

For future water customers to be added to the systems, consideration has been given to development potential for the 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.

Table 1-1 provides for the forecast of water users and volumes in the Rockwood area, Table 1-2 provides the forecast of water users and volumes in Hamilton Drive area and Table 1-3 provides for the forecast of wastewater users and volumes in Rockwood.

**Table 1-1
Guelph/Eramosa
System User Forecast**

Rockwood Water Users Forecast

Year	Total Users	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2015	25	13	25	25	25	25	25	25	25	25	25	25
2016	25		13	25	25	25	25	25	25	25	25	25
2017	30			15	30	30	30	30	30	30	30	30
2018	30				15	30	30	30	30	30	30	30
2019	30					15	30	30	30	30	30	30
2020	30						15	30	30	30	30	30
2021	30							15	30	30	30	30
2022	34								17	34	34	34
2023	34									17	34	34
2024	34										17	34
2025	38											19
Total	340	13	38	65	95	125	155	185	217	251	285	321
m ³ /user	190	190	190	190	190	190	190	190	190	190	190	190
Annual Flow		2,470	7,220	12,350	18,050	23,750	29,450	35,150	41,230	47,690	54,150	60,990

Water Customer Forecast	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635
New - Growth	13	38	65	95	125	155	185	217	251	285	321
Total	1,648	1,673	1,700	1,730	1,760	1,790	1,820	1,852	1,886	1,920	1,956

Water Metered Volume Forecast (m ³)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471
New	2,470	7,220	12,350	18,050	23,750	29,450	35,150	41,230	47,690	54,150	60,990
Total	320,941	325,691	330,821	336,521	342,221	347,921	353,621	359,701	366,161	372,621	379,461

Table 1-2
Guelph/Eramosa
System User Forecast

Hamilton Drive Water Users Forecast

Year	Total Users	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2015	0	-	-	-	-	-	-	-	-	-	-	-
2016	2		1	2	2	2	2	2	2	2	2	2
2017	2			1	2	2	2	2	2	2	2	2
2018	2				1	2	2	2	2	2	2	2
2019	2					1	2	2	2	2	2	2
2020	0						-	-	-	-	-	-
2021	0							-	-	-	-	-
2022	0								-	-	-	-
2023	0									-	-	-
2024	0										-	-
2025	0											-
Total	8	-	1	3	5	7	8	8	8	8	8	8
m ³ /user	240	240	240	240	240	240	240	240	240	240	240	240
Annual Flow		-	240	720	1,200	1,680	1,920	1,920	1,920	1,920	1,920	1,920

Water Customer Forecast	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	216	216	216	216	216	216	216	216	216	216	216
New - Growth	-	1	3	5	7	8	8	8	8	8	8
Total	216	217	219	221	223	224	224	224	224	224	224

Water Metered Volume Forecast (m ³)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	50,696	50,696	50,696	50,696	50,696	50,696	50,696	50,696	50,696	50,696	50,696
New	-	240	720	1,200	1,680	1,920	1,920	1,920	1,920	1,920	1,920
Total	50,696	50,936	51,416	51,896	52,376	52,616	52,616	52,616	52,616	52,616	52,616

**Table 1-3
Guelph/Eramosa
System User Forecast**

Wastewater Users Forecast

Year	Total Users	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
2015	25	13	25	25	25	25	25	25	25	25	25	25
2016	25		13	25	25	25	25	25	25	25	25	25
2017	30			15	30	30	30	30	30	30	30	30
2018	30				15	30	30	30	30	30	30	30
2019	30					15	30	30	30	30	30	30
2020	30						15	30	30	30	30	30
2021	30							15	30	30	30	30
2022	34								17	34	34	34
2023	34									17	34	34
2024	34										17	34
2025	38											19
Total	302	13	38	65	95	125	155	185	217	251	285	321
m ³ /user	190	190	190	190	190	190	190	190	190	190	190	190
Annual Flow		2,470	7,220	12,350	18,050	23,750	29,450	35,150	41,230	47,690	54,150	60,990

Wastewater Customer Forecast	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635
New - Growth	13	38	65	95	125	155	185	217	251	285	321
Total	1,648	1,673	1,700	1,730	1,760	1,790	1,820	1,852	1,886	1,920	1,956

Wastewater Flows Forecast (m ³)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471	318,471
New	2,470	7,220	12,350	18,050	23,750	29,450	35,150	41,230	47,690	54,150	60,990
Total	320,941	325,691	330,821	336,521	342,221	347,921	353,621	359,701	366,161	372,621	379,461

Note: Above flows are water flows on which the wastewater billing will be calculated

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 2-4 (Note: the costs are in inflated dollars). The basis for these forecasts is the Township's Capital Budget as well as additional works identified by staff.

A summary of the capital works related to Guelph/Eramosa water services is provided below: The majority of capital is attributed to lifecycle replacement for components of the wells and pumphouses.

Table 2-1
Hamilton Drive Water Capital Budget Forecast
Inflated \$

Description	Timing	Total (2015-2025)
Capital Expenditures		
Lifecycle:		
Hamilton Dr Standpipe Maintenance - Seal & anode replacement & cleaning	2016	65,000
Standpipe/Cross Creek Well #3 - Replace Electrical Panel	2016	10,000
Standpipe/Cross Creek Well #3 - Replace Chlorine Analyzer	2018	3,100
Standpipe/Cross Creek Well #3 - Replace piping	2025	47,800
Cross Creek Well #3 - Replace Well Pump	2023	6,900
Cross Creek Well #3 - Replace Well Piping	2023	6,900
Cross Creek Well #3 - Air lift well	2023	6,900
Cross Creek Pumphouse - replace electrical panel	2017	8,200
Cross Creek Pumphouse - replace chlorine pumps	2017	6,100
Cross Creek Pumphouse - replace hypo pump controller	2018	4,700
Cross Creek Pumphouse - replace Pressure Regulator Valve	2019	8,500
Cross Creek Pumphouse - replace High Lift Pumps	2023	13,800
Cross Creek Pumphouse - replace Flow Meters	2023	11,500
Cross Creek Pumphouse - replace Piping	2025	12,000
Huntington Well #2 - replace well pump	2023	6,900
Huntington Well #2 - replace well piping	2023	6,900
Huntington Well #2 - air lift & clean during pump/piping replacement	2023	6,900
Huntington Drive Pumphouse - replace electrical panel	2015	8,000
Huntington Drive Pumphouse - back up power generator	2017	61,200
Huntington Drive Pumphouse - replace chlorine pumps	2017	3,100
Huntington Drive Pumphouse - replace chlorine analyzer	2018	3,100
Huntington Drive Pumphouse - replace pressure regulator valve	2020	8,700
Huntington Drive Pumphouse - replace high lift pumps	2023	13,800
Huntington Drive Pumphouse - replace flow meters	2024	10,500
Huntington Drive Pumphouse - replace piping	2025	12,000
Watermains		-
Hydrants	2019	24,200
SCADA Communication Upgrade	2015	12,500
SCADA Control Upgrade	2018 & 2022	16,200
Meter Replacement	2015 & 2022-2025	11,700
Studies:		
Rate Study	2015, 2020 & 2025	4,518
Financial Plan	2015, 2020 & 2025	2,640
SCADA Study	2016, 2020 & 2024	34,200
Total Capital Expenditures		458,458

One of the largest capital cost for Rockwood water capital is the construction of a new pumping station and at approximately \$1.23 million as well as approximately \$1.7 million in replacement needs for existing infrastructure over the forecast.

Table 2-2
Rockwood Water Capital Budget Forecast
 Inflated \$

Description	Timing	Total (2015-2025)
Capital Expenditures		
Chlorine Pump - spare	2016	3,000
Hydrant Mounted PRV	2016	2,000
Small Dump Trailer	2017	9,000
Valley Road - Richardson Watermain Connection	2019	403,000
Lifecycle:		
Facilities:		
Station Street Well #1 & #2 - Replace Well Pumps	2022	23,000
Station Street Well #1 & #2 - Replace Well Piping	2022	23,000
Station Street Well #1 & #2 - Air lift well	2022	23,000
Station Street Pumphouse - Replace existing unit heaters	2015	2,000
Station Street Pumphouse - Replace Chlorine analyzer	2016	4,000
Station Street Pumphouse - Replace pressure regulating valves	2016	12,000
Station Street Pumphouse - Replace turbidity Analyzer	2019	5,000
Station Street Pumphouse - Replace flow meters	2022	12,000
Station Street Pumphouse - Replace chlorine pumps	2025	10,000
Bernardi Well #3 - Replace Well Pumps	2019	12,000
Bernardi Well #3 - Replace Well Piping	2023	7,000
Bernardi Well #3 - Air lift well	2023	7,000
Bernardi Pumphouse - Replace Chlorine Analyzer	2018	4,000
Bernardi Pumphouse - Replace Pressure Regulator Valve	2020	11,000
Bernardi Pumphouse - Replace Chlorine Feed	2022	23,000
Bernardi Pumphouse - Replace Roof	2021	17,000
Bernardi Pumphouse - Replace Pumps	2021	11,000
Booster Pump Station - Roof	2023	23,000
Booster Pump Station - Pumps	2020	18,000
Booster Pump Station - Chemical Feed	2023	52,000
Booster Pump Station - Controls	2023	107,000
Water Meters	2015-2025	139,000
Water Vehicles	2019-2020	37,000
Rockwood Hydrants	2025	241,000
Rockwood Watermains - Harris	2018	318,000
Studies:		
Rate Study	2015, 2020 & 2025	38,491
Financial Plan	2015, 2020 & 2025	21,380
SCADA Study	2016, 2020 & 2024	34,000
Growth Related:		
Development of New Well (Seaton)	2015	119,000
Construction of new Pumping Station (Seaton)	2015-2019	1,113,000
New Operational Space	2016-2017	249,000
Pick up Truck	2016	29,000
Work Truck	2019	33,000
Station St. Standby Power	2015	151,000
Payment of Credits	2015	232,666
Total Capital Expenditures		3,578,538

For Rockwood wastewater capital, the largest costs identified over the forecast period include the Alma St pre-treatment, storage and sanitary sewer at \$4.9 million as well as \$1.5 million required in lifecycle replacement needs for existing infrastructure.

Table 2-3
Rockwood Wastewater Capital Budget Forecast
Inflated \$

Description	Timing	Total (2015-2025)
Capital Expenditures		
Small Dump Trailer	2017	4,000
Lifecycle:		
Skyway Monitoring Station - H2S Monitor	2022	17,000
Lou's Blvd. Pump Station - Pumps	2015	7,000
Lou's Blvd. Pump Station - Access Hatch	2015	6,000
Lou's Blvd. Pump Station - Pumps	2017	10,000
Lou's Blvd. Pump Station - Piping	2017	122,000
Lou's Blvd. Pump Station - Controls	2018	104,000
Lou's Blvd. Pump Station - Back up Power Generator	2019	191,000
Ridge Road Pump Station - Pumps	2015	6,000
Ridge Road Pump Station - Controls	2016	25,000
Ridge Road Pump Station - Pumps	2018	8,000
Ridge Road Pump Station - Piping	2024	59,000
MacLennan St. Pump Station - Pump	2016	10,000
MacLennan St. Pump Station - Pump	2018	10,000
MacLennan St. Pump Station - Piping & Valves	2024	59,000
MacLennan St. Pump Station - Roof	2024	16,000
Sanitary Sewers - Harris	2018	774,000
Rockwood Vehicles - Wastewater Share	2019-2020	20,000
Sanitary Sewer Manholes	2018	33,000
SCADA Communciation Upgrade	2016	15,000
SCADA Control Upgrade	2018	26,000
Studies:		
Rate Study	2015, 2020 & 2025	38,500
Financial Plan	2015, 2020 & 2025	13,000
SCADA Study	2016, 2020 & 2024	30,000
Growth Related:		
New Operational Space	2016-2017	107,000
Pick up Truck	2016	13,000
Work Truck	2019	14,000
Alma St. Sewer (upstream of plant)	2016	576,000
Alma St Pre-Treatment and Storage (including land)	2015-2016	4,357,000
Total Capital Expenditures		6,670,500

For the Gazer Mooney water and wastewater capital forecast, infrastructure replacements for \$159,500 as well as a proportionate share of the rate study and financial plan has been identified as summarized in Table 2-4.

Table 2-4
Gazer-Mooney Water & Wastewater Capital Budget Forecast
Inflated \$

Description	Timing	Total (2015-2025)
Capital Expenditures		
Lifecycle:		
Wastewater Facilities	2020 & 2025	159,500
Studies:		
Rate Study	2015, 2020 & 2025	960
Water Financial Plan	2015, 2020 & 2025	540
Total Capital Expenditures		161,000

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.

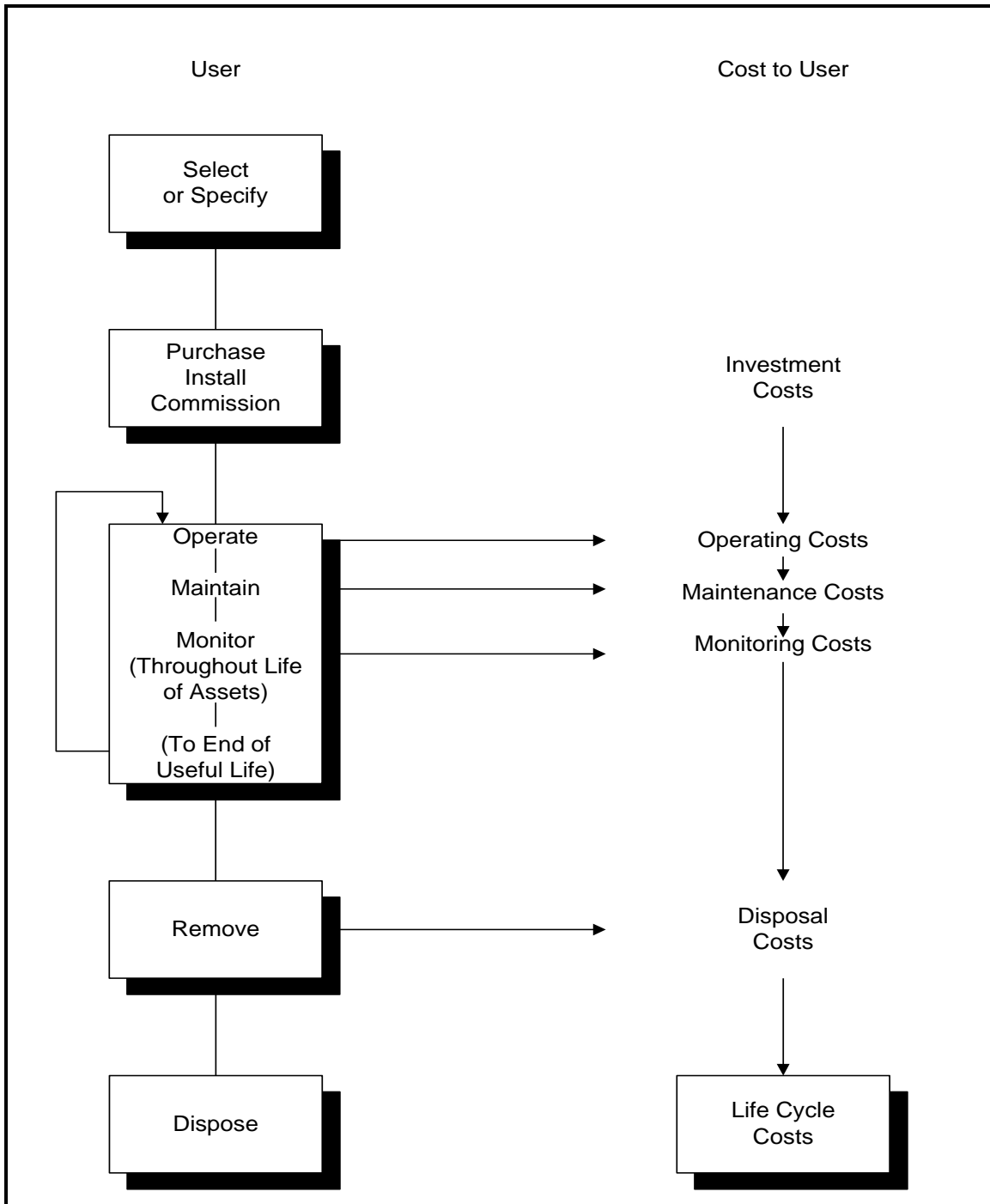
In a municipal context, services are provided to benefit tax/rate payers. Acquisition of assets is normally timed in relation to direct needs within the community. At times, economies of scale or technical efficiencies will lead to oversizing an asset to accommodate future growth within the Township. 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; operating budget contributions, development charges, reserves, developer contributions and debentures, being the most common.

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.

**Figure 3-1
Lifecycle Costing**



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

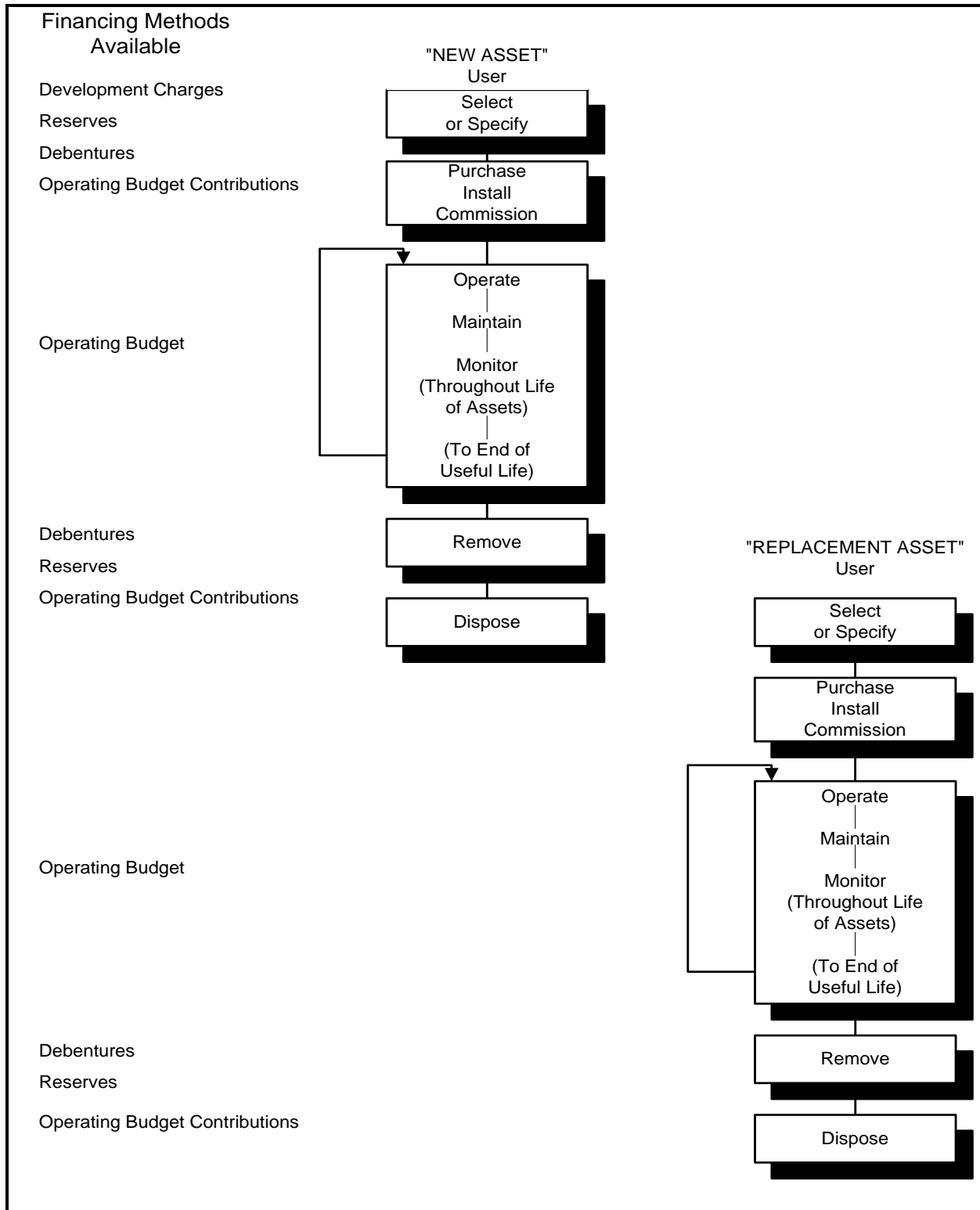
Figure 3-2 depicts the costs of an asset from its initial conception through to replacement and then continues to follow the associated costs through to the next replacement.

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; 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 of an asset is the fundamental concept behind depreciation methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms part of the product's selling price and hence end users are charged for the asset's depreciation. The same concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future.

**Figure 3-2
Financing Lifecycle Costs**



3.1.3 Costing Methods

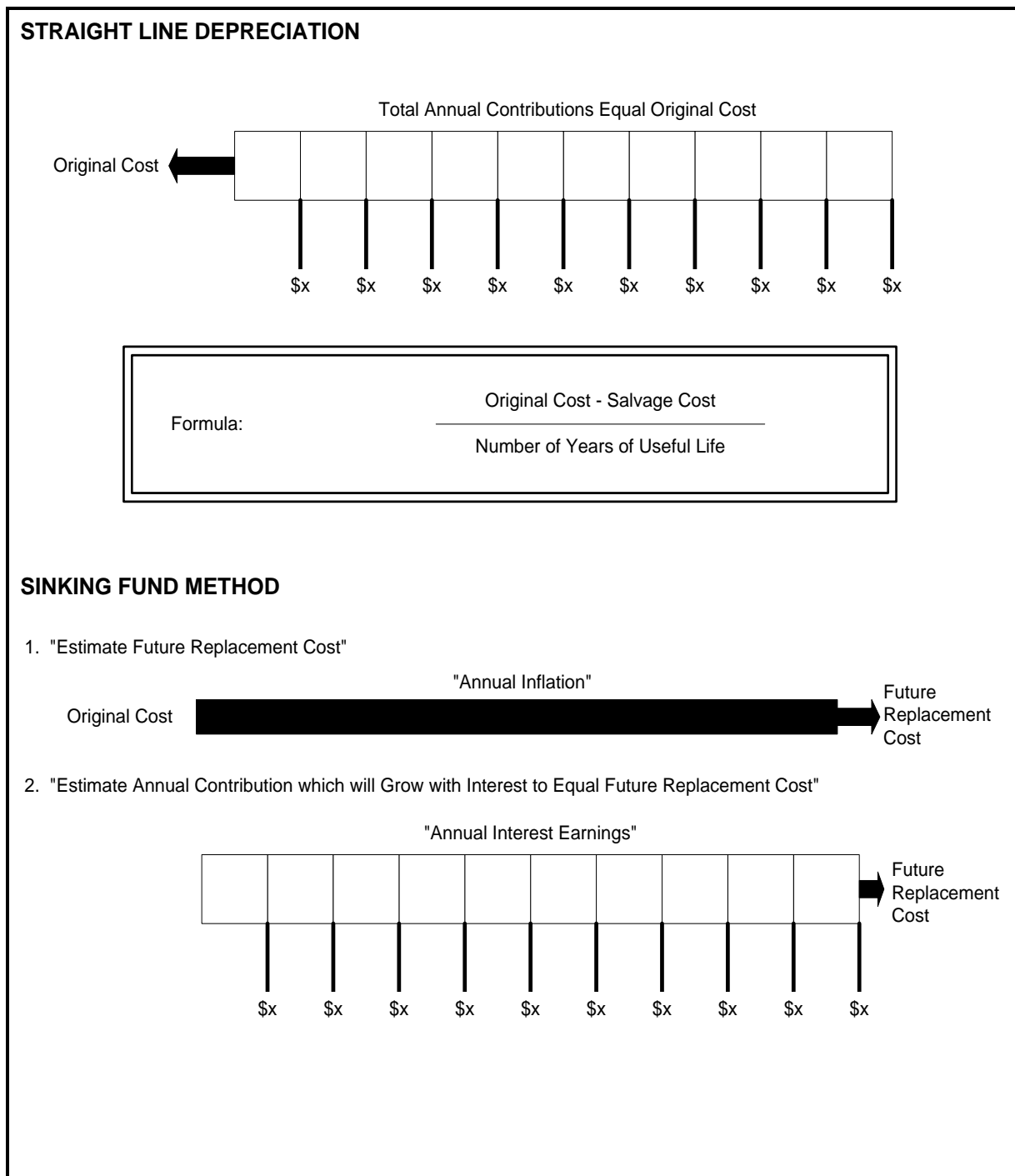
There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Depreciation Method. This method recognizes the reduction in the value of the asset through wear and tear and aging. There are two commonly used forms of depreciation: the straight-line method and the reducing balance method (shown graphically in Figure 3-3).

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

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

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

Figure 3-3



3.2 Impact on Budgets

The age of the Hamilton Drive area water system date back to the late 1960's. In the Rockwood area, the age of the water system dates back to the mid 1970's and the wastewater system date back to 1975. Gazer-Mooney water and sewer mains date

back to 1980. The total value of Township-owned existing water infrastructure is \$24.4 million and the value of existing wastewater infrastructure is \$39 million.

The detailed watermain inventory and wastewater inventory for 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 Table 3-1.

Table 3-1
Guelph/Eramosa
Summary of Water and Wastewater Infrastructure

Area	Total Replacement Value	Amount to be funded in 10 year forecast	Net Replacement for Future Lifecycle	Annual Lifecycle Replacement
Water				
Gazer-Mooney Watermains	794,830	-	794,830	21,958
Vehicles-Hamilton Dr. Share	8,624	8,624	-	-
Hamilton Dr. Water Meters	15,738	10,800	4,938	1,851
Hamilton Dr. Hydrants	167,200	22,800	144,400	7,067
Hamilton Dr. Watermains	4,095,850	-	4,095,850	107,613
Hamilton Dr. Facilities	3,033,936	359,150	2,674,786	117,774
Vehicles-Rockwood Share	34,496	34,496	-	-
Rockwood Water Meters	332,820	127,440	205,380	13,964
Rockwood Hydrants	654,400	201,400	453,000	18,888
Rockwood Watermains	10,704,470	244,840	10,459,630	372,632
Rockwood Facilities	4,520,150	486,150	4,034,000	205,838
Total Water	24,362,514	1,495,700	22,866,814	867,585
Wastewater				
Gazer-Mooney Forcemains	527,875	-	527,875	14,583
Gazer-Mooney Sewers	1,170,000	-	1,170,000	32,323
Gazer-Mooney Wastewater Facilities	632,000	132,000	500,000	28,987
Rockwood Vehicles - Wastewater Share	18,480	18,480	-	-
Rockwood Sanitary Sewer Manholes	1,292,000	32,000	1,260,000	54,447
Rockwood Forcemains	1,510,000	-	1,510,000	70,165
Rockwood Facilities	3,359,000	740,000	2,619,000	147,606
Rockwood Wastewater Facilities - Skyway Monitoring Station	757,600	15,200	742,400	32,873
Rockwood Sewers	29,761,583	744,394	29,017,189	1,111,950
Total Wastewater	39,028,538	1,682,074	37,346,464	1,492,934
Total Water and Wastewater	63,391,052	3,177,774	60,213,278	2,360,519

Investment per customer is approximately \$12,676 for water and \$22,877 for wastewater

It is noted that the inventory of the complete water and wastewater systems may be required to be assessed and reported on by a professional engineer as part of the documentation required under the Water Opportunities Act. The detailed specifics of the reporting will not be known until the Province has set these standards by regulation. With respect to lifecycle costing contained in the Appendices the following information was taken under consideration:

- approximate age;

- material type;
- main lengths;
- diameter of the mains;
- estimated useful life; and
- estimated replacement costs.

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 Development Charges Act).

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 Township'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. 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.

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

Recovery Methods	Section Reference
<ul style="list-style-type: none"> • Development Charges Act, 1997 	4.2
<ul style="list-style-type: none"> • Municipal Act <ul style="list-style-type: none"> ○ Fees and Charges ○ Sewer and Water Area Charges ○ Connection Fees ○ Local Improvements 	4.3

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 Township. Generally the new Act provided the following changes to the former Act:

- Replace those sections of the 1989 D.C.A. which govern municipal development charges. (Education development charges are not to be significantly altered at this time);
- 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 Township to reimburse the developer for the costs the Township 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, and transitional rules, including that municipalities will have up to 18 months from the date of proclamation of the new Act to establish new development charge by-laws, otherwise the old by-laws will expire.

The Township presently imposes development charges in the Rockwood area for both water and wastewater services. The current development charges are shown below.

2015 - Residential Development Charge Rates	Single & Semi-Detached	Multiple Unit Dwellings	Apartments - 2+ Bedrooms	Apartments - < 2 Bedrooms	Non-Residential - Per square Foot
Rockwood Area - Water	\$2,957	\$2,167	\$1,685	\$1,141	\$1.25
Rockwood Area - Wastewater	\$11,815	\$8,659	\$6,731	\$4,557	\$5.00

4.3 Municipal Act

4.3.1 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 Township 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 O.M.B..

4.3.2 s.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 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 in 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

- O.M.B. 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 O.M.B. on the grounds that the charges are “unfair or unjust”.

4.3.3 s.222 of the previous Municipal Act permitted municipalities to pass a by-law requiring buildings to connect to the Township’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.

4.3.4 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 O.M.B., 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

Since the early 1980's, the level of provincial and federal assistance toward municipal infrastructure has declined significantly. By the mid 1990's, there were very limited funds available from senior levels of government. In mid-2000, initiatives from the provincial and federal level were announced; providing for a new program (O.S.T.A.R.) to assist small cities, Municipalities and rural areas in addressing infrastructure improvements. In November 2004, another program (C.O.M.R.I.F.) was introduced which also provided combined assistance from the senior governments until early 2007. Subsequently federal and provincial funding has been made available under the Build Canada Fund and Stimulus Fund Programs. Under the specific requirements of these programs, the projects needed to be “shovel-ready” and were allocated on a case by case basis.

In August 2012, the province of Ontario initiated the Municipal Infrastructure Investment Initiative (MIII). In supporting the efforts of communities to restore and revitalize their public infrastructure, this initiative provides one-time provincial funding to improve asset management planning in small municipalities and local service boards. In addition, funding will be made available for municipal infrastructure projects under this initiative. Any Township or local service board seeking capital funding in the future must demonstrate how its proposed project fits within a detailed asset management plan. To assist in defining the components of an asset management plan, the Province produced a document entitled Building Together: Guide for Municipal Asset Management Plans. This guide documents the components, information and analysis that are required to be included in a Township's asset management plan under this initiative.

4.5 Existing Reserves/Reserve Funds

The Township has established reserves and reserve funds for water and wastewater costs. The following table summarizes the water and wastewater reserves utilized in this analysis and their respective balances at December 31, 2014:

Reserve	Dec. 31 2014
Water - Hamilton Drive	
Capital Reserve Fund	38,633
Lifecycle Reserve Fund	15,737
Water - Rockwood	
Capital Reserve Fund	310,962
Development Charges Reserve Fund	(158,416)
Lifecycle Reserve Fund	758,891
Water Combined Operating Reserve	(28,152)
Wastewater - Rockwood	
Capital Reserve Fund	129,116
Development Charges Reserve Fund	(851,528)
Lifecycle Reserve Fund	582,224
Wastewater Operating Reserve	(37,582)
Gazer-Mooney Lifecycle Replacement Reserve Fund	230,463

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 Regulations 403/02 provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a Township's debt capacity is capped at a level where no more than 25% of the Township's own purpose revenue may be allotted for servicing the debt (i.e. debt charges). Appendix J provides for the Township of Guelph/Eramosa's 2015 calculation on Debt Capacity, which is Schedule 81 of the Township's 2014 Financial Information Return, as can be seen in Appendix F, the Town's maximum borrowing levels are in the \$8 - \$25 million range. It should be noted, however, that the issuance of debt should be managed at levels sustainable by the Township. Issuance of large amounts of debt in any one year can have dramatic impacts on taxes and rates. Hence, proper management of capital spending and the level of debt issued annually must be monitored and evaluated over the longer-term period.

4.7 Infrastructure Renewal Bonds

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 financial agreement with each Township 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 2004-05 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.

It is noted that the interest rates will vary from time to time. The following interest rates were available to municipalities for the following term, based on a serial repayment schedule as of July 2, 2015:

Indicative Lending Rates as of July 2, 2015	
Term	Serial
5 Year	1.55%
10 Year	2.30%
15 Year	2.78%
20 Year	3.06%
25 Year	3.23%
30 Year	3.34%

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 borrow approximately \$1.23 million for water services and \$1.5 million for wastewater services over the forecast, for a ten year term at 4.0%. Appendix E, Table E-3 and Appendix I, Table I-3 provides the estimated repayment schedule for these loans.

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 provided in Chapter 2:

Guelph/Eramosa
Capital Revenue Summary
Inflated \$

Description	Rockwood Water Total (2015-2025)	Rockwood Wastewater Total (2015-2025)	Hamilton Drive Water Total (2015-2025)	Gazer-Mooney Combined Total (2015-2025)
Capital Financing				
Provincial/Federal Grants	-	-	-	-
Development Charges Reserve Fund	337,000	2,823,500	-	-
Non-Growth Related Debenture Requirements	-	-	-	-
Growth Related Debenture Requirements	1,232,500	2,190,000	-	-
Operating Contributions	-	-	-	-
Lifecycle Reserve Fund	1,279,500	1,441,000	391,600	161,780
Water or Wastewater Reserve	729,538	216,000	66,858	-
Total Capital Financing	3,578,538	6,670,500	458,458	161,780

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

Table 4-1
Guelph/Eramosa
Water Service
Capital Budget Forecast - Hamilton Drive
 Inflated \$

Description	Budget 2015	Total	Forecast											
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Capital Expenditures														
Lifecycle:														
Hamilton Dr Standpipe Maintenance - Seal & anode replacement & cleaning	-	65,000	65,000	-	-	-	-	-	-	-	-	-	-	-
Standpipe/Cross Creek Well #3 - Replace Electrical Panel	-	10,000	10,000	-	-	-	-	-	-	-	-	-	-	-
Standpipe/Cross Creek Well #3 - Replace Chlorine Analyzer	-	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
Standpipe/Cross Creek Well #3 - Replace piping	-	47,800	-	-	-	-	-	-	-	-	-	-	-	47,800
Cross Creek Well #3 - Replace Well Pump	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Cross Creek Well #3 - Replace Well Piping	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Cross Creek Well #3 - Air lift well	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Cross Creek Pumphouse - replace electrical panel	-	8,200	-	8,200	-	-	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace chlorine pumps	-	6,100	-	6,100	-	-	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace hypo pump controller	-	4,700	-	-	4,700	-	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace Pressure Regulator Valve	-	8,500	-	-	-	8,500	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace High Lift Pumps	-	13,800	-	-	-	-	-	-	-	-	13,800	-	-	-
Cross Creek Pumphouse - replace Flow Meters	-	11,500	-	-	-	-	-	-	-	-	11,500	-	-	-
Cross Creek Pumphouse - replace Piping	-	12,000	-	-	-	-	-	-	-	-	-	-	-	12,000
Huntington Well #2 - replace well pump	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Huntington Well #2 - replace well piping	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Huntington Well #2 - air lift & clean during pump/piping replacement	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Huntington Drive Pumphouse - replace electrical panel	8,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - back up power generator	-	61,200	-	61,200	-	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace chlorine pumps	-	3,100	-	3,100	-	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace chlorine analyzer	-	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace pressure regulator valve	-	8,700	-	-	-	-	8,700	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace high lift pumps	-	13,800	-	-	-	-	-	-	-	-	13,800	-	-	-
Huntington Drive Pumphouse - replace flow meters	-	10,500	-	-	-	-	-	-	-	-	-	10,500	-	-
Huntington Drive Pumphouse - replace piping	-	12,000	-	-	-	-	-	-	-	-	-	-	-	12,000
Watermains	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrants	-	24,200	-	-	-	24,200	-	-	-	-	-	-	-	-
SCADA Communciation Upgrade	12,500	-	-	-	-	-	-	-	-	-	-	-	-	-
SCADA Control Upgrade	-	16,200	-	-	7,800	-	-	-	8,400	-	-	-	-	-
Meter Replacement	5,000	6,700	-	-	-	-	-	-	1,600	1,700	1,700	1,700	1,700	-

Table 4-1 (con't)
Guelph/Eramosa
Water Service
Capital Budget Forecast - Hamilton Drive
 Inflated \$

Description	Budget 2015	Total	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Studies:													
Rate Study	1,518	3,000	-	-	-	-	1,500	-	-	-	-	-	1,500
Financial Plan	840	1,800	-	-	-	-	900	-	-	-	-	-	900
SCADA Study	-	34,200	10,500	-	-	-	11,400	-	-	-	-	12,300	-
Total Capital Expenditures	27,858	430,600	85,500	78,600	18,700	32,700	22,500	-	10,000	82,200	24,500	75,900	-
Capital Financing													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Drive Water Lifecycle Reserve Fund	25,500	366,100	49,500	78,600	18,700	32,700	8,700	-	10,000	82,200	12,200	73,500	-
Hamilton Drive Water Capital Reserve Fund	2,358	64,500	36,000	-	-	-	13,800	-	-	-	12,300	2,400	-
Total Capital Financing	27,858	430,600	85,500	78,600	18,700	32,700	22,500	-	10,000	82,200	24,500	75,900	-

**Table 4-2
Guelph/Eramosa
Water Service
Capital Budget Forecast - Rockwood
Inflated \$**

Description	Budget 2015	Total	Forecast									
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Capital Expenditures												
Chlorine Pump - spare	-	3,000	3,000	-	-	-	-	-	-	-	-	-
Hydrant Mounted PRV	-	2,000	2,000	-	-	-	-	-	-	-	-	-
Small Dump Trailer	-	9,000	-	9,000	-	-	-	-	-	-	-	-
Valley Road - Richardson Watermain Connection	-	403,000	-	-	-	403,000	-	-	-	-	-	-
Lifecycle:												
Facilities:												
Station Street Well #1 & #2 - Replace Well Pumps	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Station Street Well #1 & #2 - Replace Well Piping	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Station Street Well #1 & #2 - Air lift well	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Station Street Pumphouse - Replace existing unit heaters	2,000	-	-	-	-	-	-	-	-	-	-	-
Station Street Pumphouse - Replace Chlorine analyzer	-	4,000	4,000	-	-	-	-	-	-	-	-	-
Station Street Pumphouse - Replace pressure regulating valves	-	12,000	12,000	-	-	-	-	-	-	-	-	-
Station Street Pumphouse - Replace turbidity Analyzer	-	5,000	-	-	-	5,000	-	-	-	-	-	-
Station Street Pumphouse - Replace flow meters	-	12,000	-	-	-	-	-	-	12,000	-	-	-
Station Street Pumphouse - Replace chlorine pumps	-	10,000	-	-	-	-	-	-	-	-	-	10,000
Bernardi Well #3 - Replace Well Pumps	-	12,000	-	-	-	12,000	-	-	-	-	-	-
Bernardi Well #3 - Replace Well Piping	-	7,000	-	-	-	-	-	-	-	7,000	-	-
Bernardi Well #3 - Air lift well	-	7,000	-	-	-	-	-	-	-	7,000	-	-
Bernardi Pumphouse - Replace Chlorine Analyzer	-	4,000	-	-	4,000	-	-	-	-	-	-	-
Bernardi Pumphouse - Replace Pressure Regulator Valve	-	11,000	-	-	-	-	11,000	-	-	-	-	-
Bernardi Pumphouse - Replace Chlorine Feed	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Bernardi Pumphouse - Replace Roof	-	17,000	-	-	-	-	-	17,000	-	-	-	-
Bernardi Pumphouse - Replace Pumps	-	11,000	-	-	-	-	-	11,000	-	-	-	-
Booster Pump Station - Roof	-	23,000	-	-	-	-	-	-	-	23,000	-	-
Booster Pump Station - Pumps	-	18,000	-	-	-	-	18,000	-	-	-	-	-
Booster Pump Station - Chemical Feed	-	52,000	-	-	-	-	-	-	-	52,000	-	-
Booster Pump Station - Controls	-	107,000	-	-	-	-	-	-	-	107,000	-	-
Water Meters	12,000	127,000	13,000	13,000	13,000	8,000	12,000	12,000	12,000	14,000	15,000	15,000
Water Vehcles	-	37,000	-	-	-	24,000	13,000	-	-	-	-	-
Rockwood Hydrants	-	241,000	-	-	-	-	-	-	-	-	-	241,000
Rockwood Watermains - Harris	-	318,000	-	-	318,000	-	-	-	-	-	-	-
Studies:												
Rate Study	11,491	27,000	-	-	-	-	13,000	-	-	-	-	14,000
Financial Plan	6,380	15,000	-	-	-	-	7,000	-	-	-	-	8,000
SCADA Study	-	34,000	11,000	-	-	-	11,000	-	-	-	12,000	-
Growth Related:												
Development of New Well (Seaton)	119,000	-	-	-	-	-	-	-	-	-	-	-
Construction of new Pumping Station (Seaton)	67,000	1,046,000	850,000	102,000	94,000	-	-	-	-	-	-	-
New Operational Space	-	249,000	35,000	214,000	-	-	-	-	-	-	-	-
Pick up Truck	-	29,000	29,000	-	-	-	-	-	-	-	-	-
Work Truck	-	33,000	-	-	-	33,000	-	-	-	-	-	-
Station St. Standby Power	151,000	-	-	-	-	-	-	-	-	-	-	-
Payment of Credits	232,666	-	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	601,538	2,977,000	959,000	338,000	429,000	485,000	85,000	40,000	116,000	210,000	27,000	288,000

Table 4-2 (Cont.)
 Guelph/Eramosa
 Water Service
 Capital Budget Forecast - Rockwood
 Inflated \$

Description	Budget 2015	Total	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Capital Financing													
Provincial/Federal Grants		-											
Development Charges Reserve Fund	337,000	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	1,232,500	896,500	209,000	94,000	33,000	-	-	-	-	-	-	-
Lifecycle Reserve Fund	14,000	1,265,500	51,500	129,000	335,000	49,000	54,000	40,000	116,000	210,000	15,000	266,000	
Water Reserve	250,538	479,000	11,000	-	-	403,000	31,000	-	-	-	12,000	22,000	
Total Capital Financing	601,538	2,977,000	959,000	338,000	429,000	485,000	85,000	40,000	116,000	210,000	27,000	288,000	

Table 4-3
Guelph/Eramosa
Rockwood Wastewater Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2015	Total	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Capital Expenditures													
Small Dump Trailer	-	4,000	-	4,000	-	-	-	-	-	-	-	-	-
Lifecycle:													
Skyway Monitoring Station - H2S Monitor	-	17,000	-	-	-	-	-	-	17,000	-	-	-	-
Lou's Blvd. Pump Station - Pumps	7,000	-	-	-	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Access Hatch	6,000	-	-	-	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Pumps	-	10,000	-	10,000	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Piping	-	122,000	-	122,000	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Controls	-	104,000	-	-	104,000	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Back up Power Generator	-	191,000	-	-	-	191,000	-	-	-	-	-	-	-
Ridge Road Pump Station - Pumps	6,000	-	-	-	-	-	-	-	-	-	-	-	-
Ridge Road Pump Station - Controls	-	25,000	25,000	-	-	-	-	-	-	-	-	-	-
Ridge Road Pump Station - Pumps	-	8,000	-	-	8,000	-	-	-	-	-	-	-	-
Ridge Road Pump Station - Piping	-	59,000	-	-	-	-	-	-	-	-	-	59,000	-
MacLennan St. Pump Station - Pump	-	10,000	10,000	-	-	-	-	-	-	-	-	-	-
MacLennan St. Pump Station - Pump	-	10,000	-	-	10,000	-	-	-	-	-	-	-	-
MacLennan St. Pump Station - Piping & Valves	-	59,000	-	-	-	-	-	-	-	-	-	59,000	-
MacLennan St. Pump Station - Roof	-	16,000	-	-	-	-	-	-	-	-	-	16,000	-
Sanitary Sewers - Harris	-	774,000	-	-	774,000	-	-	-	-	-	-	-	-
Rockwood Vehicles - Wastewater Share	-	20,000	-	-	-	13,000	7,000	-	-	-	-	-	-
Sanitary Sewer Manholes	-	33,000	-	-	33,000	-	-	-	-	-	-	-	-
SCADA Communciation Upgrade	-	15,000	15,000	-	-	-	-	-	-	-	-	-	-
SCADA Control Upgrade	-	26,000	-	-	12,000	-	-	-	14,000	-	-	-	-
Studies:													
Rate Study	11,500	27,000	-	-	-	-	-	13,000	-	-	-	-	14,000
Financial Plan	4,000	9,000	-	-	-	-	-	4,000	-	-	-	-	5,000
SCADA Study	-	30,000	9,000	-	-	-	-	10,000	-	-	-	11,000	-
Growth Related:													
New Operational Space	-	107,000	15,000	92,000	-	-	-	-	-	-	-	-	-
Pick up Truck	-	13,000	13,000	-	-	-	-	-	-	-	-	-	-
Work Truck	-	14,000	-	-	-	14,000	-	-	-	-	-	-	-
Alma St. Sewer (upstream of plant)	-	576,000	576,000	-	-	-	-	-	-	-	-	-	-
Alma St Pre-Treatment and Storage (including land)	436,000	3,921,000	3,921,000	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	470,500	6,200,000	4,584,000	228,000	941,000	218,000	34,000	-	31,000	-	145,000	19,000	
Capital Financing													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	436,000	2,387,500	2,327,500	46,000	-	14,000	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	2,190,000	2,190,000	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	1,441,000	35,000	132,000	929,000	204,000	7,000	-	-	-	134,000	-	-
Wastewater Reserve	34,500	181,500	31,500	50,000	12,000	-	27,000	-	31,000	-	11,000	19,000	-
Total Capital Financing	470,500	6,200,000	4,584,000	228,000	941,000	218,000	34,000	-	31,000	-	145,000	19,000	

Table 4-4
Guelph/Eramosa
Gazer-Mooney Water & Wastewater Services
Capital Budget Forecast
 Inflated \$

Description	Budget 2015	Total	Forecast									
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Capital Expenditures												
Lifecycle:		-										
Watermains	-	-	-	-	-	-	-	-	-	-	-	-
Forcemains	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary Sewers	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Facilities	-	159,500	-	-	-	-	13,200	-	-	-	-	146,300
Studies:												
Rate Study	500	960					500					460
Water Financial Plan	280	540					280					260
Total Capital Expenditures	780	161,000	-	-	-	-	13,980	-	-	-	-	147,020
Capital Financing												
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-
Gazer-Mooney Lifecycle Reserve Fund	780	161,000	-	-	-	-	13,980	-	-	-	-	147,020
Total Capital Financing	780	161,000	-	-	-	-	13,980	-	-	-	-	147,020

5. Overview of Expenditures and Revenues

5.1 Water Operating Expenditures

In this report the forecasted water budget figures (2016-2025) are based on the 2015 Operating Budget as well as additional information provided by staff. The Hamilton Drive Area and Rockwood Area water operating forecast is combined. The costs are shared based on the % of total metered volumes, with Hamilton Drive's share currently being approximately 14% and the Rockwood Area being approximately 86%. The percentage fluctuates in the forecast, based on the share of the forecasted metered volumes. The costs for each component of the operating budget have been reviewed with staff to establish forecast inflationary adjustments. The table below summarizes these assumptions. In addition to inflationary adjustments a number of expenditures have been adjusted for increases anticipated due to new infrastructure coming on line and or additional staff needs, as noted in the table below.

Item	Inflation	Other Adjustments
Water Operating Costs		
Advertising	2.0%	
Communications	2.0%	2016 - Additional 6 month communication costs for Seaton Well and Pumphouse 2017 - 1 additional FT Trainee and addition communication for Seaton Well and Pumphouse
Conservation Initiatives	2.0%	
Fees - Audit	2.0%	
Fees - Engineering	2.0%	2016 - Additional Monitoring and Maintenance Support for Seaton Well and Pumphouse
Fees - Legal	2.0%	
Fleet	2.0%	2016 - Water/WW to purchase new work truck added maintainace, fuel
Grounds Maintenance	2.0%	2016 - Additional facilities
Hydro	2.0%	2016 - Seaton Well and Pumphouse online in September estimate additional costs for hydro 2017 - Seaton Well and Pumphouse online for full year additional hydro costs
Natural Gas	2.0%	2016 - Estimate natural gas costs for new generator
Insurance	2.0%	2016 - Additional vehicle in 2016 and Seaton Well Facility
Licenses	2.0%	
Locates	2.0%	
Memberships and Dues	2.0%	2017 - Additional Staff
Meter Repairs	2.0%	
Contracted Services	4.0%	2016 - Additional testing and meter reads due to growth and added facility
Postage & Shipping	2.0%	2016 - Additional billing etc.
Repairs & Maint - Buildings	2.0%	2016 - Added facility
Repairs & Maint - Equipment	2.0%	2016 - Added Costs for added maintenance for new well and pumphouse
Repairs & Maint - Water Mains	2.0%	
Safety	2.0%	
Salaries and Wages	2.0%	2016 - Includes 50% cost of Co-op Student to complete GIS Mapping Project 2017 - Added full-time new trainee 2018 & 2019 - Adjustments for Succession Planning
Salaries Benefits	2.0%	
Seminars & Training	2.0%	2016 - Additional training for new operator 2017 - Additional training for new trainee
Supplies and Services	2.0%	2016 - Added supplies costs for new facility and cost for citywide support
Telephone	2.0%	2016 - Added phone costs for new facility
Uniforms	2.0%	2017 - Added uniform for new trainee
Water Meter Stock	2.0%	
Transfers to Reserves		Based on capital and operating forecast requirements
Service Agreements		Based on capital and operating forecast requirements
Overhead Costs		Based on capital and operating forecast requirements

5.2 Water Operating Revenues

The Township has miscellaneous revenue sources to contribute towards operating expenditures, such as penalty and interest costs. These have been held constant over the period. Table 5-1 provides for the operating budget for the water system.

Table 5-1
Guelph/Eramosa
Water Services
Rockwood and Hamilton Drive Combined Operating Budget Forecast
 Inflated \$

Description	Budget 2015	Forecast									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Expenditures											
<u>Operating Costs</u>											
Advertising	750	765	780	796	812	828	845	862	879	897	915
Communications	7,000	7,640	10,500	10,710	10,924	11,143	11,366	11,593	11,825	12,062	12,303
Conservation Initiatives	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219
Fees - Audit	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390	2,438
Fees - Engineering	30,000	33,000	33,660	34,333	35,020	35,720	36,435	37,164	37,907	38,665	39,438
Fees - Legal	500	510	520	531	541	552	563	574	585	597	609
Fleet	16,000	19,000	19,380	19,768	20,163	20,566	20,978	21,398	21,826	22,263	22,708
Grounds Maintenance	2,600	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585
Hydro	67,000	73,340	94,807	96,703	98,637	100,610	102,622	104,674	106,767	108,902	111,080
Natural Gas	-	800	3,400	3,468	3,537	3,608	3,680	3,754	3,829	3,906	3,984
Insurance	30,782	32,900	34,558	35,249	35,954	36,673	37,407	38,155	38,918	39,696	40,490
Licenses	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219
Locates	500	510	520	531	541	552	563	574	585	597	609
Memberships and Dues	1,200	1,224	1,500	1,530	1,561	1,592	1,624	1,656	1,689	1,723	1,757
Meter Repairs	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219
Contracted Services	35,000	36,700	38,434	40,203	42,007	43,847	45,601	47,425	49,322	51,295	53,347
Postage & Shipping	12,000	12,740	13,500	14,000	14,500	15,000	15,300	15,606	15,918	16,236	16,561
Repairs & Maint - Buildings	2,500	2,800	3,500	3,570	3,641	3,714	3,789	3,865	3,942	4,021	4,101
Repairs & Maint - Equipment	20,000	25,000	30,000	30,600	31,212	31,836	32,473	33,122	33,784	34,460	35,149
Repairs & Maint - Water Mains	28,000	28,560	29,131	29,714	30,308	30,914	31,533	32,164	32,807	33,463	34,132
Safety	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	3,657
Salaries and Wages	278,200	290,496	349,500	376,490	414,220	422,504	430,954	439,573	448,364	457,331	466,478
Salaries Benefits	83,460	87,149	104,850	112,947	124,266	126,751	129,286	131,872	134,509	137,199	139,943
Seminars & Training	8,000	10,000	12,000	12,240	12,485	12,734	12,989	13,249	13,514	13,784	14,060
Supplies and Services	47,000	51,500	56,500	57,630	58,783	59,958	61,157	62,380	63,628	64,901	66,199
Telephone	4,000	4,500	5,300	5,406	5,514	5,624	5,737	5,852	5,969	6,088	6,210
Uniforms	2,100	2,142	2,685	2,739	2,793	2,849	2,906	2,964	3,023	3,083	3,145
Water Meter Stock	4,000	4,080	4,162	4,245	4,330	4,416	4,505	4,595	4,687	4,781	4,877
Transfers to Reserves	86,778	115,747	55,566	81,445	98,781	141,905	188,004	168,586	221,733	278,878	341,577
Service Agreements	-	3,000	3,060	3,121	3,183	3,247	3,312	3,378	3,446	3,515	3,585
Overhead Costs	25,481	15,000	15,300	15,606	15,918	16,236	16,561	16,892	17,230	17,575	17,927
Total Expenditures	800,851	870,262	934,497	1,005,185	1,081,475	1,145,463	1,212,510	1,214,495	1,289,506	1,368,993	1,454,521
Revenues											
Base Charge	-	170,100	176,164	182,684	189,394	196,202	203,107	140,275	145,424	150,722	156,318
Penalty and Interest	7,068	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600
Miscellaneous Revenue	13,700	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Grant Funding - Operational	-	-	-	-	-	-	-	-	-	-	-
Water Meters	8,000	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500
Tax Revenue - Frontage Charges	-	-	-	-	-	-	-	-	-	-	-
Contributions from Operating Reserves / Reserve Funds	147,700	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	176,468	193,200	199,264	205,784	212,494	219,302	226,207	163,375	168,524	173,822	179,418
Total Water Billing Recovery - Operating	624,383	677,062	735,233	799,401	868,982	926,162	986,303	1,051,120	1,120,982	1,195,171	1,275,102

Note that the Base Charge Revenue in 2015 is applied 100% against capital not operating

5.3 Wastewater Operating Expenditures

The wastewater forecast pertains to Rockwood Area only. Similar to the budget forecasting approach presented above for water services, the costs for wastewater operating expenditures have been summarized and adjusted over the forecast by inflationary and/or other criteria. The table below summarizes these assumptions:

Item	Inflation	Other Adjustments
Wastewater Operating Costs	2.0%	
Communications	2.0%	
Conservation Initiatives	2.0%	
Fees - Engineering	2.0%	
Fees - Legal	2.0%	
Fees - Professional - Other	2.0%	
Fleet	2.0%	2016 - Share of added vehicle costs
Grounds Maintenance	2.0%	
Hydro	2.0%	2017 - Alma street plus operation space 2020 - Bonner SPS additional Hydro
Natural Gas	2.0%	2017 - Natural Gas for new facility back up power (alma) and operator space heating
Insurance	0.0%	2017 - Added operational space
Insurance Claims	2.0%	
Licenses	2.0%	
Memberships and Dues	2.0%	2017 - New trainee
Contracted Services	2.0%	
Repairs & Maint - Building	2.0%	2017 - Alma pre-treatment plant and operation space
Repairs & Maint - Equipment	2.0%	2017 - Added Alma street facility 2020 - Bonner SPS
Repairs & Maint - Water/WW Mains	2.0%	2016 - Includes sanitary sewer linear flushing
Safety	2.0%	2017 - Additional trainee
Salaries and Wages	3.0%	2016 - Added Co-op student for GIS Mapping Project 2017 - Added new trainee 2018 - Adjustment for Succession Planning
Salaries Benefits	2.0%	
Seminars and Training	2.0%	
Supplies and Services	2.0%	2017 - New pre-treatment initiatives including chemicals etc. 2020 - Additional chemical etc. for new Bonner SPS
Telephone	2.0%	
Uniforms	5.0%	2017 - New trainee share of uniform costs
W/W Treatment City of Guelph	2.0%	
Service Agreements		Based on capital and operating forecast requirements
Overhead Costs		Based on capital and operating forecast requirements

5.4 Wastewater Operating Revenues

The revenue for the wastewater program has been forecasted based on growth, in the case of base charges and volume charges. Miscellaneous revenues have been held constant over the forecast period and the increases to the base charge is further discussed in Chapter 6.

Tables 5-2 provides the operating budget for the wastewater system.

Table 5-2
Guelph/Eramosa
Rockwood Wastewater Services
Operating Budget Forecast
Inflated \$

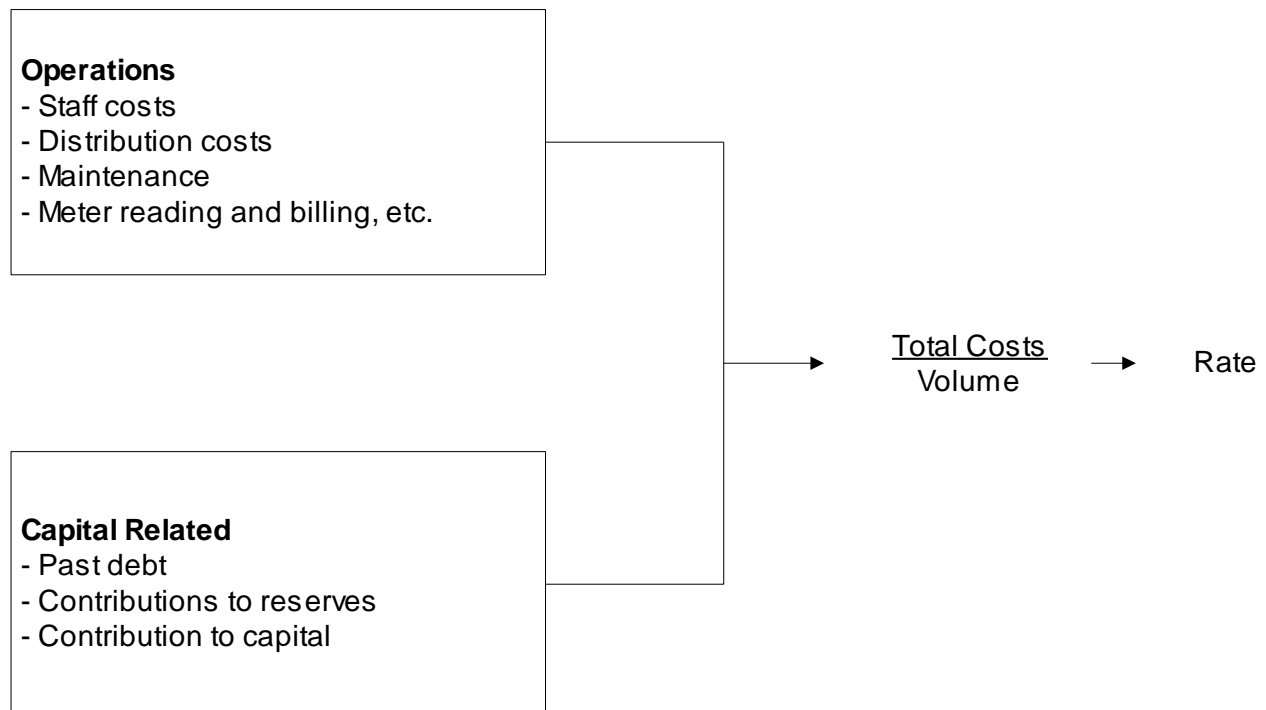
Description	Budget 2015	Forecast									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Expenditures											
Operating Costs											
Communications	2,200	2,244	4,200	4,284	4,370	4,457	4,546	4,637	4,730	4,825	4,922
Conservation Initiatives	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219
Fees - Engineering	10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951	12,190
Fees - Legal	500	510	520	531	541	552	563	574	585	597	609
Fees - Professional - Other	-	-	-	-	-	-	-	-	-	-	-
Fleet	8,000	9,160	9,343	9,530	9,721	9,915	10,113	10,315	10,521	10,731	10,946
Grounds Maintenance	2,000	2,500	2,550	2,601	2,653	2,706	2,760	2,815	2,871	2,928	2,987
Hydro	13,000	13,260	41,000	41,820	42,656	46,000	46,920	47,858	48,815	49,791	50,787
Natural Gas	-	-	4,700	4,794	4,890	4,988	5,087	5,189	5,293	5,399	5,507
Insurance	10,913	11,131	12,500	12,750	13,005	13,265	13,530	13,801	14,077	14,359	14,646
Insurance Claims	-	-	-	-	-	-	-	-	-	-	-
Licenses	500	500	500	510	520	531	541	552	563	574	585
Memberships and Dues	800	816	1,200	1,224	1,248	1,273	1,299	1,325	1,352	1,379	1,407
Contracted Services	5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,744	5,859	5,976	6,096
Repairs & Maint - Building	1,700	1,734	4,000	4,080	4,162	4,245	4,330	4,417	4,505	4,595	4,687
Repairs & Maint - Equipment	25,000	25,500	30,000	30,600	31,212	33,000	33,660	34,333	35,020	35,720	36,434
Repairs & Maint - Water/WW Mains	20,000	23,000	23,460	23,929	24,408	24,896	25,394	25,902	26,420	26,948	27,487
Safety	1,500	1,530	1,761	1,796	1,832	1,869	1,906	1,944	1,983	2,023	2,063
Salaries and Wages	139,100	149,600	163,400	176,700	190,250	194,055	197,936	201,895	205,933	210,052	214,253
Salaries Benefits	41,725	44,880	49,020	53,010	57,075	58,217	59,381	60,569	61,780	63,016	64,276
Seminars and Training	5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,744	5,859	5,976	6,096
Supplies and Services	20,000	20,400	60,000	61,200	62,424	68,000	69,360	70,747	72,162	73,605	75,077
Telephone	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390	2,438
Uniforms	500	510	700	714	728	743	758	773	788	804	820
WW Treatment City of Guelph	420,000	441,000	463,050	486,203	510,513	536,038	562,840	590,982	620,531	651,558	684,136
Service Agreements	-	2,000	2,040	2,081	2,123	2,165	2,208	2,252	2,297	2,343	2,390
Overhead Costs	11,548	11,779	12,015	12,255	12,500	12,750	13,005	13,265	13,530	13,801	14,077
Sub Total Operating	741,986	785,514	909,888	955,019	1,001,727	1,045,058	1,082,039	1,120,566	1,160,706	1,202,536	1,246,135
Capital-Related											
Existing Debt (Principal) - Growth Related											
Existing Debt (Interest) - Growth Related											
New Growth Related Debt (Principal)	-	182,407	189,703	197,292	205,183	213,391	221,926	230,803	240,035	249,637	
New Growth Related Debt (Interest)	-	87,600	80,304	72,716	64,824	56,617	48,081	39,204	29,972	20,370	
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 Rockwood Wastewater Operating Reserve	155,405	195,405	175,405	175,405	155,405	155,405	155,405	155,405	155,405	-	-
Transfer to Rockwood Wastewater Capital Reserve	13,952	110,254	73,838	102,797	154,620	144,496	108,656	121,683	141,951	147,733	144,945
Sub Total Capital Related	169,357	305,659	519,250	548,210	580,032	569,909	534,069	547,095	567,364	417,740	414,952
Total Expenditures	911,343	1,091,174	1,429,139	1,503,229	1,581,759	1,614,967	1,616,108	1,667,661	1,728,070	1,620,276	1,661,087
Revenues											
Base Charge	83,059	200,760	208,080	215,987	224,127	232,506	241,131	250,278	259,971	269,950	280,512
Penalty and Interest	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Miscellaneous Revenue	-	-	-	-	-	-	-	-	-	-	-
Contributions from Development Charges Reserve Fund	-	-	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	87,059	204,760	482,087	489,994	498,134	506,514	515,138	524,286	533,978	543,957	554,519
Wastewater Billing Recovery - Operating	824,284	886,414	947,051	1,013,235	1,083,625	1,108,453	1,100,970	1,143,376	1,194,092	1,076,319	1,106,568
Lifecycle Reserve Contribution (\$)	23,000	25,000	25,000	25,000	25,000	75,000	150,000	180,000	180,000	350,000	375,000
Wastewater Billing Recovery - Total	847,284	911,414	972,051	1,038,235	1,108,625	1,183,453	1,250,970	1,323,376	1,374,092	1,426,319	1,481,568

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 which 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 Township. 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 metered volumes. 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 metered volumes but provides for a uniform spreading of costs

across all users. Some municipalities define users into different classes of similar metered volume 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 metered volumes, 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 of metered volume, regardless of the total 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 metered volumes increase. This form of rate requires the use of meters to record the volume utilized by each user. This method closely aligns the revenue recovery with metered volumes. Revenue collected varies directly with the metered volume.

Declining Block Rates: This rate structure charges a successively lower price for set volumes, as metered volume 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 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 utilized by each type of user. This method requires the collection and analysis of metered volume 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 utilized by each user. This method requires, as with the declining block structure, the collection and analysis of metered volume 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 Township 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 Township, based on metered volume 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 Township, but do not adjust in accordance with metered volumes. Thus, if actual metered volume for the year is greater than projected, the Township 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 metered volume 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 based on metered volume and generally will generate revenues in proportion to actual usage.

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 Township, 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 metered volumes and hence involve a major structure in place to administer. First, meters must be installed in all existing units in the Township 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 metered volumes.

The benefit derived from the installation of meters is that information on usage 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 Township or utility has documented metered volume 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 Township'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 utilizes 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 Township 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 Township facing physical limitations in the amount of water which can be supplied to an area. As well, financial constraints can encourage conservation in a Township 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, use water at will, or the customer wants to get his money's worth and hence adopts more liberal usage patterns. The fundamental reason for this is that the price paid for the service bears no direct relationship to the metered volume 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 metered volumes, the consumer can reduce his total costs by restricting usage; however the incentive lessens as more water is utilized, because the marginal cost per unit declines as the consumer enters the next block pricing range. Similarly, those whose metered volume level is at the top end of a block have reduced incentive to reduce usage.

The Constant Rate structure presents the customer with a linear relationship between metered volume and the cost thereof. As the consumer pays a fixed cost per unit, his bill will vary directly with the amount used. 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.

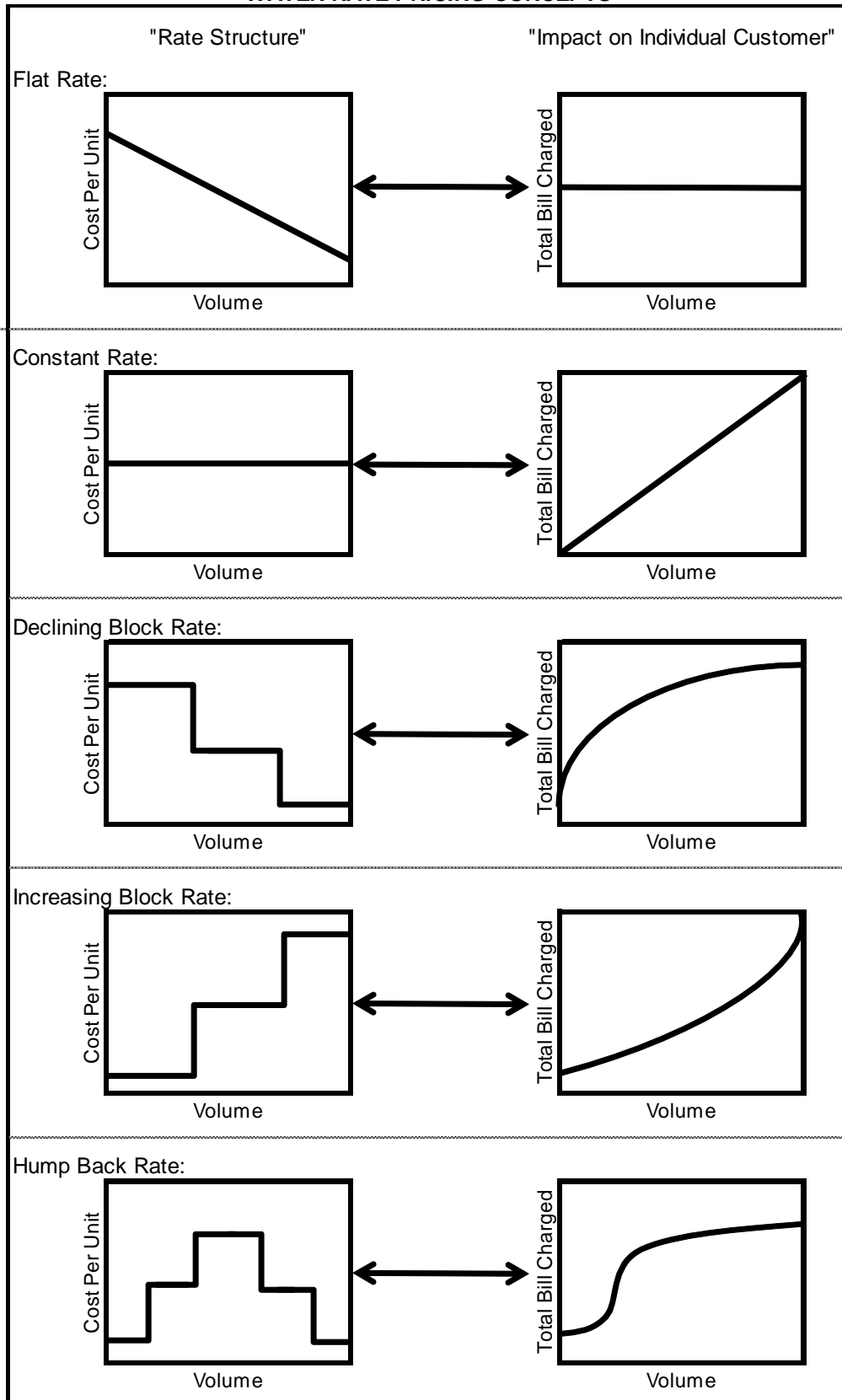
The Inverted Block method presents the most effective pricing method for encouraging conservation. Through this method, the price per unit of metered volume increases as total volumes used grow. The consumer becomes aware of usage volumes through metering with the charges increasing dramatically with 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 utilized. The right-hand side of the figure presents the impact on the customer's bill as the volume of water increases. The schematic is summarized below for each rate structure.

Figure 6-1

WATER RATE PRICING CONCEPTS



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 increase
Increasing Block	Cost per unit increases as threshold targets are achieved	Bill increases at a faster rate as volumes increase
Hump Back Rate	Combination of an increasing block at the lower consumption volumes and then converts to a declining block for the high	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 metered volume. Selection of the quantum of the base charge is a matter of policy selected by individual municipalities.

6.5 Recommended Rate Structures

The Township presently uses a monthly base charge along with a metered volume charge based on water and wastewater volumes except for the customers in the Gazer Mooney area who pay based on a flat rate. The present rate structure is provided below:

2015 - Water Billing Rates		2015 - Wastewater Billing Rates	
Monthly Base Charge		Monthly Base Charge	
Rockwood	4.20	Rockwood	4.20
Hamilton Drive	4.20	Hamilton Drive	n/a
Volume Charge		Volume Charge	
\$ 1.870	Rockwood per m ³	2.64	Rockwood per m ³
\$ 2.370	Hamilton Drive per m ³		
Combined Water & Wastewater			
Annual Flat Rate - Gaser-Mooney Area (lifecycle charge only)			\$235.14

The use of the base charge and the volume rate (presently used) is recommended to be continued for both water and wastewater. This rate encourages conservation and provides incentive to maintain water use at reasonable levels. The flat rate for the Gazer Mooney area is also recommended to be continued.

As noted in Chapter 5 and for use in Chapter 7, Tables 6-1 and 6-2 provide for the calculation of the base charge revenue. The base charges have been increased in 2016 to \$10 per month and has been adjusted annually for inflation in each year thereafter. The number of customers serviced annually are provided in Tables 1-1 and 1-2, including growth in the Rockwood and Hamilton Drive areas.

For water base charges in Rockwood and Hamilton Drive, 75% of the revenue has been attributed to the operating budget and 25% to the capital budget for the years 2016-2021 after which, 50% is attributed to operating and 50% to capital.

Table 6-1
Guelph/Eramosa
Base Charge - Water

Rockwood	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635
New	13	38	65	95	125	155	185	217	251	285	321
Subtotal Customers	1,648	1,673	1,700	1,730	1,760	1,790	1,820	1,852	1,886	1,920	1,956
Monthly Base Charge	4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Annual Base Charge	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Total Annual Revenue	\$83,059	\$200,760	\$208,080	\$215,987	\$224,127	\$232,506	\$241,131	\$250,278	\$259,971	\$269,950	\$280,512

Hamilton Drive	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	216	216	216	216	216	216	216	216	216	216	216
New	0	1	3	5	7	8	8	8	8	8	8
Subtotal Customers	216	217	219	221	223	224	224	224	224	224	224
Monthly Base Charge	4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Annual Base Charge	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Total Annual Revenue	\$10,886	\$26,040	\$26,806	\$27,591	\$28,398	\$29,096	\$29,678	\$30,271	\$30,877	\$31,494	\$32,124

Table 6-2
Guelph/Eramosa
Base Charge - Wastewater

Rockwood	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Existing	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635	1,635
New	13	38	65	95	125	155	185	217	251	285	321
Subtotal Customers	1,648	1,673	1,700	1,730	1,760	1,790	1,820	1,852	1,886	1,920	1,956
Monthly Base Charge	\$4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Annual Base Charge	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Total Annual Revenue	\$83,059	\$200,760	\$208,080	\$215,987	\$224,127	\$232,506	\$241,131	\$250,278	\$259,971	\$269,950	\$280,512

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 lifecycle reserve contributions will be the predominant basis for financing future capital replacement. Chapter 5 established the 10-year operating forecast of expenditures. Non-rate revenues to assist in offsetting the charges for volumetric rates were also identified in Chapter 5 and the base charge revenues were provided in Chapter 6. This chapter will provide for the calculation of the volume rates (and flat rates for Gazer Mooney) 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 usage forecast and wastewater volumes provided in Section 1.7.

7.2 Water Rates (Combined Operating for Rockwood and Hamilton Drive)

Based on the discussion of rate structures provided in section 6.5 and the recommendation to continue with the present structure for water, the combined water service volume rates for Hamilton Drive and Rockwood are calculated in Table 7-1. Table 7-1 takes the net recoverable amounts from Table 5-1 (the product of total expenditures) and completes the calculation by dividing by the metered volume into the net expenditures to calculate the volume rates. Detailed calculations are provided in Appendix G.

7.3 Water Rates (Hamilton Drive Capital)

Table 7-2 provides for the Hamilton Drive capital water rate forecast. It is noted that discussions were undertaken with staff regarding the potential rates. Detailed calculations are provided in Appendix F.

A summary of the recommended rates for Hamilton Drive are as follows:

Water Rate Summary - Hamilton Drive
Average Customer Water Bill - Based on 240 m³ of usage and ½" or ¾" meter

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Monthly Base Rate	4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Capital Water Volume Rate/m ³	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.09	\$0.08	\$0.08	\$0.08	\$0.08
Lifecycle Capital Water Volume Rate/m ³	\$0.61	\$0.67	\$0.75	\$0.83	\$0.93	\$1.03	\$1.14	\$1.17	\$1.19	\$1.22	\$1.25
Operating Water Volume Rate/m ³	\$1.68	\$1.80	\$1.92	\$2.06	\$2.20	\$2.31	\$2.43	\$2.55	\$2.68	\$2.81	\$2.95
Total Volume Rate	\$2.37	\$2.56	\$2.76	\$2.98	\$3.21	\$3.42	\$3.65	\$3.80	\$3.95	\$4.11	\$4.27
Annual Base Rate Bill	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Annual Metered Volume	240	240	240	240	240	240	240	240	240	240	240
Annual Metered Volume Bill	\$568.82	\$613.61	\$662.02	\$714.36	\$770.98	\$821.64	\$876.05	\$911.04	\$947.62	\$985.82	\$1,025.76
Total Annual Bill	\$619.22	\$733.61	\$784.42	\$839.21	\$898.32	\$951.53	\$1,008.54	\$1,046.18	\$1,085.46	\$1,126.42	\$1,169.17
Total Average Monthly Bill	\$51.60	\$61.13	\$65.37	\$69.93	\$74.86	\$79.29	\$84.04	\$87.18	\$90.45	\$93.87	\$97.43
\$ Monthly Increase - Base Rate		\$5.80	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.22	\$0.23	\$0.23	\$0.23
\$ Monthly Increase - Metered Volume Rate		\$3.73	\$4.03	\$4.36	\$4.72	\$4.22	\$4.53	\$2.92	\$3.05	\$3.18	\$3.33
\$ Monthly Increase - Total Monthly Bill		\$9.53	\$4.23	\$4.57	\$4.93	\$4.43	\$4.75	\$3.14	\$3.27	\$3.41	\$3.56

Hamilton Drive Monthly Water Bill

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Monthly Base Rate	\$4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Constant Metered Volume Rate	\$47.40	\$51.13	\$55.17	\$59.53	\$64.25	\$68.47	\$73.00	\$75.92	\$78.97	\$82.15	\$85.48
Total Annual Bill	\$51.60	\$61.13	\$65.37	\$69.93	\$74.86	\$79.29	\$84.04	\$87.18	\$90.45	\$93.87	\$97.43

7.4 Water Rates (Rockwood Capital)

Table 7-3 provides for the Rockwood capital water rate forecast. It is noted that discussions were undertaken with staff regarding the potential rates. Detailed calculations are provided in Appendix E. A summary of the recommended rates are as follows:

Water Rate Summary - Rockwood
Average Customer Water Bill - Based on 190 m³ of usage and ½" or ¾" meter

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Monthly Base Rate	\$4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Capital Water Volume Rate/m ³	\$0.07	\$0.19	\$0.19	\$0.20	\$0.20	\$0.20	\$0.15	\$0.13	\$0.13	\$0.13	\$0.13
Lifecycle Capital Water Volume Rate/m ³	\$0.12	\$0.00	\$0.00	\$0.00	\$0.00	\$0.01	\$0.06	\$0.09	\$0.10	\$0.10	\$0.11
Operating Water Volume Rate/m ³	\$1.68	\$1.80	\$1.92	\$2.06	\$2.20	\$2.31	\$2.43	\$2.55	\$2.68	\$2.81	\$2.95
Total Volume Rate	\$1.87	\$1.99	\$2.12	\$2.26	\$2.41	\$2.52	\$2.64	\$2.77	\$2.90	\$3.04	\$3.18
Annual Base Rate Bill	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Annual Metered Volume	190	190	190	190	190	190	190	190	190	190	190
Annual Metered Volume Bill	\$355.32	\$378.39	\$403.03	\$429.36	\$457.50	\$479.20	\$501.96	\$525.84	\$550.91	\$577.18	\$604.73
Total Annual Bill	\$405.72	\$498.39	\$525.43	\$554.21	\$584.85	\$609.09	\$634.45	\$660.98	\$688.75	\$717.78	\$748.14
Total Average Monthly Bill	\$33.81	\$41.53	\$43.79	\$46.18	\$48.74	\$50.76	\$52.87	\$55.08	\$57.40	\$59.82	\$62.35
\$ Monthly Increase - Base Rate		\$5.80	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.22	\$0.23	\$0.23	\$0.23
\$ Monthly Increase - Metered Volume Rate		\$1.92	\$2.05	\$2.19	\$2.34	\$1.81	\$1.90	\$1.99	\$2.09	\$2.19	\$2.30
\$ Monthly Increase - Total Monthly Bill		\$7.72	\$2.25	\$2.40	\$2.55	\$2.02	\$2.11	\$2.21	\$2.31	\$2.42	\$2.53

7.5 Wastewater Rates (Rockwood)

The recommendation for wastewater rates is to include a base charge and continue with the volume rate. The volume rate for wastewater is calculated in Table 7-4. The Table takes the net recoverable amounts from Table 5-2 (the product of total expenditures plus lifecycle cost less the non-rate revenues) and completes the calculation by dividing by the metered volume into the net expenditures to calculate the constant rate. Detailed

calculations are provided in Appendix I. A summary of the recommended rates are as follows:

Rockwood Wastewater Rate Summary
Average Customer Wastewater Bill - Based on 190 m³ of usage and 5/8" or 3/4" meter

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Monthly Base Rate	\$4.20	\$10.00	\$10.20	\$10.40	\$10.61	\$10.82	\$11.04	\$11.26	\$11.49	\$11.72	\$11.95
Constant Metered Volume Rate	\$2.64	\$2.80	\$2.94	\$3.09	\$3.24	\$3.40	\$3.54	\$3.68	\$3.75	\$3.83	\$3.90
Annual Base Rate Bill	\$50.40	\$120.00	\$122.40	\$124.85	\$127.34	\$129.89	\$132.49	\$135.14	\$137.84	\$140.60	\$143.41
Annual Metered Volume	190	190	190	190	190	190	190	190	190	190	190
Annual Metered Volume Bill	\$501.60	\$531.70	\$558.28	\$586.19	\$615.51	\$646.29	\$672.14	\$699.03	\$713.01	\$727.28	\$741.84
Total Annual Bill	\$552.00	\$651.70	\$680.68	\$711.04	\$742.85	\$776.18	\$804.63	\$834.17	\$850.86	\$867.88	\$885.25
Total Average Monthly Bill	\$46.00	\$54.31	\$56.72	\$59.25	\$61.90	\$64.68	\$67.05	\$69.51	\$70.90	\$72.32	\$73.77
\$ Monthly Increase - Base Rate		\$5.80	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.22	\$0.23	\$0.23	\$0.23
\$ Monthly Increase - Metered Volume Rate		\$2.51	\$2.22	\$2.33	\$2.44	\$2.57	\$2.15	\$2.24	\$1.17	\$1.19	\$1.21
\$ Monthly Increase - Total Monthly Bill		\$8.31	\$2.42	\$2.53	\$2.65	\$2.78	\$2.37	\$2.46	\$1.39	\$1.42	\$1.45

7.6 Gazer-Mooney Area

Limited discussion has been provided herein for the Gazer-Mooney area. As this area is serviced directly by the City of Guelph (including billings), they do not form part of the rate structure discussed above. However, the agreement with Guelph requires the Township to maintain the system infrastructure. Presently the area is charged an area flat rate to recovery any annual maintenance provided which is calculated in Table 7-5. The rate forecast for Gazer Mooney is shown below (detailed calculations are provided in Appendix H):

Gazer Mooney Annual Water & Wastewater Bill

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Annual Bill	235.14	251.60	\$269.21	\$288.05	\$308.21	\$329.78	\$342.97	\$356.69	\$367.39	\$378.41	\$389.76
\$ Increase - Flat Charge		\$16.46	\$17.61	\$18.84	\$20.16	\$21.57	\$13.19	\$13.72	\$10.70	\$11.02	\$11.35

Gazer Mooney Monthly Water and Wastewater Bill

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Monthly Bill	19.60	\$20.97	\$22.43	\$24.00	\$25.68	\$27.48	\$28.58	\$29.72	\$30.62	\$31.53	\$32.48
\$ Increase - Flat Charge		\$1.37	\$1.47	\$1.57	\$1.68	\$1.80	\$1.10	\$1.14	\$0.89	\$0.92	\$0.95

Table 7-1
Guelph/Eramosa
Water Services
Rockwood and Hamilton Drive (Combined) Water Volume Rate Forecast - Operating
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	624,383	677,062	735,233	799,401	868,982	926,162	986,303	1,051,120	1,120,982	1,195,171	1,278,644
Total Metered Volume (m ³)	371,637	376,627	382,237	388,417	394,597	400,537	406,237	412,317	418,777	425,237	433,277
Constant Metered Volume Rate	1.68	1.80	1.92	2.06	2.20	2.31	2.43	2.55	2.68	2.81	2.95
Annual Percentage Change		7%	7%	7%	7%	5%	5%	5%	5%	5%	5%

Table 7-2
Guelph/Eramosa
Water Services
Hamilton Drive Capital - Water Volume Rate Forecast
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	34,980	38,660	42,927	47,661	52,910	58,467	64,313	65,596	66,907	68,243	71,193
Total Hamilton Drive Metered Volume (m ³)	50,696	50,936	51,416	51,896	52,376	52,616	52,616	52,616	52,616	52,616	53,816
Constant Metered Volume Rate	0.69	0.76	0.83	0.92	1.01	1.11	1.22	1.25	1.27	1.30	1.32
Annual Percentage Change		10%	10%	10%	10%	10%	10%	2%	2%	2%	2%

Table 7-3
Guelph/Eramosa
Water Service
Water Volume Rate Forecast - Rockwood
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	60,979	63,119	65,403	67,876	70,395	72,994	75,675	78,523	81,544	84,659	87,921
Total Rockwood Metered Volume (m ³)	320,941	325,691	330,821	336,521	342,221	347,921	353,621	359,701	366,161	372,621	379,461
Constant Metered Volume Rate	0.19	0.19	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.23	0.23
Annual Percentage Change		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

Table 7-4
Guelph/Eramosa
Rockwood Wastewater Service
Wastewater Volume Rate Forecast
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Wastewater Billing Recovery	847,284	911,414	972,051	1,038,235	1,108,625	1,183,453	1,250,970	1,323,376	1,374,092	1,426,319	1,467,473
Total Metered Volume (m ³)	320,941	325,691	330,821	336,521	342,221	347,921	353,621	359,701	366,161	372,621	375,851
Constant Metered Volume Rate	2.64	2.80	2.94	3.09	3.24	3.40	3.54	3.68	3.75	3.83	3.90
Annual Percentage Change		6%	5%	5%	5%	5%	4%	4%	2%	2%	2%

8. Recommendations

As presented within this report, capital and operating expenditures have been identified and forecasted over a ten-year period for water and wastewater services. In addition, a long-term lifecycle plan has been provided consistent with the principles provided in S.W.S.S.A. and the Water Opportunities Act.

Based upon the foregoing, the following recommendations are identified for consideration by Municipal Council:

1. That Council consider the Capital Plan for water and wastewater as provided in Tables 2-1 through 2-4 and the associated Capital Financing Plan as set out in Tables 4-1 through 4-4.
2. That Council approve the adoption of lifecycle reserve contributions for the replacement of water and wastewater infrastructure, subject to the requirements of Ontario Regulation 453/07.
3. That Council consider the rates provided in Chapter 7 for the water and wastewater systems.

The 2015 rates, as passed by Council will remain in effect until December 31, 2015 and the new rates will be effective January 1, 2016.

Appendix A – Rockwood Water System Inventory Data

**Appendix A-1
Guelph/Eramosa
Rockwood Water Facilities**

<i>Item</i>	<i>Info</i>	<i>Asset ID</i>	<i>In-Service Date</i>	<i>Year Installed</i>	<i>Estimated Life</i>	<i>Historical Cost</i>	<i>Replacement Year</i>	<i>Replacement Cost (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
STATION STREET PUMPHOUSE											
- Station Street Well #1 and Well #2		1534	1976		75	129,516	2051	460,000	36	18,047	-
- Well Pumps			1976		15		2015	20,000	0	in capital budget	20,000
- Well Piping			1976		25		2015	20,000	0	in capital budget	20,000
- Station Street Pumphouse		1535	1976			246,080					
- Building			1976		100		2076	400,000	61	11,409	-
- Roof			2006		20		2026	15,000	11	1,533	-
- Pumps			2006		15		2021	15,000	6	in capital budget	15,000
- Treatment and Process Piping			2006		25		2031	82,000	16	6,039	-
- UV Disinfection			2006		12		2018	120,000	3	in capital budget	120,000
- Electrical Power and Generator			2006		25		2031	200,000	16	14,730	-
- Instrumentation and Controls			2006		20		2026	100,000	11	10,218	-
BERNARDI PUMPHOUSE											
- Bernardi Well #3		1536				152,209					
- Well #3			2004	2004	50		2054	190,000	39	7,063	-
- Well Pumps			2004	2004	15		2019	11,000	4	in capital budget	11,000
- Well Piping			2004	2004	19		2023	6,000	8	in capital budget	6,000
- Bernardi Pumphouse		1537				399,518					
- Building			2004	2004	100		2104	240,000	89	5,794	-
- Roof			2004	2004	17		2021	30,000	6	in capital budget	30,000
- Pumps			2004	2004	17		2021	10,000	6	in capital budget	10,000
- Pumps			2004	2004	22		2026	13,000	11	1,328	-
- Treatment and Process Piping			2004	2004	25		2029	75,000	14	6,195	-
- Electrical Power and Generator			2004	2004	25		2029	150,000	14	12,390	-
- Instrumentation and Controls			2004	2004	20		2024	40,000	9	in capital budget	40,000
STANDPIPE AND BOOSTER PUMPING STATION											
- Booster Pumping Station		1538				925,233					
- Building			2008	2008	100		2108	629,000	93	14,950	-
- Roof			2008	2008	15		2023	20,000	8	in capital budget	20,000
- Pumps			2008	2008	12		2020	20,000	5	in capital budget	20,000
- Chemical Feed			2008	2008	15		2023	55,000	8	in capital budget	55,000
- Controls			2008	2008	15		2023	105,000	8	in capital budget	105,000
- Electrical Power and Generator			2008	2008	25		2033	170,000	18	11,339	-
- Yard Piping		2008	2008	75		2083	65,000	68	1,757	-	
- Standpipe		1539	2008	2008	25	1,082,467	2033	1,245,000	18	83,044	-
SCADA system RPU & HMI upgrades	(50% cost to Rockwood - 50% to Hamilton Drive)	1540		2009	5	12,957	2015	14,150	0	in capital budget	14,150
Total						2,947,980		4,520,150		205,838	486,150

Appendix A-2
Guelph/Eramosa
Water Meter Inventory - Rockwood

<i>Asset ID</i>	<i>Number of Meters</i>	<i>Year Installed</i>	<i>Historical Cost (per Unit)</i>	<i>Historical Cost</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost Per Unit (2015\$)</i>	<i>Replacement Cost (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
1993	66	1985	36.53	2,410.98	30	2015	180	11,880	0	replacement due	11,880
1994	70	1986	38.80	2,716.00	30	2016	180	12,600	1	replacement due	12,600
1995	70	1987	43.10	3,017.00	30	2017	180	12,600	2	replacement due	12,600
1996	70	1988	46.47	3,252.90	30	2018	180	12,600	3	replacement due	12,600
1997	42	1989	49.51	2,079.42	30	2019	180	7,560	4	replacement due	7,560
1998	62	1990	50.76	3,147.12	30	2020	180	11,160	5	replacement due	11,160
1999	62	1991	48.55	3,010.10	30	2021	180	11,160	6	replacement due	11,160
2000	59	1992	48.30	2,849.70	30	2022	180	10,620	7	replacement due	10,620
2001	67	1993	48.62	3,257.54	30	2023	180	12,060	8	replacement due	12,060
2002	70	1994	49.90	3,493.00	30	2024	180	12,600	9	replacement due	12,600
2003	70	1995	51.45	3,601.50	30	2025	180	12,600	10	replacement due	12,600
2004	70	1996	52.43	3,670.10	30	2026	180	12,600	11	1,287	-
2005	70	1997	53.53	3,747.10	30	2027	180	12,600	12	1,191	-
2006	70	1998	54.52	3,816.40	30	2028	180	12,600	13	1,110	-
2007	70	1999	55.84	3,908.80	30	2029	180	12,600	14	1,041	-
2008	70	2000	60.16	4,211.20	30	2030	180	12,600	15	981	-
2009	70	2001	62.82	4,397.40	30	2031	180	12,600	16	928	-
2010	70	2002	63.93	4,475.10	30	2032	180	12,600	17	882	-
2011	70	2003	66.30	4,641.00	30	2033	180	12,600	18	840	-
2012	70	2004	70.66	4,946.20	30	2034	180	12,600	19	804	-
2013	70	2005	74.40	5,208.00	30	2035	180	12,600	20	771	-
2014	70	2006	79.39	5,557.30	30	2036	180	12,600	21	741	-
2015	70	2007	84.74	5,931.80	30	2037	180	12,600	22	714	-
2016	70	2008	92.85	6,499.50	30	2038	180	12,600	23	689	-
	32	2009	93.74	2,999.57	30	2039	180	5,760	24	305	-
	32	2010	102.41	3,277.25	30	2040	180	5,760	25	295	-
	6	2011	111.97	671.84	30	2041	180	1,080	26	54	-
	7	2012	117.61	823.30	30	2042	180	1,260	27	61	-
	12	2013	120.89	1,450.65	30	2043	180	2,160	28	101	-
	44	2014	123.76	5,445.54	30	2044	180	7,920	29	363	-
	98	2014	123.76	12,128.71	30	2044	180	17,640	29	808	-
Total	1,849			120,642				332,820		13,964	127,440

Appendix A-3
Guelph/Eramosa
Rockwood Water Hydrants

<i>Asset ID</i>	<i>Number of Hydrants</i>	<i>Year Installed</i>	<i>Historical Cost per Unit</i>	<i>Total Historical Cost</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost Per Unit (2015\$)</i>	<i>Replacement Cost (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
1957-1991	53	1975	777	41,200	50	2025	3,800	201,400	10	replacement due	201,400
	10	1985	1,377	13,770	50	2035	3,800	38,000	20	2,324	-
	3	1987	1,625	4,874	50	2037	3,800	11,400	22	646	-
	6	1989	1,866	11,199	50	2039	3,800	22,800	24	1,205	-
	10	1990	1,913	19,134	50	2040	3,800	38,000	25	1,946	-
	7	1992	1,821	12,744	50	2042	3,800	26,600	27	1,285	-
	3	1998	2,055	6,165	50	2048	3,800	11,400	33	475	-
	9	1999	2,105	18,946	50	2049	3,800	34,200	34	1,396	-
	5	2001	2,368	11,840	50	2051	3,800	19,000	36	745	-
	6	2003	2,499	14,995	50	2053	3,800	22,800	38	862	-
	17	2004	2,664	45,282	50	2054	3,800	64,600	39	2,401	-
	13	2006	2,993	38,904	50	2056	3,800	49,400	41	1,777	-
	2	2007	3,194	6,389	50	2057	3,800	7,600	42	269	-
	4	2009	3,500	14,000	50	2059	3,800	15,200	44	523	-
	4	2010	3,824	15,296	50	2060	3,800	15,200	45	515	-
	4	2011	4,178	16,712	50	2061	4,200	16,800	46	562	-
	4	2012	4,565	18,260	50	2062	4,600	18,400	47	608	-
4	2013	4,988	19,952	50	2063	5,000	20,000	48	652	-	
4	2014	5,450	21,800	50	2064	5,400	21,600	49	696	-	
Total	168		53,762					654,400		18,888	201,400

Appendix A-4
Guelph/Eramosa
Rockwood Watermains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2015\$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Mackenzie Street	1227	158	150	PVC	11,931	1975	60	2035	58,690	20	3,589	-
Gzowski Street	1228	98	200	PVC	7,400	1975	60	2035	33,650	20	2,058	-
Brady Street	1229	159	150	PVC	12,007	1975	60	2035	54,600	20	3,339	-
Christie Street	1230	100	150	PVC	7,551	1975	60	2035	34,340	20	2,100	-
Queen Street	1231	186	150	PVC	14,046	1975	60	2035	63,870	20	3,906	-
Jackson Street	1232	99	150	PVC	7,476	1975	60	2035	34,000	20	2,079	-
Brady Street	1233	181	150	PVC	13,668	1975	60	2035	62,160	20	3,802	-
Jackson Street	1234	98	150	PVC	7,400	1975	60	2035	33,650	20	2,058	-
Frederick Street	1235	185	150	PVC	13,970	1975	60	2035	63,530	20	3,885	-
Jackson Street	1236	98	150	PVC	7,400	1975	60	2035	33,650	20	2,058	-
Main Street	1237	186	250	PVC2	48,128	2004	85	2089	63,870	74	1,661	-
Christie Street	1238	98	150	PVC	7,400	1975	60	2035	33,650	20	2,058	-
Main Street	1239	157	200	PVC	11,856	1975	60	2035	53,910	20	3,297	-
Gzowski Street	1240	99	200	PVC	7,476	1975	60	2035	34,000	20	2,079	-
Main Street	1241	18	250	PVC	1,359	1975	60	2035	6,180	20	378	-
Main Street	1242	208	150	PVC	15,707	1975	60	2035	71,430	20	4,368	-
Main Street	1243	134	250	PVC	10,119	1975	60	2035	46,020	20	2,814	-
Division Street	1244	104	150	PVC	7,854	1975	60	2035	35,710	20	2,184	-
Main Street	1245	90	250	PVC	6,796	1975	60	2035	30,910	20	1,890	-
Main Street	1246	108	250	PVC2	27,946	2004	85	2089	37,090	74	965	-
Division Street	1247	167	150	PVC	12,611	1975	60	2035	57,350	20	3,507	-
Main Street	1248	103	250	PVC	7,778	1975	60	2035	35,370	20	2,163	-
Inkerman Street	1249	101	150	PVC	7,627	1975	60	2035	34,680	20	2,121	-
Passmore Street	1250	93	150	PVC	7,023	1975	60	2035	31,940	20	1,953	-
Mary Street	1251	163	200	PVC	12,309	1975	60	2035	55,970	20	3,423	-
Passmore Street	1252	102	150	PVC	7,702	1975	60	2035	35,030	20	2,142	-
Balaclava Street	1253	163	150	PVC	12,309	1975	60	2035	55,970	20	3,423	-
Mary Street	1254	203	150	PVC	15,329	1975	60	2035	69,710	20	4,263	-
Alma Street	1255	187	150	PVC	14,121	1975	60	2035	64,220	20	3,927	-
Main Street	1256	151	200	PVC	11,403	1975	60	2035	51,850	20	3,171	-
Main Street	1257	201	250	PVC	15,178	1975	60	2035	69,020	20	4,221	-
George Street	1258	116	150	PVC	8,760	1975	60	2035	39,830	20	2,436	-
George Street	1259	5	250	PVC2	1,294	2004	85	2089	1,720	74	45	-
Main Street	1260	118	250	PVC	8,911	1975	60	2035	40,520	20	2,478	-
Harris Street	1261	89	200	PVC	6,721	1975	43	2018	30,560	3	in capital budget	30,560
Main Street	1262	100	250	PVC	7,551	1975	60	2035	34,340	20	2,100	-
Carrol Street	1263	103	150	PVC	7,778	1975	60	2035	35,370	20	2,163	-
Weatherald Street	1264	212	150	PVC	16,009	1975	60	2035	72,800	20	4,452	-
Frederick Street	1265	104	150	PVC	7,854	1975	60	2035	35,710	20	2,184	-

Appendix A-4 (Cont.)
Guelph/Eramosa
Rockwood Watermains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2015\$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Main Street	1266	111	200	PVC	8,382	1975	60	2035	38,120	20	2,331	-
Main Street	1267	89	250	PVC	6,721	1975	60	2035	30,560	20	1,869	-
Main Street	1268	54	250	PVC	4,078	1975	60	2035	18,540	20	1,134	-
Station Street	1269	111	200	PVC	8,382	1975	60	2035	38,120	20	2,331	-
Catherine	1270	36	200	PVC	2,719	1975	60	2035	12,360	20	756	-
Catherine	1271	140	150	PVC	10,572	1975	60	2035	48,080	20	2,940	-
Passmore Street	1272	100	150	PVC	7,551	1975	60	2035	34,340	20	2,100	-
Mackenzie Street	1273	56	150	PVC	4,229	1975	60	2035	19,230	20	1,176	-
Dennis Street	1274	138	150	PVC	10,421	1975	60	2035	47,390	20	2,898	-
Gowan Street	1275	92	150	PVC	6,947	1975	60	2035	31,590	20	1,932	-
Dowler Street	1276	112	150	PVC	8,458	1975	60	2035	38,460	20	2,352	-
Main Street	1277	123	250	PVC	9,288	1975	60	2035	42,240	20	2,583	-
Main Street	1278	180	250	PVC	13,593	1975	60	2035	61,810	20	3,780	-
Valley Road	1279	62	250	PVC	4,682	1975	60	2035	21,290	20	1,302	-
Main Street	1280	88	250	PVC	6,645	1975	60	2035	30,220	20	1,848	-
Spring Street	1281	51	150	PVC	3,851	1975	60	2035	17,510	20	1,071	-
Pine Street	1282	144	150	PVC	10,874	1975	60	2035	49,450	20	3,024	-
Harris Street	1283	174	150	PVC	13,140	1975	43	2018	59,750	3	in capital budget	59,750
Harris Street	1284	181	150	PVC	13,668	1975	43	2018	62,160	3	in capital budget	62,160
Harris Street	1285	139	200	PVC	10,497	1975	43	2018	47,730	3	in capital budget	47,730
Harris Street	1286	130	200	PVC	9,817	1975	43	2018	44,640	3	in capital budget	44,640
Carrol Street	1287	104	150	PVC	7,854	1975	60	2035	35,710	20	2,184	-
Main Street	1288	47	200	PVC	3,549	1975	60	2035	16,140	20	987	-
Guelph Street	1289	153	200	PVC	11,554	1975	60	2035	52,540	20	3,213	-
Guelph Street	1290	79	200	PVC	5,966	1975	60	2035	27,130	20	1,659	-
Guelph Street	1291	68	200	PVC	5,135	1975	60	2035	23,350	20	1,428	-
Balaclava Street	1292	152	150	PVC	11,478	1975	60	2035	52,200	20	3,192	-
Richardson Street	1293	25	150	PVC	1,888	1975	60	2035	8,590	20	525	-
Alma Street	1294	160	150	PVC	12,082	1975	60	2035	54,940	20	3,360	-
Alma Street	1295	83	150	PVC	6,268	1975	60	2035	28,500	20	1,743	-
Alma Street	1296	240	150	PVC	18,124	1975	60	2035	82,420	20	5,041	-
Milne Place	1297	82	150	PVC	6,192	1975	60	2035	28,160	20	1,722	-
Milne Place	1298	114	150	PVC	8,609	1975	60	2035	39,150	20	2,394	-
Clara Street	1299	70	150	PVC	5,286	1975	60	2035	24,040	20	1,470	-
Henry Street	1300	111	150	PVC2	14,848	1985	85	2070	38,120	55	1,149	-
Frederick Street	1301	101	150	PVC2	13,510	1985	85	2070	34,680	55	1,045	-
Henry Street	1302	147	150	PVC2	19,663	1985	85	2070	50,480	55	1,522	-
Henry Street	1303	105	150	PVC2	14,045	1985	85	2070	36,060	55	1,087	-
Henry Street	1304	272	150	PVC2	36,384	1985	85	2070	93,400	55	2,815	-
Henry Street	1305	102	150	PVC2	13,644	1985	85	2070	35,030	55	1,056	-

Appendix A-4 (Cont.)
Guelph/Eramosa
Rockwood Watermains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2015\$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Parkedge Street	1306	95	150	PVC2	14,994	1987	85	2072	32,620	57	964	-
Parkedge Street	1307	87	150	PVC2	13,731	1987	85	2072	29,880	57	883	-
Parkedge Street	1308	165	150	PVC2	26,042	1987	85	2072	56,660	57	1,675	-
Parkedge Street	1309	91	150	PVC2	14,363	1987	85	2072	31,250	57	924	-
Lou'S Blvd.	1310	105	150	PVC2	19,038	1989	85	2074	36,060	59	1,047	-
Lou'S Blvd.	1311	149	150	PVC2	27,015	1989	85	2074	51,170	59	1,485	-
Lou'S Blvd.	1312	101	150	PVC2	18,312	1989	85	2074	34,680	59	1,006	-
Lou Hill'S Cres.	1313	60	150	PVC2	10,879	1989	85	2074	20,600	59	598	-
Lou'S Blvd.	1314	118	150	PVC2	21,395	1989	85	2074	40,520	59	1,176	-
Lou'S Blvd.	1315	98	150	PVC2	17,768	1989	85	2074	33,650	59	977	-
Lou'S Blvd.	1316	182	150	PVC2	32,998	1989	85	2074	62,500	59	1,814	-
Lou'S Blvd.	1317	204	150	PVC2	36,987	1989	85	2074	70,050	59	2,033	-
Queen Street	1318	160	150	PVC2	29,739	1990	85	2075	54,940	60	1,581	-
Gzowski Street	1319	100	200	PVC2	18,587	1990	85	2075	34,340	60	988	-
Christie Street	1320	104	150	PVC2	19,330	1990	85	2075	35,710	60	1,027	-
Landrex Street	1321	194	150	PVC2	36,058	1990	85	2075	66,620	60	1,917	-
Christie Street	1322	106	150	PVC2	19,702	1990	85	2075	36,400	60	1,047	-
Christie Street	1323	108	150	PVC2	20,074	1990	85	2075	37,090	60	1,067	-
Christie Street	1324	96	150	PVC2	17,843	1990	85	2075	32,970	60	948	-
Christie Street	1325	87	150	PVC2	16,171	1990	85	2075	29,880	60	860	-
Christie Street	1326	118	150	PVC2	21,932	1990	85	2075	40,520	60	1,166	-
Gzowski Street	1327	101	150	PVC2	18,773	1990	85	2075	34,680	60	998	-
Princess Street	1328	169	150	PVC2	31,412	1990	85	2075	58,030	60	1,669	-
Princess Street	1329	181	150	PVC2	33,642	1990	85	2075	62,160	60	1,788	-
Jackson Street	1330	103	150	PVC2	19,144	1990	85	2075	35,370	60	1,018	-
Cobblestone Place	1331	285	150	PVC2	83,015	1992	85	2077	161,200	62	4,560	-
Cobblestone Place	1332	137	150	PVC2	39,905	1992	85	2077	77,490	62	2,192	-
Cobblestone Place	1333	181	150	PVC2	52,722	1992	85	2077	102,370	62	2,896	-
Cobblestone Place	1334	165	150	PVC2	48,061	1992	85	2077	93,320	62	2,640	-
Cobblestone Place	1335	189	150	PVC2	55,052	1992	85	2077	106,900	62	3,024	-
May Street	1336	92	150	PVC2	30,252	1998	85	2083	52,040	68	1,407	-
John Street	1337	281	150	PVC2	92,399	1998	85	2083	158,930	68	4,296	-
Maclennan Street	1338	99	150	PVC2	32,553	1998	85	2083	55,990	68	1,514	-
Maclennan Street	1339	180	150	PVC2	59,188	1998	85	2083	101,810	68	2,752	-
May Street	1340	118	150	PVC2	38,801	1998	85	2083	66,740	68	1,804	-
Bernardi Crescent	1341	149	150	PVC2	48,994	1998	85	2083	84,270	68	2,278	-
Bernardi Crescent	1342	121	150	PVC2	39,787	1998	85	2083	68,440	68	1,850	-
Bernardi Crescent	1343	101	150	PVC2	33,211	1998	85	2083	57,130	68	1,544	-
Riverwalk Place	1344	43	150	PVC2	14,483	1999	85	2084	24,320	69	653	-
Riverwalk Place	1345	13	150	PVC2	4,379	1999	85	2084	7,350	69	197	-

**Appendix A-4 (Cont.)
Guelph/Eramosa
Rockwood Watermains**

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2015\$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Riverwalk Place	1346	40	150	PVC2	13,473	1999	85	2084	22,620	69	607	-
Riverwalk Place	1347	32	150	PVC2	10,778	1999	85	2084	18,100	69	486	-
Riverwalk Place	1348	13	150	PVC2	4,379	1999	85	2084	7,350	69	197	-
Riverwalk Place	1349	16	150	PVC2	5,389	1999	85	2084	9,050	69	243	-
Riverwalk Place	1350	67	150	PVC2	22,567	1999	85	2084	37,900	69	1,017	-
Riverwalk Place	1351	9	150	PVC2	3,031	1999	85	2084	5,090	69	137	-
Riverwalk Place	1352	9	150	PVC2	3,031	1999	85	2084	5,090	69	137	-
Riverwalk Place	1353	56	150	PVC2	18,862	1999	85	2084	31,670	69	850	-
Riverwalk Place	1354	24	150	PVC2	8,084	1999	85	2084	13,570	69	364	-
Riverwalk Place	1355	30	150	PVC2	9,936	1999	85	2084	16,690	69	448	-
Riverwalk Place	1356	25	150	PVC2	8,420	1999	85	2084	14,140	69	380	-
Riverwalk Place	1357	41	150	PVC2	13,809	1999	85	2084	23,190	69	623	-
Main Street	1358	244	150	PVC2	82,183	1999	85	2084	138,010	69	3,705	-
Ridge Road	1359	77	200	PVC2	25,935	1999	85	2084	43,550	69	1,169	-
Ridge Road	1360	24	150	PVC2	8,084	1999	85	2084	13,570	69	364	-
Ridge Road	1361	137	150	PVC2	46,143	1999	85	2084	77,490	69	2,080	-
Ridge Road	1362	35	150	PVC2	11,788	1999	85	2084	19,800	69	532	-
Dunbar Street	1363	35	150	PVC2	11,788	1999	85	2084	19,800	69	532	-
Dunbar Street	1364	92	150	PVC2	30,987	1999	85	2084	52,040	69	1,397	-
Dunbar Street	1365	26	150	PVC2	8,757	1999	85	2084	14,710	69	395	-
Academy Place	1366	112	150	PVC2	37,723	1999	85	2084	63,350	69	1,701	-
Jolliffe Avenue	1367	45	200	PVC2	15,157	1999	85	2084	25,450	69	683	-
Jolliffe Avenue	1368	107	200	PVC2	36,039	1999	85	2084	60,520	69	1,625	-
Jolliffe Avenue	1369	169	200	PVC2	56,922	1999	85	2084	95,590	69	2,566	-
Parkview Lane	1370	45	150	PVC2	15,157	1999	85	2084	25,450	69	683	-
Parkview Lane	1371	166	150	PVC2	55,911	1999	85	2084	93,890	69	2,521	-
Dunbar Street	1372	61	200	PVC2	20,546	1999	85	2084	34,500	69	926	-
Main Street	1373	120	150	PVC2	40,418	1999	85	2084	67,870	69	1,822	-
Ridge Road	1374	92	150	PVC2	30,987	1999	85	2084	52,040	69	1,397	-
Ridge Road	1375	96	150	PVC2	32,334	1999	85	2084	54,300	69	1,458	-
Ridge Road	1376	117	150	PVC2	39,407	1999	85	2084	66,180	69	1,777	-
Ridge Road	1377	136	150	PVC2	45,807	1999	85	2084	76,920	69	2,065	-
Ridge Road	1378	35	150	PVC2	11,788	1999	85	2084	19,800	69	532	-
Ridge Road	1379	95	150	PVC2	31,997	1999	85	2084	53,730	69	1,442	-
Dundar Street	1380	240	150	PVC2	90,930	2001	85	2086	135,740	71	3,596	-
Dundar Street	1381	110	150	PVC2	43,985	2003	85	2088	62,220	73	1,628	-
Ridge Road	1382	220	150	PVC2	83,353	2001	85	2086	124,430	71	3,297	-
Ridge Road	1383	245	150	PVC2	97,967	2003	85	2088	138,570	73	3,626	-
Ridge Road	1384	137	150	PVC2	58,387	2004	85	2089	77,490	74	2,015	-
Old Maple Boulevard	1385	183	150	PVC2	69,334	2001	85	2086	103,500	71	2,742	-
Old Maple Boulevard	1386	234	150	PVC2	93,369	2003	85	2088	132,070	73	3,456	-

Appendix A-4 (Cont.)
Guelph/Eramosa
Rockwood Watermains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2015\$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Scots Lane	1387	145	150	PVC2	54,937	2001	85	2086	82,010	71	2,173	-
Scots Lane	1388	76	150	PVC2	30,390	2003	85	2088	42,990	73	1,125	-
Milne Place	1389	331	150	PVC2	141,067	2004	85	2089	187,210	74	4,869	-
Highway 7	1390	148	150	PVC2	63,075	2004	85	2089	83,710	74	2,177	-
Block 43	1391	70	150	PVC2	29,833	2004	85	2089	39,590	74	1,030	-
Jolliffe Avenue	1392	157	200	PVC2	67,081	2004	85	2089	96,300	74	2,505	-
Watermain Easement (Parallel To Ridge Road)	1393	40	150	PVC2	16,962	2004	85	2089	24,350	74	633	-
Block 42 (Easement To Ridge Rd. Sewage Pumping Station)	1394	31	150	PVC2	13,382	2004	85	2089	19,210	74	500	-
MacLennan Street	1395	459	200	PVC2	195,618	2004	85	2089	280,830	74	7,304	-
Parkinson Drive	1396	384	200	PVC2	163,655	2004	85	2089	234,950	74	6,110	-
Hayward Cord	1397	270	200	PVC2	115,070	2004	85	2089	165,200	74	4,296	-
May Street	1398	260	200	PVC2	110,808	2004	85	2089	159,080	74	4,137	-
Gamble Lane	1399	231	200	PVC2	98,449	2004	85	2089	141,340	74	3,676	-
Wheeler Court	1400	278	200	PVC2	118,266	2004	85	2089	169,790	74	4,416	-
Fountain Street	1401	102	200	PVC2	43,471	2004	85	2089	62,410	74	1,623	-
Jolliffe Avenue	1402	73	200	PVC2	34,954	2006	85	2091	44,660	76	1,148	-
Jolliffe Avenue	1403	27	200	PVC2	12,928	2006	85	2091	16,520	76	425	-
Jolliffe Avenue	1404	66	200	PVC2	31,602	2006	85	2091	40,380	76	1,038	-
Jolliffe Avenue	1405	11	200	PVC2	5,028	2006	85	2091	6,420	76	165	-
Jolliffe Avenue	1406	77	200	PVC2	36,869	2006	85	2091	47,110	76	1,211	-
Jolliffe Avenue	1407	13	200	PVC2	6,225	2006	85	2091	7,950	76	204	-
Jolliffe Avenue	1408	50	200	PVC2	23,701	2006	85	2091	30,290	76	779	-
Ridge Top Crescent	1409	43	150	PVC2	20,350	2006	85	2091	26,000	76	668	-
Ridge Top Crescent	1410	108	150	PVC2	51,712	2006	85	2091	66,080	76	1,699	-
Ridge Top Crescent	1411	78	150	PVC2	37,108	2006	85	2091	47,420	76	1,219	-
Ridge Top Crescent	1412	265	150	PVC2	126,647	2006	85	2091	161,830	76	4,160	-
Hampson Crescent	1413	283	150	PVC2	135,505	2006	85	2091	173,150	76	4,451	-
Alicia Lane	1414	92	150	PVC2	44,051	2006	85	2091	56,290	76	1,447	-
Gabriel Lane	1415	81	150	PVC2	38,545	2006	85	2091	49,250	76	1,266	-
Carter'S Lane	1416	182	150	PVC2	87,145	2006	85	2091	111,350	76	2,863	-
Millview Court	1417	15	100	PVC2	7,666	2007	85	2092	9,180	77	235	-
Millview Court	1418	195	150	PVC2	99,407	2007	85	2092	119,000	77	3,042	-
Millview Court (Watermain Easement)	1419	192	150	PVC2	98,129	2007	85	2092	117,470	77	3,003	-
Gates Condo	1420	115	150	PVC2	64,400	2008	85	2093	70,360	78	1,789	-
Total		23,548			5,634,058				10,704,470		372,632	244,840

**Appendix A-5
Guelph/Eramosa
Water & Wastewater Vehicle Inventory - Rockwood & Hamilton Drive**

<i>Description</i>	<i>Initial In-Use Year</i>	<i>Historical Cost</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
2009 Chevy Uplander Summit White Van	2009	18,160	10	2019	19,800	4	replacement due	19,800
2009 Silverado 1500 Reg 4x2 Pickup Truck	2009	19,314	10	2019	21,100	4	replacement due	21,100
2010 Chevrolet HHR	2010	18,914	10	2020	20,700	5	replacement due	20,700
Total		56,388			61,600		0	61,600

Note: Vehicles shared between Water-Rockwood at 56%, Water-Hamilton Dr. at 14% and wastewater at 30%

Appendix B – Hamilton Drive Water System Inventory Data

Appendix B-1
Guelph/Eramosa
Hamilton Drive Water Facilities

<i>Item</i>	<i>Info</i>	<i>ID</i>	<i>Year Installed</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Historical Cost</i>	<i>Replacement Cost (2011)</i>	<i>Replacement Cost (2015)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>	
HUNTINGTON PUMPHOUSE:												
- Huntington Well No. 2		1529	1986			104,483	249,825					
- Well No. 2			1986	56	2042			240,390	27	11,609	-	
- Well Pumps			1986	37	2023			6,000	8	in capital budget	6,000	
- Well Piping			1986	37	2023			6,000	8	in capital budget	6,000	
- Huntington Pumphouse		1530	1986	35	2021	305,090	729,488					
- Electrical Panel			2006	9	2015			8,000	0	in capital budget	8,000	
- Chlorine Pump			2006	11	2017			3,000	2	in capital budget	3,000	
- Chlorine Analyzer			2006	12	2018			3,000	3	in capital budget	3,000	
- Pressure Regulator Valve			2006	14	2020			8,000	5	in capital budget	8,000	
- High Lift Pumps			2006	17	2023			12,000	8	in capital budget	12,000	
- Flow Meters			2006	18	2024			9,000	9	in capital budget	9,000	
- Piping			2006	19	2025			10,000	10	in capital budget	10,000	
- Building			2006	100	2106			376,000	91	9,006	-	
- Roof			2006	15	2021			10,000	6	in capital budget	10,000	
- Pumps			2006	15	2021			10,000	6	in capital budget	10,000	
- Treatment and Process Piping			2006	25	2031			15,000	16	1,105	-	
- Electrical Power			2006	25	2031			200,000	16	14,730	-	
- Instrumentation and Controls			2006	20	2026			72,000	11	7,357	-	
CROSS CREEK PUMPHOUSE												
- Cross Creek Well No. 3		1531	1991			130,721						
- Well			1991	50	2041			249,825	250,307	26	12,440	-
- Well Pumps			1991	32	2023			6,000	8	in capital budget	6,000	
- Well Piping			1991	32	2023			6,000	8	in capital budget	6,000	
- Cross Creek Pumphouse		1532	1991	25	2016	376,476	755,442					
- Building			1991	100	2091			410,000	76	10,540	-	
- Roof			2013	15	2028			10,000	13	881	-	
- Pumps			2008	15	2023			20,000	8	in capital budget	20,000	
- Treatment and Process Piping			2000	25	2025			110,000	10	in capital budget	110,000	
- Electrical Power			2017	25	2042			85,000	27	4,105	-	
- Instrumentation and Controls			2015	20	2035			97,000	20	5,932	-	
Hamilton Drive Standpipe		1533	1996	50	2046	564,691	999,298	919,090	31	40,069	-	
Cross Creek Well No. 3	Anode		1996	20	2016			65,000	1	in capital budget	65,000	
Cross Creek Well No. 3	Electrical Panel		1996	21	2017			10,000	2	in capital budget	10,000	
Cross Creek Well No. 3	Chlorine Analyzer		1996	22	2018			3,000	3	in capital budget	3,000	
Cross Creek Well No. 3	Piping		1996	29	2025			40,000	10	in capital budget	40,000	
SCADA system RPU & HMI upgrades	(50% cost to Rockwood - 50% to Hamilton Drive)	1540	2009	5	2015	12,957	12,948	14,150	0	in capital budget	14,150	
Total						1,494,418	2,996,825	3,033,936		117,774	359,150	

Appendix B-2
Guelph/Eramosa
Water Meter Inventory - Hamilton Drive

<i>Asset ID</i>	<i>Number of Meters</i>	<i>Year Installed</i>	<i>Historical Cost (per Unit)</i>	<i>Historical Cost</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost Per Unit (2015\$)</i>	<i>Replacement Cost (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
1997	28	1989	49.51	1,386.28	25	2015	180	5,040	0	replacement due	5,040
2000	8	1992	49.90	399.20	30	2022	180	1,440	7	replacement due	1,440
2001	8	1993	49.90	399.20	30	2023	180	1,440	8	replacement due	1,440
2002	8	1994	49.90	399.20	30	2024	180	1,440	9	replacement due	1,440
2003	8	1995	51.45	411.60	30	2025	180	1,440	10	replacement due	1,440
2004	8	1996	52.43	419.44	30	2026	180	1,440	11	147	-
2005	9	1997	53.53	481.77	30	2027	180	1,620	12	153	-
2006	9	1998	54.52	490.68	30	2028	180	1,620	13	143	-
2007	9	1999	55.84	502.56	30	2029	180	1,620	14	134	-
2008	9	2000	60.16	541.44	30	2030	180	1,620	15	126	-
2009	9	2001	62.82	565.38	30	2031	180	1,620	16	119	-
2010	9	2002	63.93	575.37	30	2032	180	1,620	17	113	-
2011	9	2003	66.30	596.70	30	2033	180	1,620	18	108	-
2012	9	2004	70.66	635.94	30	2034	180	1,620	19	103	-
2013	9	2005	74.40	669.60	30	2035	180	1,620	20	99	-
2014	9	2006	79.39	714.51	30	2036	180	1,620	21	95	-
2015	9	2007	84.74	762.66	30	2037	180	1,620	22	92	-
2016	9	2008	92.85	835.65	30	2038	180	1,620	23	89	-
	40	2014	123.76	4,950.50	30	2044	180	7,200	29	330	-
Total	216			15,737.68				38,880		1,851	10,800

**Appendix B-3
Guelph/Eramosa
Hamilton Drive Water Hydrants**

<i>Asset ID</i>	<i>Number of Hydrants</i>	<i>Historical Cost per Unit</i>	<i>Total Historical Cost</i>	<i>Year Installed</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost Per Unit (2015\$)</i>	<i>Total Replacement Cost (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
1957-1991	6	444	2,665	1969	50	2019	3,800	22,800	4	replacement due	22,800
	1	765	765	1977	50	2027	3,800	3,800	12	359	-
	4	1,482	5,928	1986	50	2036	3,800	15,200	21	894	-
	12	1,938	23,260	1990	50	2040	3,800	45,600	25	2,336	-
	21	2,002	42,047	1996	50	2046	3,800	79,800	31	3,479	-
Total	44		74,666					167,200		7,067	22,800

Appendix B-4
Guelph/Eramosa
Hamilton Drive Watermains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m (2010\$)	Total Main Replacement Costs (2009\$)	Total Main Replacement Costs (2015\$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Hamilton Drive	1198	65	150	PVC2	4,560	1969	100	2069	560	36,374	48,300	54	1,471	-
Hamilton Drive	1199	100	150	PVC2	7,015	1969	100	2069	560	55,961	61,140	54	1,862	-
Hamilton Drive	1200	115	150	PVC2	8,067	1969	100	2069	560	64,355	70,310	54	2,141	-
Blue Forest Crescent	1201	445	150	PVC2	31,216	1969	100	2069	560	249,025	272,080	54	8,285	-
Blue Forest Crescent	1202	250	150	PVC2	17,537	1969	100	2069	560	139,902	152,850	54	4,655	-
Blue Forest Crescent	1203	140	150	PVC2	16,923	1977	100	2077	560	78,345	85,600	62	2,421	-
Jessica Lane	1204	115	150	PVC2	26,915	1986	100	2086	560	64,355	70,310	71	1,863	-
Jessica Lane	1205	420	150	PVC2	98,298	1986	100	2086	560	235,035	256,790	71	6,804	-
George Wellington Place	1206	220	150	PVC2	51,489	1986	100	2086	560	123,114	134,510	71	3,564	-
Bedford Road	1207	165	200	PVC2	50,512	1990	100	2090	560	92,335	100,880	75	2,608	-
Cross Creek Blvd.	1208	890	150	PVC2	272,461	1990	100	2090	560	498,050	544,160	75	14,069	-
Cross Creek Blvd.	1209	120	150	PVC2	36,736	1990	100	2090	560	67,153	73,370	75	1,897	-
Cross Creek Blvd.	1210	75	200	PVC2	22,960	1990	100	2090	560	41,971	45,860	75	1,186	-
Cross Creek Blvd.	1211	105	200	PVC2	32,144	1990	100	2090	560	58,759	64,200	75	1,660	-
Cross Creek Blvd.	1212	50	200	PVC2	15,307	1990	100	2090	560	27,980	30,570	75	790	-
Bedford East	1213	285	150	PVC2	87,249	1990	100	2090	560	159,488	174,250	75	4,505	-
Victoria Rd.	1214	480	250	PVC2	151,789	1996	100	2096	560	268,611	293,480	81	7,347	-
Conservation Road	1215	225	250	PVC2	71,151	1996	100	2096	560	125,912	137,570	81	3,444	-
Conservation Road	1216	390	200	PVC2	123,329	1996	100	2096	560	218,247	238,450	81	5,969	-
Conservation Road	1217	310	200	PVC2	98,030	1996	100	2096	560	173,478	189,540	81	4,745	-
Conservation Road	1218	170	200	PVC2	53,759	1996	100	2096	560	95,133	103,940	81	2,602	-
Conservation Road	1219	35	200	PVC2	11,068	1996	100	2096	560	19,586	21,400	81	536	-
Conservation Road	1220	50	200	PVC2	15,811	1996	100	2096	560	27,980	30,570	81	765	-
Conservation Road	1221	175	200	PVC2	55,340	1996	100	2096	560	97,931	107,000	81	2,679	-
Christine Drive	1222	500	200	PVC2	158,114	1996	100	2096	560	279,804	305,710	81	7,653	-
Jason Drive	1223	440	150	PVC2	139,140	1996	100	2096	560	246,227	269,020	81	6,735	-
Cross Creek Blvd.	1224	150	200	PVC2	47,434	1996	100	2096	560	83,941	91,710	81	2,296	-
Adam Court	1225	65	150	PVC2	20,555	1996	100	2096	560	36,374	39,740	81	995	-
Adam Court	1226	135	150	PVC2	42,691	1996	100	2096	560	75,547	82,540	81	2,066	-
Total		6,685			1,767,598					3,740,973	4,095,850		107,613	0

Appendix C – Gazer Mooney Water and Wastewater System Inventory Data

Appendix C-1
Guelph/Eramosa
Gazer-Mooney Watermains

<i>Street</i>	<i>Asset ID</i>	<i>Length (m)</i>	<i>Diameter (mm)</i>	<i>Material</i>	<i>Historical Cost</i>	<i>Year Installed</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Total Main Replacement Costs (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
Promenade Rd.	1193	300	150	PVC2	47,450	1980	100	2080	183,420	65	5,067	-
Eramosa Cres.	1194	200	150	PVC2	31,633	1980	100	2080	122,280	65	3,378	-
Hillside Dr.	1195	100	150	PVC2	15,817	1980	100	2080	61,140	65	1,689	-
Gazer Cr.	1196	200	150	PVC2	31,633	1980	100	2080	122,280	65	3,378	-
Speedvale Ave.	1197	500	150	PVC2	79,083	1980	100	2080	305,710	65	8,446	-
Total		1,300			205,615				794,830		21,958	-

Appendix C-2
Guelph/Eramosa
Wastewater Facilities - Gazer-Mooney

<i>Item</i>	<i>Asset ID</i>	<i>Year Installed</i>	<i>Historical Cost</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost (2015\$)</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
Gazer-Mooney Pumping Station:		1980	75,551						
- Building	1548	1980		50	2030	80,000	15	6,226	-
- Roof		2000		20	2020	12,000	5	in capital budget	12,000
- Wet Well		1980		60	2040	280,000	25	14,342	-
- Valve Chamber		1995		60	2055	60,000	40	2,193	-
- Piping		1980		50	2030	80,000	15	6,226	-
- Electrical and Controls		1980		45	2025	120,000	10	in capital budget	120,000
Total				75,551			632,000		28,987

Note: There are also 4 Pumps at the PS which are replaced as maintenance by City of Guelph on a rotating schedule

**Appendix C-3
Guelph/Eramosa**

Wastewater- Gazer-Mooney Force mains

<i>Street</i>	<i>Asset ID</i>	<i>Length (m)</i>	<i>Diameter (mm)</i>	<i>Material</i>	<i>Historical Cost</i>	<i>Year Installed</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost / m (2011\$)</i>	<i>Replacement Cost / m (2015\$)</i>	<i>Total Main Replacement Costs</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
Speedvale Avenue Force main	1192	500	100	PVC2	79,083	1980	100	2080	559.61	590	527,875	65	14,583	-
Total		500			79,083						527,875		14,583	0

**Appendix C-4
Guelph/Eramosa**

Wastewater- Gazer-Mooney Sanitary Sewers

<i>Street</i>	<i>Asset ID</i>	<i>Length (m)</i>	<i>Diameter (mm)</i>	<i>Material</i>	<i>Historical Cost</i>	<i>Year Installed</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost / m (2011\$)</i>	<i>Replacement Cost / m (2015\$)</i>	<i>Total Main Replacement Costs</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
Promenade Rd.	1184	300	200	PVC2	72,869	1980	100	2080	859.4	900	270,000	65	7,459	-
Eramosa Cres.	1185	200	200	PVC2	48,579	1980	100	2080	859.4	900	180,000	65	4,973	-
Hillside Dr.	1186	100	200	PVC2	24,290	1980	100	2080	859.4	900	90,000	65	2,486	-
Gazer Cr.	1187	200	200	PVC2	48,579	1980	100	2080	859.4	900	180,000	65	4,973	-
Speedvale Ave.	1188	500	200	PVC2	121,449	1980	100	2080	859.4	900	450,000	65	12,432	-
Total		1,300			315,766						1,170,000		32,323	0

Appendix D – Rockwood Wastewater System Inventory Data

**Appendix D-1
Guelph/Eramosa**

Wastewater Facilities - Rockwood

<i>Item</i>	<i>Component</i>	<i>Asset ID</i>	<i>Historical Cost</i>	<i>Year Installed</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
Lou's Boulevard Sewage Pumping Station	Pumps	1545	1,531	1987	28	2015	7,000	0	in capital budget	7,000
Lou's Boulevard Sewage Pumping Station	Access Hatch	1545	1,312	1987	28	2015	6,000	0	in capital budget	6,000
Lou's Boulevard Sewage Pumping Station	Pumps	1545	2,187	1987	30	2017	10,000	2	in capital budget	10,000
Lou's Boulevard Sewage Pumping Station	Piping	1545	26,241	1987	30	2017	120,000	2	in capital budget	120,000
Lou's Boulevard Sewage Pumping Station	Controls	1545	21,867	1987	31	2018	100,000	3	in capital budget	100,000
Lou's Boulevard Sewage Pumping Station	Back up Power Generator	1545	39,361	1987	32	2019	180,000	4	in capital budget	180,000
Lou's Boulevard Sewage Pumping Station	Wet Well	1545	65,601	1987	40	2027	300,000	12	28,368	-
Lou's Boulevard Sewage Pumping Station	Pumps	1545	4,373	1987	39	2026	20,000	11	2,044	-
Valley Road Sewage Pumping Station	Generator	2625	60,000	1999	25	2024	150,000	9	in capital budget	150,000
Valley Road Sewage Pumping Station	Wet Well	2626	120,436	1999	35	2034	500,000	19	31,891	-
Valley Road Sewage Pumping Station	Meter Chamber	2627	60,000	2014	50	2064	60,000	49	1,932	-
Valley Road Sewage Pumping Station	Pumps	2628	150,000	2014	15	2029	150,000	14	12,390	-
Valley Road Sewage Pumping Station	Piping	2629	180,000	2014	35	2049	150,000	34	6,123	-
Valley Road Sewage Pumping Station	Electrical & Controls	2630	225,000	2014	20	2034	180,000	19	11,481	-
Ridge Road Sewage Pumping Station	Generator	1547	49,963	1999	30	2029	150,000	14	12,390	-
Ridge Road Sewage Pumping Station	Wet Well	1547	99,925	1999	60	2059	300,000	44	10,316	-
Ridge Road Sewage Pumping Station	Pumps	1547	2,665	1999	19	2018	8,000	3	in capital budget	8,000
Ridge Road Sewage Pumping Station	Piping	1547	16,654	1999	25	2024	50,000	9	in capital budget	50,000
Ridge Road Sewage Pumping Station	Electrical	1547	8,327	1999	30	2029	25,000	14	2,065	-
Ridge Road Sewage Pumping Station	Controls	1547	8,327	1999	17	2016	25,000	1	in capital budget	25,000
Ridge Road Sewage Pumping Station	Building	1547	19,985	1999	75	2074	60,000	59	1,741	-
Ridge Road Sewage Pumping Station	Roof	1547	4,663	1999	35	2034	14,000	19	893	-
McLennan Street Sewage pumping station	Generator	2556	52,980	2010	30	2040	150,000	25	7,683	-
McLennan Street Sewage pumping station	Wet Well	2556	141,281	2010	60	2070	400,000	55	12,057	-
McLennan Street Sewage pumping station	Pumps	2556	3,532	2010	6	2016	10,000	1	in capital budget	10,000
McLennan Street Sewage pumping station	Pumps	2556	3,532	2010	8	2018	10,000	3	in capital budget	10,000
McLennan Street Sewage pumping station	Piping	2556	17,660	2010	14	2024	50,000	9	in capital budget	50,000
McLennan Street Sewage pumping station	Electrical & Controls	2556	28,256	2010	30	2040	80,000	25	4,098	-
McLennan Street Sewage pumping station	Building	2556	28,256	2010	75	2085	80,000	70	2,133	-
McLennan Street Sewage pumping station	Roof	2556	4,945	2010	14	2024	14,000	9	in capital budget	14,000
Total			1,448,860				3,359,000		147,606	740,000

Appendix D-2
Guelph/Eramosa
Rockwood Wastewater Facilities - Skyway Monitoring Station

<i>Item</i>	<i>Component</i>	<i>Asset ID</i>	<i>Year Installed</i>	<i>Historical Cost</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Replacement Cost</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
Skyway Monitoring Station	Meter Chamber	2644	2014	294,527	51	2065	303,000	50	9,642	-
Skyway Monitoring Station	Monitoring Manhole	2645	2014	230,000	26	2040	232,300	25	11,899	-
Skyway Monitoring Station	Flow Meter	2646	2014	25,000	21	2035	25,300	20	1,547	-
Skyway Monitoring Station	H2S Monitor	2647	2014	15,000	8	2022	15,200	7	in capital budget	15,200
Skyway Monitoring Station	Piping	2648	2014	120,000	31	2045	80,800	30	3,608	-
Skyway Monitoring Station	Electrical & Controls	2649	2014	100,000	21	2035	101,000	20	6,177	-
Total				784,527			757,600		32,873	15,200

Appendix D-3
Guelph/Eramosa
Sanitary Sewers - Rockwood

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Main Street	916	84	250	PVC	18,871	1975	75	2050	1,060	89,172	35	3,567	-
Main Street	917	76	250	PVC	17,093	1975	75	2050	1,060	80,772	35	3,231	-
Main Street	918	76	250	PVC	17,093	1975	75	2050	1,060	80,772	35	3,231	-
Main Street	919	109	250	PVC	24,341	1975	75	2050	1,060	115,019	35	4,601	-
Main Street	920	12	250	PVC	2,803	1975	75	2050	1,060	13,247	35	530	-
Gzowsky Street	921	99	200	PVC	22,153	1975	75	2050	1,060	104,681	35	4,187	-
Gzowsky Street	922	101	200	PVC	22,632	1975	75	2050	1,060	106,942	35	4,278	-
Gzowsky Street	923	77	200	PVC	17,230	1975	75	2050	1,060	81,418	35	3,257	-
Christie Street	924	46	200	PVC	10,324	1975	75	2050	1,060	48,786	35	1,952	-
Christie Street	925	55	200	PVC	12,239	1975	75	2050	1,060	57,833	35	2,313	-
Christie Street	926	100	200	PVC	22,495	1975	75	2050	1,060	106,296	35	4,252	-
Jackson Street	927	100	250	PVC	22,495	1975	75	2050	1,060	106,296	35	4,252	-
Jackson Street	928	101	250	PVC	22,563	1975	75	2050	1,060	106,619	35	4,265	-
Jackson Street	929	101	250	PVC	22,563	1975	75	2050	1,060	106,619	35	4,265	-
Mackenzie Street	930	123	200	PVC	27,555	1975	75	2050	1,060	130,204	35	5,208	-
Mackenzie Street	931	48	200	PVC	10,871	1975	75	2050	1,060	51,371	35	2,055	-
Mackenzie Street	932	103	200	PVC	23,110	1975	75	2050	1,060	109,204	35	4,368	-
Mackenzie Street	933	68	200	PVC	15,316	1975	75	2050	1,060	72,372	35	2,895	-
Brady Street	934	55	200	PVC	12,307	1975	75	2050	1,060	58,156	35	2,326	-
Brady Street	935	37	200	PVC	8,342	1975	75	2050	1,060	39,417	35	1,577	-
Brady Street	936	49	200	PVC	11,008	1975	75	2050	1,060	52,017	35	2,081	-
Brady Street	937	68	200	PVC	15,179	1975	75	2050	1,060	71,726	35	2,869	-
Queen Street	938	97	200	PVC	21,811	1975	75	2050	1,060	103,065	35	4,123	-
Queen Street	939	56	200	PVC	12,512	1975	75	2050	1,060	59,125	35	2,365	-
Queen Street	940	29	200	PVC	6,427	1975	75	2050	1,060	30,370	35	1,215	-
Dennis Street	941	138	200	PVC	30,957	1975	75	2050	1,060	146,280	35	5,852	-
Main Street	942	56	250	PVC	12,512	1975	75	2050	1,060	59,125	35	2,365	-
Main Street	943	87	250	PVC	19,418	1975	75	2050	1,060	91,757	35	3,670	-
Main Street	944	95	250	PVC	21,333	1975	75	2050	1,060	100,803	35	4,032	-
Main Street	945	85	200	PVC	19,076	1975	75	2050	1,060	90,142	35	3,606	-
Main Street	946	103	200	PVC	23,042	1975	75	2050	1,060	108,881	35	4,355	-
Main Street	947	112	200	PVC	25,161	1975	75	2050	1,060	118,896	35	4,756	-
Main Street	948	94	200	PVC	21,196	1975	75	2050	1,060	100,157	35	4,007	-
Main Street	949	94	200	PVC	20,991	1975	75	2050	1,060	99,188	35	3,968	-
Station St. East	950	22	200	PVC	84,109	1975	75	2050	1,060	23,262	35	931	-
Station St. West	951	108	200	PVC	34,909	1975	75	2050	1,060	114,696	35	4,588	-
Station St. West	952	98	200	PVC	34,440	1975	75	2050	1,060	103,388	35	4,136	-

Appendix D-3 (Cont.)
Guelph/Eramosa
Sanitary Sewers - Rockwood

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Station St. West	953	91	200	PVC	4,923	1975	75	2050	1,060	95,957	35	3,838	-
Division Street	954	102	300	PVC	24,273	1975	75	2050	1,060	108,558	35	4,343	-
Division Street	955	78	300	PVC	21,880	1975	75	2050	1,060	82,711	35	3,309	-
Division Street	956	79	300	PVC	20,307	1975	75	2050	1,060	83,680	35	3,347	-
Division Street	957	103	300	PVC	22,974	1975	75	2050	1,060	109,527	35	4,381	-
Gowan Street	958	92	200	PVC	17,504	1975	75	2050	1,060	97,520	35	3,901	-
Alma Street	959	99	200	PVC	17,709	1975	75	2050	1,060	105,327	35	4,213	-
Alma Street	960	96	200	PVC	23,179	1975	75	2050	1,060	101,450	35	4,058	-
Alma Street	961	49	200	PVC	20,638	1975	75	2050	1,060	51,694	35	2,068	-
Alma Street	962	80	300	PVC	22,290	1975	75	2050	1,060	84,649	35	3,386	-
Alma Street	963	81	300	PVC	21,469	1975	75	2050	1,060	86,264	35	3,451	-
Alma Street	964	80	300	PVC	10,940	1975	75	2050	1,060	84,972	35	3,399	-
Alma Street	965	78	300	PVC	17,914	1975	75	2050	1,060	82,387	35	3,296	-
Alma Street	966	77	300	PVC	18,256	1975	75	2050	1,060	81,741	35	3,270	-
Alma Street	967	75	300	PVC	17,982	1975	75	2050	1,060	79,803	35	3,192	-
Alma Street	968	114	300	PVC	17,435	1975	75	2050	1,060	120,835	35	4,834	-
Alma Street	969	74	300	PVC	17,299	1975	75	2050	1,060	78,833	35	3,153	-
Alma Street (Ostrander Easement)	970	70	300	PVC	16,888	1975	75	2050	1,060	74,633	35	2,985	-
Alma Street (Ostrander Easement)	971	40	300	PVC	25,572	1975	75	2050	1,060	42,001	35	1,680	-
Alma Street (Ostrander Easement)	972	94	300	PVC	16,683	1975	75	2050	1,060	100,157	35	4,007	-
Alma Street (Ostrander Easement)	973	47	300	PVC	15,794	1975	75	2050	1,060	50,079	35	2,003	-
Guelph Street	974	79	200	PVC	8,889	1975	75	2050	1,060	83,680	35	3,347	-
Guelph Street	975	91	200	PVC	21,196	1975	75	2050	1,060	96,926	35	3,877	-
Guelph Street	976	76	200	PVC	10,598	1975	75	2050	1,060	80,772	35	3,231	-
Guelph Street	977	60	200	PVC	17,709	1975	75	2050	1,060	63,325	35	2,533	-
Guelph Street	978	77	200	PVC	20,512	1975	75	2050	1,060	81,095	35	3,244	-
Mary Street	979	85	200	PVC	17,093	1975	75	2050	1,060	89,818	35	3,593	-
Mary Street	980	85	200	PVC	13,401	1975	75	2050	1,060	89,818	35	3,593	-
Mary Street	981	87	200	PVC	17,162	1975	75	2050	1,060	92,080	35	3,683	-
Balaclava Street	982	48	200	PVC	19,008	1975	75	2050	1,060	50,402	35	2,016	-
Balaclava Street	983	46	200	PVC	19,008	1975	75	2050	1,060	48,463	35	1,939	-
Balaclava Street	984	68	200	PVC	19,486	1975	75	2050	1,060	71,726	35	2,869	-
Balaclava Street	985	110	200	PVC	10,666	1975	75	2050	1,060	116,958	35	4,679	-
Richardson Street	986	23	200	PVC	10,256	1975	75	2050	1,060	23,909	35	956	-
Dowler Street	987	28	200	PVC	15,179	1975	75	2050	1,060	29,724	35	1,189	-
Catherine Street	988	105	200	PVC	24,751	1975	75	2050	1,060	111,465	35	4,459	-
Inkerman Street	989	101	200	PVC	5,060	1975	75	2050	1,060	106,942	35	4,278	-

Appendix D-3 (Cont.)
Guelph/Eramosa
Sanitary Sewers - Rockwood

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Passmore Street	990	61	200	PVC	6,290	1975	75	2050	1,060	64,618	35	2,585	-
Passmore Street	991	101	200	PVC	23,589	1975	75	2050	1,060	106,619	35	4,265	-
Passmore Street	992	97	200	PVC	22,632	1975	75	2050	1,060	102,742	35	4,110	-
Valley Road	993	72	200	PVC	13,675	1975	75	2050	1,060	75,926	35	3,037	-
Valley Road	994	12	300	PVC	22,563	1975	75	2050	1,060	12,277	35	491	-
Valley Road	995	62	300	PVC	21,743	1975	75	2050	1,060	65,264	35	2,611	-
Valley Road	996	25	300	PVC	16,068	1975	75	2050	1,060	26,493	35	1,060	-
Valley Road (Milne Easement)	997	69	250	PVC	2,598	1975	75	2050	1,060	73,140	35	2,926	-
Main Street	998	94	250	PVC	13,811	1975	75	2050	1,060	99,834	35	3,994	-
Main Street	999	15	250	PVC	5,607	1975	75	2050	1,060	15,508	35	620	-
Main Street	1000	59	200	PVC	15,478	1975	75	2050	1,060	63,002	35	2,520	-
Main Street	1001	85	200	PVC	48,263	1975	75	2050	1,060	90,142	35	3,606	-
Main Street	1002	92	200	PVC	21,127	1975	75	2050	1,060	97,573	35	3,903	-
Main Street	1003	116	250	PVC	3,282	1975	75	2050	1,060	122,450	35	4,898	-
Main Street	1004	105	250	PVC	13,333	1975	75	2050	1,060	111,788	35	4,472	-
George Street (Death Easement)	1005	65	200	PVC	19,076	1975	75	2050	1,060	68,818	35	2,753	-
Harris Street	1006	93	200	PVC	20,649	1975	43	2018	1,060	98,865	3	n capital budget	98,865
Harris Street	1007	76	200	PVC	25,914	1975	43	2018	1,060	80,126	3	n capital budget	80,126
Harris Street	1008	107	200	PVC	23,657	1975	43	2018	1,060	113,081	3	n capital budget	113,081
Harris Street	1009	92	200	PVC	14,564	1975	43	2018	1,060	97,896	3	n capital budget	97,896
Harris Street	1010	91	200	PVC	20,922	1975	43	2018	1,060	95,957	3	n capital budget	95,957
Harris Street	1011	81	200	PVC	16,957	1975	43	2018	1,060	85,941	3	n capital budget	85,941
Harris Street	1012	81	200	PVC	23,931	1975	43	2018	1,060	86,264	3	n capital budget	86,264
Harris Street	1013	81	200	PVC	20,717	1975	43	2018	1,060	86,264	3	n capital budget	86,264
Frederick Street	1014	101	250	PVC	20,307	1975	75	2050	1,060	106,942	35	4,278	-
Weatherald Street	1015	76	250	PVC	18,187	1975	75	2050	1,060	80,126	35	3,205	-
Weatherald Street	1016	70	250	PVC	18,256	1975	75	2050	1,060	74,310	35	2,973	-
Weatherald Street	1017	71	250	PVC	18,256	1975	75	2050	1,060	75,280	35	3,011	-
Henry Street	1018	54	200	PVC	40,531	1985	75	2060	1,060	56,863	45	1,928	-
Main Street	1019	85	200	PVC	48,029	1999	75	2074	1,060	90,100	59	2,615	-
Main Street	1020	9	250	PVC	9,371	1999	75	2074	1,060	9,540	59	277	-
Main Street	1021	84	250	PVC	22,632	1999	75	2074	1,060	89,040	59	2,584	-
Main Street	1022	157	250	PVC	34,589	1999	75	2074	1,060	166,420	59	4,830	-
Main Street	1023	23	250	PVC	39,201	1999	75	2074	1,060	24,380	59	708	-
Main Street	1024	109	375	PVC2	16,957	2004	100	2104	1,060	115,989	89	2,800	-
Main Street	1025	45	375	PVC2	15,726	2004	100	2104	1,060	48,140	89	1,162	-
Main Street	1026	45	375	PVC2	15,931	2004	100	2104	1,060	47,494	89	1,147	-

Appendix D-3 (Cont.)
Guelph/Eramosa
Sanitary Sewers - Rockwood

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Main Street	1027	63	375	PVC2	21,316	2004	100	2104	1,060	66,556	89	1,607	-
Carrol Street	1028	53	250	PVC2	9,205	2004	100	2104	1,060	55,894	89	1,349	-
Carrol Street	1029	62	200	PVC2	38,757	2004	100	2104	1,060	66,233	89	1,599	-
Carrol Street	1030	12	200	PVC2	32,035	2004	100	2104	1,060	12,924	89	312	-
Manse Easement	1031	45	300	PVC2	17,562	2004	100	2104	1,060	47,700	89	1,152	-
Manse Easement	1032	51	300	PVC2	37,424	2004	100	2104	1,060	54,060	89	1,305	-
Henry Street	1033	23	200	PVC2	2,422	1985	100	2085	1,060	24,555	70	655	-
Henry Street	1034	98	200	PVC2	19,742	1985	100	2085	1,060	103,388	70	2,757	-
Henry Street	1035	81	200	PVC2	202,653	1985	100	2085	1,060	85,457	70	2,279	-
Henry Street	1036	44	200	PVC2	113,247	1985	100	2085	1,060	46,848	70	1,249	-
Henry Street	1037	94	200	PVC2	113,247	1985	100	2085	1,060	99,834	70	2,662	-
Henry Street	1038	6	200	PVC2	22,150	1985	100	2085	1,060	6,462	70	172	-
Henry Street	1039	50	200	PVC2	24,866	1985	100	2085	1,060	52,663	70	1,404	-
Henry Street	1040	510	200	PVC2	20,293	1985	100	2085	1,060	540,600	70	14,417	-
John Street	1041	285	200	PVC2	28,081	1985	100	2085	1,060	302,100	70	8,056	-
MacLennan Street	1042	285	200	PVC2	4,287	1985	100	2085	1,060	302,100	70	8,056	-
Parkedge Street	1043	47	200	PVC2	45,404	1987	100	2087	1,060	50,079	72	1,318	-
Parkedge Street	1044	53	200	PVC2	46,589	1987	100	2087	1,060	56,217	72	1,480	-
Parkedge Street	1045	43	200	PVC2	45,188	1987	100	2087	1,060	45,878	72	1,208	-
Parkedge Street	1046	60	200	PVC2	45,080	1987	100	2087	1,060	63,487	72	1,671	-
Parkedge Street	1047	9	200	PVC2	27,738	1987	100	2087	1,060	9,693	72	255	-
Lou'S Boulevard	1048	84	200	PVC2	47,989	1989	100	2089	1,060	89,358	74	2,324	-
Lou'S Boulevard	1049	87	200	PVC2	46,373	1989	100	2089	1,060	91,690	74	2,385	-
Lou'S Boulevard	1050	84	200	PVC2	28,923	1989	100	2089	1,060	88,934	74	2,313	-
Lou'S Boulevard	1051	84	200	PVC2	6,894	1989	100	2089	1,060	88,722	74	2,307	-
Lou'S Boulevard	1052	52	200	PVC2	44,542	1989	100	2089	1,060	54,590	74	1,420	-
Lou'S Boulevard	1053	89	200	PVC2	60,700	1989	100	2089	1,060	94,446	74	2,456	-
Lou'S Boulevard	1054	86	200	PVC2	57,738	1989	100	2089	1,060	91,266	74	2,374	-
Lou'S Boulevard	1055	54	200	PVC2	33,824	1989	100	2089	1,060	56,922	74	1,480	-
Lou'S Boulevard	1056	13	200	PVC2	47,935	1989	100	2089	1,060	13,568	74	353	-
Lou'S Boulevard	1057	83	200	PVC2	31,077	1989	100	2089	1,060	87,662	74	2,280	-
Lou'S Boulevard	1058	113	200	PVC2	29,263	1989	100	2089	1,060	119,462	74	3,107	-
Lou'S Boulevard	1059	107	200	PVC2	24,349	1989	100	2089	1,060	113,632	74	2,955	-
Lou'S Boulevard	1060	63	200	PVC2	13,527	1989	100	2089	1,060	66,568	74	1,731	-
Lou Hilt'S Cres.	1061	89	200	PVC2	48,919	1989	100	2089	1,060	94,340	74	2,454	-
Lou'S Blvd. (Retention-Pond)	1062	58	200	PVC2	9,221	1989	100	2089	1,060	61,162	74	1,591	-
Christie Street	1063	53	200	PVC2	48,202	1990	100	2090	1,060	56,180	75	1,453	-

Appendix D-3 (Cont.)
Guelph/Eramosa
Sanitary Sewers - Rockwood

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Christie Street	1064	44	200	PVC2	47,594	1990	100	2090	1,060	46,746	75	1,209	-
Christie Street	1065	25	200	PVC2	11,926	1990	100	2090	1,060	25,970	75	671	-
Christie Street	1066	89	200	PVC2	53,447	1990	100	2090	1,060	93,916	75	2,428	-
Christie Street	1067	17	200	PVC2	165,641	1990	100	2090	1,060	17,702	75	458	-
Christie Street	1068	87	200	PVC2	8,172	1990	100	2090	1,060	92,538	75	2,393	-
Christie Street	1069	86	200	PVC2	50,410	1990	100	2090	1,060	91,372	75	2,362	-
Christie Street	1070	22	200	PVC2	51,790	1990	100	2090	1,060	22,896	75	592	-
Christie Street	1071	97	200	PVC2	11,761	1990	100	2090	1,060	102,608	75	2,653	-
Christie Loop	1072	300	200	PVC2	63,441	1990	100	2090	1,060	318,000	75	8,222	-
Landrex Boulevard	1073	15	200	PVC2	19,214	1990	100	2090	1,060	15,688	75	406	-
Landrex Boulevard	1074	91	200	PVC2	4,804	1990	100	2090	1,060	96,778	75	2,502	-
Landrex Boulevard	1075	94	200	PVC2	27,828	1990	100	2090	1,060	99,428	75	2,571	-
Princess Street	1076	21	200	PVC2	49,527	1990	100	2090	1,060	22,578	75	584	-
Princess Street	1077	115	200	PVC2	57,367	1990	100	2090	1,060	121,794	75	3,149	-
Princess Street	1078	35	200	PVC2	10,244	1990	100	2090	1,060	36,888	75	954	-
Princess Street	1079	9	200	PVC2	17,625	1990	100	2090	1,060	9,222	75	238	-
Gzowsky Street	1080	50	200	PVC2	37,217	1990	100	2090	1,060	53,424	75	1,381	-
Gzowsky Street	1081	90	200	PVC2	13,643	1990	100	2090	1,060	95,082	75	2,458	-
Queen Street	1082	104	200	PVC2	44,554	1990	100	2090	1,060	110,134	75	2,848	-
Cobblestone Place	1083	23	200	PVC2	33,728	1992	100	2092	1,060	24,274	77	621	-
Cobblestone Place	1084	39	200	PVC2	32,431	1992	100	2092	1,060	41,764	77	1,068	-
Cobblestone Place	1085	83	200	PVC2	31,089	1992	100	2092	1,060	88,192	77	2,255	-
Cobblestone Place	1086	31	200	PVC2	44,732	1992	100	2092	1,060	32,330	77	826	-
Cobblestone Place	1087	100	200	PVC2	16,864	1992	100	2092	1,060	105,576	77	2,699	-
Cobblestone Place	1088	75	200	PVC2	17,893	1992	100	2092	1,060	79,924	77	2,043	-
Cobblestone Place	1089	73	200	PVC2	38,649	1992	100	2092	1,060	76,850	77	1,965	-
Cobblestone Place	1090	70	200	PVC2	32,028	1992	100	2092	1,060	73,670	77	1,883	-
Cobblestone Place	1091	100	200	PVC2	19,548	1992	100	2092	1,060	106,000	77	2,710	-
Cobblestone Place	1092	38	200	PVC2	17,625	1992	100	2092	1,060	39,962	77	1,022	-
Cobblestone Place	1093	40	200	PVC2	34,981	1992	100	2092	1,060	42,400	77	1,084	-
Cobblestone Place	1094	86	200	PVC2	16,104	1992	100	2092	1,060	91,584	77	2,341	-
Cobblestone Place	1095	72	200	PVC2	43,428	1992	100	2092	1,060	75,896	77	1,940	-
Cobblestone Place	1096	44	200	PVC2	43,428	1992	100	2092	1,060	46,322	77	1,184	-
Cobblestone Place	1097	39	200	PVC2	43,428	1992	100	2092	1,060	41,764	77	1,068	-
Cobblestone Place	1098	78	200	PVC2	20,704	1992	100	2092	1,060	82,892	77	2,119	-
Cobblestone Place	1099	36	200	PVC2	30,804	1992	100	2092	1,060	38,160	77	976	-
Bernardi Crescent	1100	86	200	PVC2	22,219	1998	100	2098	1,060	91,160	83	2,260	-

Appendix D-3 (Cont.)
Guelph/Eramosa
Sanitary Sewers - Rockwood

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Bernardi Crescent	1101	86	200	PVC2	20,199	1998	100	2098	1,060	91,160	83	2,260	-
Bernardi Crescent	1102	86	200	PVC2	7,575	1998	100	2098	1,060	91,160	83	2,260	-
Bernardi Crescent	1103	41	200	PVC2	26,259	1998	100	2098	1,060	43,460	83	1,077	-
Bernardi Crescent	1104	61	200	PVC2	25,754	1998	100	2098	1,060	64,660	83	1,603	-
May Street	1105	44	200	PVC2	43,966	1998	100	2098	1,060	46,640	83	1,156	-
May Street	1106	40	200	PVC2	4,655	1998	100	2098	1,060	42,400	83	1,051	-
May Street	1107	15	200	PVC2	43,449	1998	100	2098	1,060	15,900	83	394	-
May Street	1108	52	200	PVC2	81,208	1998	100	2098	1,060	55,120	83	1,367	-
Fountain Street	1109	51	200	PVC2	11,897	1998	100	2098	1,060	54,060	83	1,340	-
Ridge Road	1110	63	250	PVC2	32,328	1999	100	2099	1,060	66,250	84	1,635	-
Ridge Road	1111	45	200	PVC2	23,276	1999	100	2099	1,060	47,700	84	1,177	-
Ridge Road	1112	34	200	PVC2	17,586	1999	100	2099	1,060	36,040	84	889	-
Ridge Road	1113	57	200	PVC2	29,483	1999	100	2099	1,060	60,420	84	1,491	-
Ridge Road	1114	15	200	PVC2	7,759	1999	100	2099	1,060	15,900	84	392	-
Jollife Avenue	1115	20	200	PVC2	10,345	1999	100	2099	1,060	21,200	84	523	-
Jollife Avenue	1116	40	200	PVC2	20,690	1999	100	2099	1,060	42,400	84	1,046	-
Jollife Avenue	1117	55	200	PVC2	28,449	1999	100	2099	1,060	58,300	84	1,439	-
Jollife Avenue	1118	90	200	PVC2	46,552	1999	100	2099	1,060	95,400	84	2,354	-
Jollife Avenue	1119	37	200	PVC2	19,138	1999	100	2099	1,060	39,220	84	968	-
Jollife Avenue	1120	99	200	PVC2	51,208	1999	100	2099	1,060	104,940	84	2,589	-
Parkview Lane	1121	47	200	PVC2	24,052	1999	100	2099	1,060	49,290	84	1,216	-
Parkview Lane	1122	45	200	PVC2	23,018	1999	100	2099	1,060	47,170	84	1,164	-
Parkview Lane	1123	47	200	PVC2	24,311	1999	100	2099	1,060	49,820	84	1,229	-
Parkview Lane	1124	46	200	PVC2	23,793	1999	100	2099	1,060	48,760	84	1,203	-
Academy Place	1125	70	200	PVC2	36,207	1999	100	2099	1,060	74,200	84	1,831	-
Academy Place	1126	47	200	PVC2	24,311	1999	100	2099	1,060	49,820	84	1,229	-
Dunbar Street	1127	24	200	PVC2	12,155	1999	100	2099	1,060	24,910	84	615	-
Dunbar Street	1128	78	200	PVC2	40,345	1999	100	2099	1,060	82,680	84	2,040	-
Dunbar Street	1129	43	200	PVC2	21,983	1999	100	2099	1,060	45,050	84	1,112	-
Riverwalk Place	1130	43	200	PVC2	22,242	1999	100	2099	1,060	45,580	84	1,125	-
Riverwalk Place	1131	13	200	PVC2	6,724	1999	100	2099	1,060	13,780	84	340	-
Riverwalk Place	1132	40	200	PVC2	20,690	1999	100	2099	1,060	42,400	84	1,046	-
Riverwalk Place	1133	32	200	PVC2	16,552	1999	100	2099	1,060	33,920	84	837	-
Riverwalk Place	1134	13	200	PVC2	6,724	1999	100	2099	1,060	13,780	84	340	-
Riverwalk Place	1135	16	200	PVC2	8,276	1999	100	2099	1,060	16,960	84	419	-
Riverwalk Place	1136	67	200	PVC2	34,656	1999	100	2099	1,060	71,020	84	1,752	-
Riverwalk Place	1137	9	200	PVC2	4,655	1999	100	2099	1,060	9,540	84	235	-

Appendix D-3 (Cont.)
Guelph/Eramosa
Sanitary Sewers - Rockwood

Street	Asset ID	Length (m)	Diameter (mm)	Material	Historical Cost	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Riverwalk Place	1138	9	200	PVC2	4,655	1999	100	2099	1,060	9,540	84	235	-
Riverwalk Place	1139	56	200	PVC2	28,966	1999	100	2099	1,060	59,360	84	1,465	-
Riverwalk Place	1140	24	200	PVC2	12,414	1999	100	2099	1,060	25,440	84	628	-
Riverwalk Place	1141	30	200	PVC2	15,259	1999	100	2099	1,060	31,270	84	772	-
Riverwalk Place	1142	25	200	PVC2	12,931	1999	100	2099	1,060	26,500	84	654	-
Riverwalk Place	1143	41	200	PVC2	21,207	1999	100	2099	1,060	43,460	84	1,072	-
Dundar Street	1144	272	200	PVC2	158,145	2001	100	2101	1,060	288,108	86	7,045	-
Dundar Street	1145	113	200	PVC2	69,084	2003	100	2103	1,060	119,250	88	2,891	-
Ridge Road	1146	217	200	PVC2	125,969	2001	100	2101	1,060	229,490	86	5,612	-
Ridge Road	1147	276	200	PVC2	169,486	2003	100	2103	1,060	292,560	88	7,093	-
Ridge Road	1148	131	200	PVC2	85,412	2004	100	2104	1,060	138,330	89	3,340	-
Old Maple Boulevard	1149	120	200	PVC2	69,821	2001	100	2101	1,060	127,200	86	3,111	-
Old Maple Boulevard	1150	195	200	PVC2	119,745	2003	100	2103	1,060	206,700	88	5,011	-
Scots Lane	1151	124	200	PVC2	72,381	2001	100	2101	1,060	131,864	86	3,225	-
Scots Lane	1152	56	200	PVC2	34,388	2003	100	2103	1,060	59,360	88	1,439	-
Milne Place	1153	309	200	PVC2	202,501	2004	100	2104	1,060	327,964	89	7,918	-
Jolliffe Avenue	1154	37	200	PVC2	24,413	2004	100	2104	1,060	39,538	89	955	-
MacLennan Street	1155	388	200	PVC2	253,683	2004	100	2104	1,060	410,856	89	9,920	-
Parkinson Drive	1156	340	200	PVC2	222,660	2004	100	2104	1,060	360,612	89	8,707	-
Hayward Court	1157	207	200	PVC2	135,350	2004	100	2104	1,060	219,208	89	5,292	-
May Street	1158	252	200	PVC2	164,933	2004	100	2104	1,060	267,120	89	6,449	-
Gamble Lane	1159	232	200	PVC2	152,105	2004	100	2104	1,060	246,344	89	5,948	-
Wheeler Court	1160	154	200	PVC2	100,465	2004	100	2104	1,060	162,710	89	3,928	-
Fountain Street	1161	83	200	PVC2	54,520	2004	100	2104	1,060	88,298	89	2,132	-
Jolliffe Avenue	1162	10	200	PVC2	7,353	2006	100	2106	1,060	10,600	91	254	-
Jolliffe Avenue	1163	36	200	PVC2	26,472	2006	100	2106	1,060	38,160	91	914	-
Jolliffe Avenue	1164	56	200	PVC2	41,178	2006	100	2106	1,060	59,360	91	1,422	-
Jolliffe Avenue	1165	32	200	PVC2	23,163	2006	100	2106	1,060	33,390	91	800	-
Jolliffe Avenue	1166	18	200	PVC2	13,236	2006	100	2106	1,060	19,080	91	457	-
Jolliffe Avenue	1167	66	200	PVC2	48,164	2006	100	2106	1,060	69,430	91	1,663	-
Jolliffe Avenue	1168	23	200	PVC2	16,912	2006	100	2106	1,060	24,380	91	584	-
Jolliffe Avenue	1169	106	200	PVC2	77,945	2006	100	2106	1,060	112,360	91	2,691	-
Ridge Top Crescent	1170	87	200	PVC2	63,973	2006	100	2106	1,060	92,220	91	2,209	-
Ridge Top Crescent	1171	200	200	PVC2	147,065	2006	100	2106	1,060	212,000	91	5,078	-
Ridge Top Crescent	1172	42	200	PVC2	30,884	2006	100	2106	1,060	44,520	91	1,066	-
Ridge Top Crescent	1173	175	200	PVC2	128,682	2006	100	2106	1,060	185,500	91	4,443	-
Hampson Crescent	1174	83	200	PVC2	60,664	2006	100	2106	1,060	87,450	91	2,095	-
Hampson Crescent	1175	178	200	PVC2	130,888	2006	100	2106	1,060	188,680	91	4,519	-
Easement Through Block 42 To Main Street	1179	80	200	PVC2	58,826	2006	100	2106	1,060	84,800	91	2,031	-
Millview Court	1180	183	200	PVC2	143,634	2007	100	2107	1,060	193,980	92	4,628	-
Millview Court (Sewer Easement)	1181	45	200	PVC2	35,320	2007	100	2107	1,060	47,700	92	1,138	-
Gravity Sewer To Guelph	1183	7,000	200	PVC	1,570,259	1975	60	2035	1,060	7,420,000	20	453,783	-
Total		28,077			10,783,010					29,761,583		1,111,950	744,394

Appendix D-4
Guelph/Eramosa
Wastewater- Rockwood Forcemains

<i>Street</i>	<i>Asset ID</i>	<i>Length (m)</i>	<i>Diameter (mm)</i>	<i>Material</i>	<i>Year Installed</i>	<i>Historical Cost</i>	<i>Estimated Life</i>	<i>Replace ment Year</i>	<i>Total Main Replacement Costs</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
Main Street Forcemain*	1189	408.7	150	PE	1975	50,833	50	2025				
Ridge Road Forcemain	New Add	157.0	138	PE	1999	101,018	61	2060	180,000	45	6,104	-
Lou's Blvd. Forcemain	1190	290.0	100	PE	1989	86,602	50	2039	200,000	24	10,574	-
Valley Road Forcemain	1191	1,350.0	150	PE	1999	454,699	40	2039	800,000	24	42,297	-
MacLennan Forcemain	2555	498.5	150	PE	2010	279,160	50	2060	330,000	45	11,190	-
Total		2,704.2				972,312			1,510,000		70,165	0

*This forcemain is obsolete and will not be replaced in the future

**Appendix D-5
Guelph/Eramosa
Sanitary Sewers Manholes**

<i>Asset ID</i>	<i>No. of Manholes</i>	<i>Location</i>	<i>Year Installed</i>	<i>Historical Cost per Unit</i>	<i>Historical Cost</i>	<i>Estimated Life</i>	<i>Replacement Year</i>	<i>Main Replacement Costs per unit</i>	<i>Total Main Replacement Costs</i>	<i>Years until Replacement</i>	<i>Annual Lifecycle Contribution</i>	<i>Amount to be included in 10 year Forecast</i>
1923	102	Various	1976	648	66,053	60	2036	4,000	408,000	21	23,984	-
1923	8	Harris St.	1976	648	5,181	42	2018	4,000	32,000	3	in capital budget	32,000
1923	17	Various	1985	648	11,009	60	2045	4,000	68,000	30	3,036	-
1923	5	Various	1987	648	3,238	60	2047	4,000	20,000	32	852	-
1923	12	Various	1989	648	7,771	60	2049	4,000	48,000	34	1,959	-
1937	20	Various	1990	1,640	32,800	60	2050	4,000	80,000	35	3,200	-
1937	21	Various	1992	1,640	34,440	60	2052	4,000	84,000	37	3,235	-
1937	9	Various	1998	1,640	14,760	60	2058	4,000	36,000	43	1,256	-
1937	38	Various	1999	1,640	62,320	60	2059	4,000	152,000	44	5,227	-
1937	12	Various	2001	1,640	19,680	60	2061	4,000	48,000	46	1,606	-
1937	10	Various	2003	1,640	16,400	60	2063	4,000	40,000	48	1,304	-
1951	39	Various	2004	2,283	89,042	60	2064	4,000	156,000	49	5,024	-
1951	22	Various	2006	2,283	50,229	60	2066	4,000	88,000	51	2,768	-
1951	8	Various	2007	2,283	18,265	60	2067	4,000	32,000	52	995	-
Total	323							56,000	1,292,000		54,447	32,000

Appendix E – Rockwood System Detailed Capital Water Rate Calculations

**Appendix E-1
Guelph/Eramosa
Water Service
Capital Budget Forecast - Rockwood
Inflated \$**

Description	Budget 2015	Total	Forecast									
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Capital Expenditures												
Chlorine Pump - spare	-	3,000	3,000	-	-	-	-	-	-	-	-	-
Hydrant Mounted PRV	-	2,000	2,000	-	-	-	-	-	-	-	-	-
Small Dump Trailer	-	9,000	-	9,000	-	-	-	-	-	-	-	-
Valley Road - Richardson Watermain Connection	-	403,000	-	-	-	403,000	-	-	-	-	-	-
Lifecycle:												
Facilities:												
Station Street Well #1 & #2 - Replace Well Pumps	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Station Street Well #1 & #2 - Replace Well Piping	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Station Street Well #1 & #2 - Air lift well	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Station Street Pumphouse - Replace existing unit heaters	2,000	-	-	-	-	-	-	-	-	-	-	-
Station Street Pumphouse - Replace Chlorine analyzer	-	4,000	4,000	-	-	-	-	-	-	-	-	-
Station Street Pumphouse - Replace pressure regulating valves	-	12,000	12,000	-	-	-	-	-	-	-	-	-
Station Street Pumphouse - Replace turbidity Analyzer	-	5,000	-	-	-	5,000	-	-	-	-	-	-
Station Street Pumphouse - Replace flow meters	-	12,000	-	-	-	-	-	-	12,000	-	-	-
Station Street Pumphouse - Replace chlorine pumps	-	10,000	-	-	-	-	-	-	-	-	-	10,000
Bernardi Well #3 - Replace Well Pumps	-	12,000	-	-	-	12,000	-	-	-	-	-	-
Bernardi Well #3 - Replace Well Piping	-	7,000	-	-	-	-	-	-	-	7,000	-	-
Bernardi Well #3 - Air lift well	-	7,000	-	-	-	-	-	-	-	7,000	-	-
Bernardi Pumphouse - Replace Chlorine Analyzer	-	4,000	-	-	4,000	-	-	-	-	-	-	-
Bernardi Pumphouse - Replace Pressure Regulator Valve	-	11,000	-	-	-	-	11,000	-	-	-	-	-
Bernardi Pumphouse - Replace Chlorine Feed	-	23,000	-	-	-	-	-	-	23,000	-	-	-
Bernardi Pumphouse - Replace Roof	-	17,000	-	-	-	-	-	17,000	-	-	-	-
Bernardi Pumphouse - Replace Pumps	-	11,000	-	-	-	-	-	11,000	-	-	-	-
Booster Pump Station - Roof	-	23,000	-	-	-	-	-	-	-	23,000	-	-
Booster Pump Station - Pumps	-	18,000	-	-	-	-	18,000	-	-	-	-	-
Booster Pump Station - Chemical Feed	-	52,000	-	-	-	-	-	-	-	52,000	-	-
Booster Pump Station - Controls	-	107,000	-	-	-	-	-	-	-	107,000	-	-
Water Meters	12,000	127,000	13,000	13,000	13,000	8,000	12,000	12,000	12,000	14,000	15,000	15,000
Water Vehcles	-	37,000	-	-	-	24,000	13,000	-	-	-	-	-
Rockwood Hydrants	-	241,000	-	-	-	-	-	-	-	-	-	241,000
Rockwood Watermains - Harris	-	318,000	-	-	318,000	-	-	-	-	-	-	-
Studies:												
Rate Study	11,491	27,000	-	-	-	-	13,000	-	-	-	-	14,000
Financial Plan	6,380	15,000	-	-	-	-	7,000	-	-	-	-	8,000
SCADA Study	-	34,000	11,000	-	-	-	11,000	-	-	-	12,000	-
Growth Related:												
Development of New Well (Seaton)	119,000	-	-	-	-	-	-	-	-	-	-	-
Construction of new Pumping Station (Seaton)	67,000	1,046,000	850,000	102,000	94,000	-	-	-	-	-	-	-
New Operational Space	-	249,000	35,000	214,000	-	-	-	-	-	-	-	-
Pick up Truck	-	29,000	29,000	-	-	-	-	-	-	-	-	-
Work Truck	-	33,000	-	-	-	33,000	-	-	-	-	-	-
Station St. Standby Power	151,000	-	-	-	-	-	-	-	-	-	-	-
Payment of Credits	232,666	-	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	601,538	2,977,000	959,000	338,000	429,000	485,000	85,000	40,000	116,000	210,000	27,000	288,000

Appendix E-1 (Cont.)
Guelph/Eramosa
Water Service
Capital Budget Forecast - Rockwood
 Inflated \$

Description	Budget 2015	Total	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Capital Financing													
Provincial/Federal Grants		-											
Development Charges Reserve Fund	337,000	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	1,232,500	896,500	209,000	94,000	33,000	-	-	-	-	-	-	-
Lifecycle Reserve Fund	14,000	1,265,500	51,500	129,000	335,000	49,000	54,000	40,000	116,000	210,000	15,000	266,000	
Water Reserve	250,538	479,000	11,000	-	-	403,000	31,000	-	-	-	12,000	22,000	
Total Capital Financing	601,538	2,977,000	959,000	338,000	429,000	485,000	85,000	40,000	116,000	210,000	27,000	288,000	

Appendix E-2
Guelph/Eramosa
Water Service
Schedule of Non-Growth Related Debenture Repayments - Rockwood
 Inflated \$

Debenture Year	2015	Principal (Inflated)	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
2016		-		-	-	-	-	-	-	-	-	-	-
2017		-		-	-	-	-	-	-	-	-	-	-
2018		-		-	-	-	-	-	-	-	-	-	-
2019		-		-	-	-	-	-	-	-	-	-	-
2020		-		-	-	-	-	-	-	-	-	-	-
2021		-		-	-	-	-	-	-	-	-	-	-
2022		-		-	-	-	-	-	-	-	-	-	-
2023		-		-	-	-	-	-	-	-	-	-	-
2024		-		-	-	-	-	-	-	-	-	-	-
2025		-		-	-	-	-	-	-	-	-	-	-
Total Annual Debt Charges		-		-	-	-	-	-	-	-	-	-	-

Appendix E-3
Guelph/Eramosa
Water Service
Schedule of Growth Related Debenture Repayments - Rockwood
 Inflated \$

Debenture Year	2015	Principal (Inflated)	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
2016		896,500		110,530	110,530	110,530	110,530	110,530	110,530	110,530	110,530	110,530	110,530
2017		209,000			25,768	25,768	25,768	25,768	25,768	25,768	25,768	25,768	25,768
2018		94,000				11,589	11,589	11,589	11,589	11,589	11,589	11,589	11,589
2019		33,000					4,069	4,069	4,069	4,069	4,069	4,069	4,069
2020		-						-	-	-	-	-	-
2021		-							-	-	-	-	-
2022		-								-	-	-	-
2023		-									-	-	-
2024		-										-	-
2025		-											-
Total Annual Debt Charges	-	1,232,500	-	110,530	136,298	147,887	151,956	151,956	151,956	151,956	151,956	151,956	151,956

Appendix E-4
Guelph/Eramosa
Water Service
Capital Water Reserve Fund Continuity - 01-0000-2815 - Rockwood
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	310,962	71,833	133,450	207,519	288,169	(35,528)	13,742	24,217	34,901	45,799	44,675
Transfer from Operating	10,000	70,000	70,000	75,000	80,000	80,000	10,000	10,000	10,000	10,000	10,000
Transfer to Capital	250,538	11,000	-	-	403,000	31,000	-	-	-	12,000	22,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	70,424	130,833	203,450	282,519	(34,831)	13,472	23,742	34,217	44,901	43,799	32,675
Interest	1,408	2,617	4,069	5,650	(697)	269	475	684	898	876	653

Appendix E-5
Guelph/Eramosa
Water Service
Rockwood Water Development Charges Reserve Fund Continuity - 01-0000-2816
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	(158,416)	(448,009)	(380,068)	(405,915)	(456,660)	(518,308)	(583,373)	(647,741)	(698,402)	(747,542)	(795,277)
Development Charge Proceeds	56,191	75,393	92,643	94,507	96,403	98,330	100,289	114,989	117,474	119,815	136,644
Transfer to Capital	104,334	-	-	-	-	-	-	-	-	-	-
Transfer to Capital - Payment of Credits	232,666	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Related Operating	-	-	110,530	136,298	147,887	151,956	151,956	151,956	151,956	151,956	151,956
Closing Balance	(439,225)	(372,616)	(397,956)	(447,706)	(508,145)	(571,934)	(635,040)	(684,708)	(732,885)	(779,683)	(810,589)
Interest	(8,784)	(7,452)	(7,959)	(8,954)	(10,163)	(11,439)	(12,701)	(13,694)	(14,658)	(15,594)	(16,212)
Required from Development Charges	337,000	896,500	209,000	94,000	33,000	-	-	-	-	-	-

Appendix E-6
Guelph/Eramosa
Water Service
Rockwood Water Lifecycle Reserve Fund Continuity - 01-0000-2876
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	758,891	906,174	871,952	815,850	547,945	565,946	583,994	693,018	795,760	759,045	928,763
Transfer from Operating	90,910	181	4,295	3,745	3,299	7,992	82,830	150,534	158,401	166,507	175,049
Loan Repayment from Operating Reserve	-	-	52,605	52,605	52,605	52,605	52,605	52,605	-	-	-
Transfer to Capital	14,000	51,500	129,000	335,000	49,000	54,000	40,000	116,000	210,000	15,000	266,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	888,406	854,855	799,853	537,201	554,849	572,543	679,429	780,157	744,162	910,552	837,812
Interest	17,768	17,097	15,997	10,744	11,097	11,451	13,589	15,603	14,883	18,211	16,756

Appendix E-7
Guelph/Eramosa
Water Service
Capital Related Operating Budget Forecast - Rockwood
 Inflated \$

Description	Budget 2015	Forecast										
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Expenditures												
Capital-Related												
Existing Debt (Principal) - Growth Related												
Existing Debt (Interest) - Growth Related												
New Growth Related Debt (Principal)			-	74,670	95,065	106,697	113,713	118,262	122,992	127,912	133,029	138,350
New Growth Related Debt (Interest)			-	35,860	41,233	41,191	38,243	33,694	28,964	24,044	18,928	13,606
Existing Debt (Principal) - Non-Growth Related (Seaton)	43,128	43,128	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 (Seaton)	-	-	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Principal)			-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)			-	-	-	-	-	-	-	-	-	-
Transfer to Lifecycle Reserve Fund - Rockwood	90,910	181	4,295	3,745	3,299	7,992	82,830	150,534	158,401	166,507	175,049	
Transfer to Capital Reserve - Rockwood	10,000	70,000	70,000	75,000	80,000	80,000	10,000	10,000	10,000	10,000	10,000	
Total Expenditures	144,038	113,309	227,954	258,171	274,314	283,077	287,914	355,618	363,485	371,591	380,133	
Revenues												
Base Charge - Rockwood	83,059	50,190	52,020	53,997	56,032	58,127	60,283	125,139	129,985	134,975	140,256	
Transfer from DC Reserve Fund	-	-	110,530	136,298	147,887	151,956	151,956	151,956	151,956	151,956	151,956	
Total Operating Revenue	83,059	50,190	162,550	190,295	203,919	210,083	212,239	277,095	281,941	286,931	292,212	
Rockwood Water Capital Billing Recovery - Total	60,979	63,119	65,403	67,876	70,395	72,994	75,675	78,523	81,544	84,659	87,921	

Appendix E-8
Guelph/Eramosa
Water Service
Water Volume Rate Forecast - Rockwood
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	60,979	63,119	65,403	67,876	70,395	72,994	75,675	78,523	81,544	84,659	87,921
Total Rockwood Metered Volume (m ³)	320,941	325,691	330,821	336,521	342,221	347,921	353,621	359,701	366,161	372,621	379,461
Constant Metered Volume Rate	0.19	0.19	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.23	0.23
Annual Percentage Change		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

Appendix F – Hamilton Drive System Detailed Capital Water Rate Calculations

Appendix F-1
Guelph/Eramosa
Water Service
Capital Budget Forecast - Hamilton Drive
 Inflated \$

Description	Budget 2015	Total	Forecast											
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025		
Capital Expenditures														
Lifecycle:														
Hamilton Dr Standpipe Maintenance - Seal & anode replacement & cleaning	-	65,000	65,000	-	-	-	-	-	-	-	-	-	-	-
Standpipe/Cross Creek Well #3 - Replace Electrical Panel	-	10,000	10,000	-	-	-	-	-	-	-	-	-	-	-
Standpipe/Cross Creek Well #3 - Replace Chlorine Analyzer	-	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
Standpipe/Cross Creek Well #3 - Replace piping	-	47,800	-	-	-	-	-	-	-	-	-	-	-	47,800
Cross Creek Well #3 - Replace Well Pump	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Cross Creek Well #3 - Replace Well Piping	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Cross Creek Well #3 - Air lift well	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Cross Creek Pumphouse - replace electrical panel	-	8,200	-	8,200	-	-	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace chlorine pumps	-	6,100	-	6,100	-	-	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace hypo pump controller	-	4,700	-	-	4,700	-	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace Pressure Regulator Valve	-	8,500	-	-	-	8,500	-	-	-	-	-	-	-	-
Cross Creek Pumphouse - replace High Lift Pumps	-	13,800	-	-	-	-	-	-	-	-	13,800	-	-	-
Cross Creek Pumphouse - replace Flow Meters	-	11,500	-	-	-	-	-	-	-	-	11,500	-	-	-
Cross Creek Pumphouse - replace Piping	-	12,000	-	-	-	-	-	-	-	-	-	-	-	12,000
Huntington Well #2 - replace well pump	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Huntington Well #2 - replace well piping	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Huntington Well #2 - air lift & clean during pump/piping replacement	-	6,900	-	-	-	-	-	-	-	-	6,900	-	-	-
Huntington Drive Pumphouse - replace electrical panel	8,000	-	-	-	-	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - back up power generator	-	61,200	-	61,200	-	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace chlorine pumps	-	3,100	-	3,100	-	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace chlorine analyzer	-	3,100	-	-	3,100	-	-	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace pressure regulator valve	-	8,700	-	-	-	-	8,700	-	-	-	-	-	-	-
Huntington Drive Pumphouse - replace high lift pumps	-	13,800	-	-	-	-	-	-	-	-	13,800	-	-	-
Huntington Drive Pumphouse - replace flow meters	-	10,500	-	-	-	-	-	-	-	-	-	10,500	-	-
Huntington Drive Pumphouse - replace piping	-	12,000	-	-	-	-	-	-	-	-	-	-	-	12,000
Watermains	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hydrants	-	24,200	-	-	-	24,200	-	-	-	-	-	-	-	-
SCADA Communciation Upgrade	12,500	-	-	-	-	-	-	-	-	-	-	-	-	-
SCADA Control Upgrade	-	16,200	-	-	7,800	-	-	-	8,400	-	-	-	-	-
Meter Replacement	5,000	6,700	-	-	-	-	-	-	1,600	1,700	1,700	1,700	1,700	-

Appendix F-1 (Cont.)
Guelph/Eramosa
Water Service
Capital Budget Forecast - Hamilton Drive
 Inflated \$

Description	Budget 2015	Total	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Studies:													
Rate Study	1,518	3,000	-	-	-	-	1,500	-	-	-	-	-	1,500
Financial Plan	840	1,800	-	-	-	-	900	-	-	-	-	-	900
SCADA Study	-	34,200	10,500	-	-	-	11,400	-	-	-	-	12,300	-
Total Capital Expenditures	27,858	430,600	85,500	78,600	18,700	32,700	22,500	-	10,000	82,200	24,500	75,900	-
Capital Financing													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Hamilton Drive Water Lifecycle Reserve Fund	25,500	366,100	49,500	78,600	18,700	32,700	8,700	-	10,000	82,200	12,200	73,500	-
Hamilton Drive Water Capital Reserve Fund	2,358	64,500	36,000	-	-	-	13,800	-	-	-	12,300	2,400	-
Total Capital Financing	27,858	430,600	85,500	78,600	18,700	32,700	22,500	-	10,000	82,200	24,500	75,900	-

Appendix F-2
Guelph/Eramosa
Water Service
Schedule of Non-Growth Related Debenture Repayments - Hamilton Drive
 Inflated \$

Debenture Year	2015	Principal (Inflated)	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
2016		-		-	-	-	-	-	-	-	-	-	-
2017		-			-	-	-	-	-	-	-	-	-
2018		-				-	-	-	-	-	-	-	-
2019		-					-	-	-	-	-	-	-
2020		-						-	-	-	-	-	-
2021		-							-	-	-	-	-
2022		-								-	-	-	-
2023		-									-	-	-
2024		-										-	-
2025		-											-
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix F-3
Guelph/Eramosa
Water Service
Hamilton Drive Water Capital Reserve Funds Continuity - 01-0000-2806
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	38,633	42,100	11,323	16,649	22,082	27,624	19,200	24,684	30,278	35,983	29,257
Transfer from Operating	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Transfer to Capital	2,358	36,000	-	-	-	13,800	-	-	-	12,300	2,400
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	41,275	11,100	16,323	21,649	27,082	18,824	24,200	29,684	35,278	28,683	31,857
Interest	825	222	326	433	542	376	484	594	706	574	637

Appendix F-4
Guelph/Eramosa
Water Service
Hamilton Drive Water Lifecycle Reserve Fund Continuity - 01-0000-2808
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	15,737	31,911	23,033	(1,688)	39,224	72,233	136,228	216,488	297,334	298,328	372,421
Transfer from Operating	40,867	40,170	44,629	49,559	55,010	60,741	66,732	75,732	77,345	78,990	80,668
Loan Repayment from Operating Reserve	-	-	9,283	9,283	9,283	9,283	9,283	9,283	-	-	-
Transfer to Capital	25,500	49,500	78,600	18,700	32,700	8,700	-	10,000	82,200	12,200	73,500
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	31,104	22,582	(1,655)	38,455	70,817	133,557	212,244	291,504	292,479	365,118	379,588
Interest	808	452	(33)	769	1,416	2,671	4,245	5,830	5,850	7,302	7,592

Appendix F-5
Guelph/Eramosa
Water Services
Hamilton Drive Capital Related Operating Budget Forecast
 Inflated \$

Description	Budget 2015	Forecast									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Expenditures											
<u>Capital Related</u>											
Hamilton Drive Water Lifecycle	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Sub Total Capital Related	40,867	40,170	44,629	49,559	55,010	60,741	66,732	75,732	77,345	78,990	80,668
	45,867	45,170	49,629	54,559	60,010	65,741	71,732	80,732	82,345	83,990	85,668
Revenues											
Base Charge - Hamilton Drive	10,886	6,510	6,701	6,898	7,099	7,274	7,419	15,136	15,438	15,747	16,062
Total Base Charge Revenue	10,886	6,510	6,701	6,898	7,099	7,274	7,419	15,136	15,438	15,747	16,062
Hamilton Dr Water Capital Billing Recovery - Total	34,980	38,660	42,927	47,661	52,910	58,467	64,313	65,596	66,907	68,243	69,606

Appendix F-6
Guelph/Eramosa
Water Services
Hamilton Drive Capital - Water Volume Rate Forecast
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	34,980	38,660	42,927	47,661	52,910	58,467	64,313	65,596	66,907	68,243	69,606
Total Hamilton Drive Metered Volume (m3)	50,696	50,936	51,416	51,896	52,376	52,616	52,616	52,616	52,616	52,616	52,616
Constant Rate	0.69	0.76	0.83	0.92	1.01	1.11	1.22	1.25	1.27	1.30	1.32
Annual Percentage Change		10%	10%	10%	10%	10%	10%	2%	2%	2%	2%

Appendix G – Rockwood and Hamilton Drive Combined Water Systems Detailed Operating Water Rate Calculations

Appendix G-1
Guelph/Eramosa
Water Service
Water Operating Reserve Continuity- Rockwood and Hamilton Drive Combined
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	(28,152)	(89,074)	26,673	20,351	39,907	76,800	156,816	282,931	389,628	611,361	890,239
Transfer from Operating	86,778	115,747	55,566	81,445	98,781	141,905	188,004	168,586	221,733	278,878	341,577
Loan Repayment - Rockwood Lifecycle Reserve			52,605	52,605	52,605	52,605	52,605	52,605			
Loan Repayment - Hamilton Drive Lifecycle Reserve			9,283	9,283	9,283	9,283	9,283	9,283			
Transfer to Operating	147,700										
Closing Balance	(89,074)	26,673	20,351	39,907	76,800	156,816	282,931	389,628	611,361	890,239	1,231,816

Appendix G-2
Guelph/Eramosa
Water Services
Rockwood and Hamilton Drive Combined Operating Budget Forecast
Inflated \$

Description	Budget 2015	Forecast										
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Expenditures												
Operating Costs												
Advertising	750	765	780	796	812	828	845	862	879	897	915	
Communications	7,000	7,640	10,500	10,710	10,924	11,143	11,366	11,593	11,825	12,062	12,303	
Conservation Initiatives	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219	
Fees - Audit	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390	2,438	
Fees - Engineering	30,000	33,000	33,660	34,333	35,020	35,720	36,435	37,164	37,907	38,665	39,438	
Fees - Legal	500	510	520	531	541	552	563	574	585	597	609	
Fleet	16,000	19,000	19,380	19,768	20,163	20,566	20,978	21,398	21,826	22,263	22,708	
Grounds Maintenance	2,600	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	
Hydro	67,000	73,340	94,807	96,703	98,637	100,610	102,622	104,674	106,767	108,902	111,080	
Natural Gas	-	800	3,400	3,468	3,537	3,608	3,680	3,754	3,829	3,906	3,984	
Insurance	30,782	32,900	34,558	35,249	35,954	36,673	37,407	38,155	38,918	39,696	40,490	
Licenses	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219	
Locates	500	510	520	531	541	552	563	574	585	597	609	
Memberships and Dues	1,200	1,224	1,500	1,530	1,561	1,592	1,624	1,656	1,689	1,723	1,757	
Meter Repairs	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219	
Contracted Services	35,000	36,700	38,434	40,203	42,007	43,847	45,601	47,425	49,322	51,295	53,347	
Postage & Shipping	12,000	12,740	13,500	14,000	14,500	15,000	15,300	15,606	15,918	16,236	16,561	
Repairs & Maint - Buildings	2,500	2,800	3,500	3,570	3,641	3,714	3,789	3,865	3,942	4,021	4,101	
Repairs & Maint - Equipment	20,000	25,000	30,000	30,600	31,212	31,836	32,473	33,122	33,784	34,460	35,149	
Repairs & Maint - Water Mains	28,000	28,560	29,131	29,714	30,308	30,914	31,533	32,164	32,807	33,463	34,132	
Safety	3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	3,657	
Salaries and Wages	278,200	290,496	349,500	376,490	414,220	422,504	430,954	439,573	448,364	457,331	466,478	
Salaries Benefits	83,460	87,149	104,850	112,947	124,266	126,751	129,286	131,872	134,509	137,199	139,943	
Seminars & Training	8,000	10,000	12,000	12,240	12,485	12,734	12,989	13,249	13,514	13,784	14,060	
Supplies and Services	47,000	51,500	56,500	57,630	58,783	59,958	61,157	62,380	63,628	64,901	66,199	
Telephone	4,000	4,500	5,300	5,406	5,514	5,624	5,737	5,852	5,969	6,088	6,210	
Uniforms	2,100	2,142	2,685	2,739	2,793	2,849	2,906	2,964	3,023	3,083	3,145	
Water Meter Stock	4,000	4,080	4,162	4,245	4,330	4,416	4,505	4,595	4,687	4,781	4,877	
Transfers to Reserves	86,778	115,747	55,566	81,445	98,781	141,905	188,004	168,586	221,733	278,878	341,577	
Service Agreements	-	3,000	3,060	3,121	3,183	3,247	3,312	3,378	3,446	3,515	3,585	
Overhead Costs	25,481	15,000	15,300	15,606	15,918	16,236	16,561	16,892	17,230	17,575	17,927	
Total Expenditures	800,851	870,262	934,497	1,005,185	1,081,475	1,145,463	1,212,510	1,214,495	1,289,506	1,368,993	1,454,521	
Revenues												
Base Charge	-	170,100	176,164	182,684	189,394	196,202	203,107	140,275	145,424	150,722	156,318	
Penalty and Interest	7,068	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	
Miscellaneous Revenue	13,700	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	
Grant Funding - Operational	-	-	-	-	-	-	-	-	-	-	-	
Water Meters	8,000	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	
Tax Revenue - Frontage Charges	-	-	-	-	-	-	-	-	-	-	-	
Contributions from Operating Reserves / Reserve Funds	147,700	-	-	-	-	-	-	-	-	-	-	
Total Operating Revenue	176,468	193,200	199,264	205,784	212,494	219,302	226,207	163,375	168,524	173,822	179,418	
Total Water Billing Recovery - Operating	624,383	677,062	735,233	799,401	868,982	926,162	986,303	1,051,120	1,120,982	1,195,171	1,275,102	

Note that the Base Charge Revenue in 2015 is applied 100% against capital not operating

Appendix G-3
Guelph/Eramosa
Water Services
Water Metered Volume - Rockwood and Hamilton Drive Combined
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Rockwood Metered Volume (m ³)	320,941	325,691	330,821	336,521	342,221	347,921	353,621	359,701	366,161	372,621	379,461
Hamilton Drive Metered Volume (m ³)	50,696	50,936	51,416	51,896	52,376	52,616	52,616	52,616	52,616	52,616	52,616
Total Metered Volume (m³)	371,637	376,627	382,237	388,417	394,597	400,537	406,237	412,317	418,777	425,237	432,077

Appendix G-4
Guelph/Eramosa
Water Services
Rockwood and Hamilton Drive (Combined) Water Volume Rate Forecast - Operating
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	624,383	677,062	735,233	799,401	868,982	926,162	986,303	1,051,120	1,120,982	1,195,171	1,275,102
Total Metered Volume (m ³)	371,637	376,627	382,237	388,417	394,597	400,537	406,237	412,317	418,777	425,237	432,077
Constant Rate	1.68	1.80	1.92	2.06	2.20	2.31	2.43	2.55	2.68	2.81	2.95
Annual Percentage Change		7%	7%	7%	7%	5%	5%	5%	5%	5%	5%

Appendix H – Gazer Mooney Water and Wastewater Rate Calculations

Appendix H-1
Guelph/Eramosa
Gazer-Mooney Water & Wastewater Services
Capital Budget Forecast
 Inflated \$

Description	Budget 2015	Total	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Capital Expenditures													
Lifecycle:		-											
Watermains	-	-	-	-	-	-	-	-	-	-	-	-	-
Forcemains	-	-	-	-	-	-	-	-	-	-	-	-	-
Sanitary Sewers	-	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Facilities	-	159,500	-	-	-	-	13,200	-	-	-	-	-	146,300
Studies:													
Rate Study	500	960					500						460
Water Financial Plan	280	540					280						260
Total Capital Expenditures	780	161,000	-	-	-	-	13,980	-	-	-	-	-	147,020
Capital Financing													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Gazer-Mooney Lifecycle Reserve Fund	780	161,000	-	-	-	-	13,980	-	-	-	-	-	147,020
Total Capital Financing	780	161,000	-	-	-	-	13,980	-	-	-	-	-	147,020

Appendix H-2
Guelph/Eramosa
Gazer-Mooney Water & Wastewater Services
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2015	Principal (Inflated)	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
2016		-		-	-	-	-	-	-	-	-	-	-
2017		-		-	-	-	-	-	-	-	-	-	-
2018		-		-	-	-	-	-	-	-	-	-	-
2019		-		-	-	-	-	-	-	-	-	-	-
2020		-		-	-	-	-	-	-	-	-	-	-
2021		-		-	-	-	-	-	-	-	-	-	-
2022		-		-	-	-	-	-	-	-	-	-	-
2023		-		-	-	-	-	-	-	-	-	-	-
2024		-		-	-	-	-	-	-	-	-	-	-
2025		-		-	-	-	-	-	-	-	-	-	-
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix H-3
Guelph/Eramosa
Water & Wastewater Services
Gazer-Mooney Water & Wastewater Lifecycle Reserve Fund Continuity - 01-0000-2804
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	230,463	251,305	274,552	299,540	326,391	355,239	371,967	404,244	438,161	473,530	510,405
Transfer from Operating	16,695	17,864	19,114	20,452	21,883	23,414	24,351	25,325	26,085	26,867	27,673
Transfer to Capital	780	-	-	-	-	13,980	-	-	-	-	147,020
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	246,378	269,169	293,666	319,991	348,274	364,674	396,318	429,569	464,246	500,398	391,058
Interest	4,928	5,383	5,873	6,400	6,965	7,293	7,926	8,591	9,285	10,008	7,821

Appendix H-4
Guelph/Eramosa
Water & Wastewater Services
Gazer-Mooney Operating Budget Forecast
 Inflated \$

Description	Budget 2015	Forecast									
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Expenditures											
<u>Capital Related</u>											
Debt Charges - Non-Growth - Principal	-	-	-	-	-	-	-	-	-	-	-
Debt Charges - Non-Growth - Interest	-	-	-	-	-	-	-	-	-	-	-
Transfer to Gazer-Mooney Lifecycle Reserve Fund	16,695	17,864	19,114	20,452	21,883	23,414	24,351	25,325	26,085	26,867	27,673
Sub Total Capital Related	16,695	17,864	19,114	20,452	21,883	23,414	24,351	25,325	26,085	26,867	27,673
Gazer-Mooney Billing Recovery - Total	16,695	17,864	19,114	20,452	21,883	23,414	24,351	25,325	26,085	26,867	27,673

Appendix H-5
Guelph/Eramosa
Water & Wastewater Services
Gazer-Mooney - Water Volume Rate Forecast
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Water Billing Recovery	16,695	17,864	19,114	20,452	21,883	23,414	24,351	25,325	26,085	26,867	27,673
Total Customers	71	71	71	71	71	71	71	71	71	71	71
Flat Rate	235.14	251.60	269.21	288.05	308.21	329.78	342.97	356.69	367.39	378.41	389.76
Annual Percentage Change		7%	7%	7%	7%	7%	4%	4%	3%	3%	3%

Appendix I – Rockwood Detailed Wastewater Rate Calculations

Appendix I-1
Guelph/Eramosa
Rockwood Wastewater Service
Capital Budget Forecast
 Inflated \$

Description	Budget 2015	Total	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Capital Expenditures													
Small Dump Trailer	-	4,000	-	4,000	-	-	-	-	-	-	-	-	-
Lifecycle:													
Skyway Monitoring Station - H2S Monitor	-	17,000	-	-	-	-	-	-	-	17,000	-	-	-
Lou's Blvd. Pump Station - Pumps	7,000	-	-	-	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Access Hatch	6,000	-	-	-	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Pumps	-	10,000	-	10,000	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Piping	-	122,000	-	122,000	-	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Controls	-	104,000	-	-	104,000	-	-	-	-	-	-	-	-
Lou's Blvd. Pump Station - Back up Power Generator	-	191,000	-	-	-	191,000	-	-	-	-	-	-	-
Ridge Road Pump Station - Pumps	6,000	-	-	-	-	-	-	-	-	-	-	-	-
Ridge Road Pump Station - Controls	-	25,000	25,000	-	-	-	-	-	-	-	-	-	-
Ridge Road Pump Station - Pumps	-	8,000	-	-	8,000	-	-	-	-	-	-	-	-
Ridge Road Pump Station - Piping	-	59,000	-	-	-	-	-	-	-	-	-	59,000	-
MacLennan St. Pump Station - Pump	-	10,000	10,000	-	-	-	-	-	-	-	-	-	-
MacLennan St. Pump Station - Pump	-	10,000	-	-	10,000	-	-	-	-	-	-	-	-
MacLennan St. Pump Station - Piping & Valves	-	59,000	-	-	-	-	-	-	-	-	-	59,000	-
MacLennan St. Pump Station - Roof	-	16,000	-	-	-	-	-	-	-	-	-	16,000	-
Sanitary Sewers - Harris	-	774,000	-	-	774,000	-	-	-	-	-	-	-	-
Rockwood Vehicles - Wastewater Share	-	20,000	-	-	-	13,000	7,000	-	-	-	-	-	-
Sanitary Sewer Manholes	-	33,000	-	-	33,000	-	-	-	-	-	-	-	-
SCADA Communciation Upgrade	-	15,000	15,000	-	-	-	-	-	-	-	-	-	-
SCADA Control Upgrade	-	26,000	-	-	12,000	-	-	-	14,000	-	-	-	-
Studies:													
Rate Study	11,500	27,000	-	-	-	-	13,000	-	-	-	-	-	14,000
Financial Plan	4,000	9,000	-	-	-	-	4,000	-	-	-	-	-	5,000
SCADA Study	-	30,000	9,000	-	-	-	10,000	-	-	-	-	11,000	-
Growth Related:													
New Operational Space	-	107,000	15,000	92,000	-	-	-	-	-	-	-	-	-
Pick up Truck	-	13,000	13,000	-	-	-	-	-	-	-	-	-	-
Work Truck	-	14,000	-	-	-	14,000	-	-	-	-	-	-	-
Alma St. Sewer (upstream of plant)	-	576,000	576,000	-	-	-	-	-	-	-	-	-	-
Alma St Pre-Treatment and Storage (including land)	436,000	3,921,000	3,921,000	-	-	-	-	-	-	-	-	-	-
Total Capital Expenditures	470,500	6,200,000	4,584,000	228,000	941,000	218,000	34,000	-	31,000	-	145,000	19,000	
Capital Financing													
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	436,000	2,387,500	2,327,500	46,000	-	14,000	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	2,190,000	2,190,000	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	-	1,441,000	35,000	132,000	929,000	204,000	7,000	-	-	-	134,000	-	-
Wastewater Reserve	34,500	181,500	31,500	50,000	12,000	-	27,000	-	31,000	-	11,000	19,000	-
Total Capital Financing	470,500	6,200,000	4,584,000	228,000	941,000	218,000	34,000	-	31,000	-	145,000	19,000	

Appendix I-3
Guelph/Eramosa
Rockwood Wastewater Service
Schedule of Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2015	Principal (Inflated)	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
2016		2,190,000		270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007
2017		-			-	-	-	-	-	-	-	-	-
2018		-											
2019		-											
2020		-											
2021		-											
2022		-											
2023		-											
2024		-											
2025		-											
Total Annual Debt Charges	-	2,190,000	-	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007

Appendix I-2
Guelph/Eramosa
Rockwood Wastewater Service
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

Debenture Year	2015	Principal (Inflated)	Forecast										
			2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
2016		-		-	-	-	-	-	-	-	-	-	-
2017		-			-	-	-	-	-	-	-	-	-
2018		-											
2019		-											
2020		-											
2021		-											
2022		-											
2023		-											
2024		-											
2025		-											
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix I-4
Guelph/Eramosa
Rockwood Wastewater Service
Rockwood Sewer Operating Wastewater Reserve Continuity - 01-0000-2790
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	(37,582)	(37,582)	2,418	22,418	42,418	42,418	42,418	42,418	42,418	42,418	42,418
Transfer from Operating	155,405	195,405	175,405	175,405	155,405	155,405	155,405	155,405	155,405	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-
Transfer to Lifecycle Reserve - Loan Replayment	155,405	155,405	155,405	155,405	155,405	155,405	155,405	155,405	155,405	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	(37,582)	2,418	22,418	42,418	42,418	42,418	42,418	42,418	42,418	42,418	42,418

Appendix I-5
Guelph/Eramosa
Rockwood Wastewater Service
Rockwood Sewer Capital Wastewater Reserve Fund Continuity - 01-0000-2820
 Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	129,116	110,740	193,284	221,464	318,506	482,588	612,086	735,157	842,357	1,003,994	1,163,542
Transfer from Operating	13,952	110,254	73,838	102,797	154,620	144,496	108,656	121,683	141,951	147,733	144,945
Transfer to Capital	34,500	31,500	50,000	12,000	-	27,000	-	31,000	-	11,000	19,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	108,568	189,494	217,121	312,261	473,126	600,084	720,742	825,840	984,308	1,140,727	1,289,487
Interest	2,171	3,790	4,342	6,245	9,463	12,002	14,415	16,517	19,686	22,815	25,790

Appendix I-6
Guelph/Eramosa
Rockwood Wastewater Service
Wastewater Development Charges Reserve Fund Continuity - 2877
Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	(851,528)	(1,084,312)	66,359	(232,606)	(485,355)	(756,892)	(1,019,022)	(914,174)	(799,213)	(622,108)	(431,356)
Development Charge Proceeds	224,477	21,179	21,603	26,775	27,311	27,858	392,780	400,639	459,311	469,217	545,776
Development Charge Advanced Funding - Wastewater		1,979,777									
Development Charge Advanced Funding - Other Services		1,475,913									
Transfer to Capital	436,000	2,327,500	46,000	-	14,000	-	-	-	-	-	-
Repayment of Advanced Funding - Other Services											
Transfer to Operating	-	-	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007
Closing Balance	(1,063,051)	65,058	(228,045)	(475,838)	(742,051)	(999,041)	(896,249)	(783,542)	(609,910)	(422,898)	(155,587)
Interest	(21,261)	1,301	(4,561)	(9,517)	(14,841)	(19,981)	(17,925)	(15,671)	(12,198)	(8,458)	(3,112)
Required from Development Charges	436,000	4,517,500	46,000	-	14,000	-	-	-	-	-	-

Appendix I-7
Guelph/Eramosa
Rockwood Wastewater Service
Rockwood Wastewater Lifecycle Reserve Fund Continuity - 01-0000-2821
Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opening Balance	582,224	775,842	939,672	1,007,839	264,430	245,652	478,439	799,521	1,157,625	1,522,891	1,773,669
Transfer from Operating	23,000	25,000	25,000	25,000	25,000	75,000	150,000	180,000	180,000	350,000	375,000
Transfer from Operating Reserve - Loan Repayment	155,405	155,405	155,405	155,405	155,405	155,405	155,405	155,405	155,405	-	-
Transfer to Capital	-	35,000	132,000	929,000	204,000	7,000	-	-	-	134,000	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	760,629	921,247	988,078	259,245	240,835	469,057	783,844	1,134,926	1,493,030	1,738,891	2,148,669
Interest	15,213	18,425	19,762	5,185	4,817	9,381	15,677	22,699	29,861	34,778	42,973

Appendix I-8
Guelph/Eramosa
Rockwood Wastewater Services
Operating Budget Forecast
Inflated \$

Description	Budget 2015	Forecast										
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Expenditures												
Operating Costs												
Communications	2,200	2,244	4,200	4,284	4,370	4,457	4,546	4,637	4,730	4,825	4,922	
Conservation Initiatives	1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195	1,219	
Fees - Engineering	10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951	12,190	
Fees - Legal	500	510	520	531	541	552	563	574	585	597	609	
Fees - Professional - Other	-	-	-	-	-	-	-	-	-	-	-	
Fleet	8,000	9,160	9,343	9,530	9,721	9,915	10,113	10,315	10,521	10,731	10,946	
Grounds Maintenance	2,000	2,500	2,550	2,601	2,653	2,706	2,760	2,815	2,871	2,928	2,987	
Hydro	13,000	13,260	41,000	41,820	42,656	46,000	46,920	47,858	48,815	49,791	50,787	
Natural Gas	-	-	4,700	4,794	4,890	4,988	5,087	5,189	5,293	5,399	5,507	
Insurance	10,913	11,131	12,500	12,750	13,005	13,265	13,530	13,801	14,077	14,359	14,646	
Insurance Claims	-	-	-	-	-	-	-	-	-	-	-	
Licenses	500	500	500	510	520	531	541	552	563	574	585	
Memberships and Dues	800	816	1,200	1,224	1,248	1,273	1,299	1,325	1,352	1,379	1,407	
Contracted Services	5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,744	5,859	5,976	6,096	
Repairs & Maint - Building	1,700	1,734	4,000	4,080	4,162	4,245	4,330	4,417	4,505	4,595	4,687	
Repairs & Maint - Equipment	25,000	25,500	30,000	30,600	31,212	33,000	33,660	34,333	35,020	35,720	36,434	
Repairs & Maint - Water/WW Mains	20,000	23,000	23,460	23,929	24,408	24,896	25,394	25,902	26,420	26,948	27,487	
Safety	1,500	1,530	1,761	1,796	1,832	1,869	1,906	1,944	1,983	2,023	2,063	
Salaries and Wages	139,100	149,600	163,400	176,700	190,250	194,055	197,936	201,895	205,933	210,052	214,253	
Salaries Benefits	41,725	44,880	49,020	53,010	57,075	58,217	59,381	60,569	61,780	63,016	64,276	
Seminars and Training	5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,744	5,859	5,976	6,096	
Supplies and Services	20,000	20,400	60,000	61,200	62,424	68,000	69,360	70,747	72,162	73,605	75,077	
Telephone	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390	2,438	
Uniforms	500	510	700	714	728	743	758	773	788	804	820	
WW Treatment City of Guelph	420,000	441,000	463,050	486,203	510,513	536,038	562,840	590,982	620,531	651,558	684,136	
Service Agreements	-	2,000	2,040	2,081	2,123	2,165	2,208	2,252	2,297	2,343	2,390	
Overhead Costs	11,548	11,779	12,015	12,255	12,500	12,750	13,005	13,265	13,530	13,801	14,077	
Sub Total Operating	741,986	785,514	909,888	955,019	1,001,727	1,045,058	1,082,039	1,120,566	1,160,706	1,202,536	1,246,135	
Capital-Related												
Existing Debt (Principal) - Growth Related												
Existing Debt (Interest) - Growth Related												
New Growth Related Debt (Principal)		-	182,407	189,703	197,292	205,183	213,391	221,926	230,803	240,035	249,637	
New Growth Related Debt (Interest)		-	87,600	80,304	72,716	64,824	56,617	48,081	39,204	29,972	20,370	
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 Rockwood Wastewater Operating Reserve	155,405	195,405	175,405	175,405	155,405	155,405	155,405	155,405	155,405	155,405	-	
Transfer to Rockwood Wastewater Capital Reserve	13,952	110,254	73,838	102,797	154,620	144,496	108,656	121,683	141,951	147,733	144,945	
Sub Total Capital Related	169,357	305,659	519,250	548,210	580,032	569,909	534,069	547,095	567,364	417,740	414,952	
Total Expenditures	911,343	1,091,174	1,429,139	1,503,229	1,581,759	1,614,967	1,616,108	1,667,661	1,728,070	1,620,276	1,661,087	

Appendix I-8 (Cont.)
Guelph/Eramosa
Rockwood Wastewater Services
Operating Budget Forecast
Inflated \$

Description	Budget 2015	Forecast										
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Revenues												
Base Charge	83,059	200,760	208,080	215,987	224,127	232,506	241,131	250,278	259,971	269,950	280,512	
Penalty and Interest	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	
Miscellaneous Revenue	-	-	-	-	-	-	-	-	-	-	-	
Contributions from Development Charges Reserve Fund	-	-	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	270,007	
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-	-	
Total Operating Revenue	87,059	204,760	482,087	489,994	498,134	506,514	515,138	524,286	533,978	543,957	554,519	
Wastewater Billing Recovery - Operating	824,284	886,414	947,051	1,013,235	1,083,625	1,108,453	1,100,970	1,143,376	1,194,092	1,076,319	1,106,568	
Lifecycle Reserve Contribution (\$)	23,000	25,000	25,000	25,000	25,000	75,000	150,000	180,000	180,000	350,000	375,000	
Wastewater Billing Recovery - Total	847,284	911,414	972,051	1,038,235	1,108,625	1,183,453	1,250,970	1,323,376	1,374,092	1,426,319	1,481,568	

Appendix I-9
Guelph/Eramosa
Rockwood Wastewater Service
Wastewater Volume Rate Forecast
Inflated \$

Description	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Wastewater Billing Recovery	847,284	911,414	972,051	1,038,235	1,108,625	1,183,453	1,250,970	1,323,376	1,374,092	1,426,319	1,481,568
Total Metered Volume (m3)	320,941	325,691	330,821	336,521	342,221	347,921	353,621	359,701	366,161	372,621	379,461
Constant Rate	2.64	2.80	2.94	3.09	3.24	3.40	3.54	3.68	3.75	3.83	3.90
Annual Percentage Change		6%	5%	5%	5%	5%	4%	4%	2%	2%	2%

Appendix J – 2015 Debt Capacity Calculations

**Appendix J-1
Guelph/Eramosa
Debt Capacity Calculation
(Based on 2014 FIR)**

Section	Description	MMAH FIR Code	\$
1.0	DEBT CHARGES FOR THE CURRENT YEAR		
1.1	Principal	SLC 74 3099 01	354,285
1.2	Interest	SLC 74 3099 02	176,933
1.3	Subtotal		531,218
2.0	ONTARIO CLEAN WATER AGENCY PROVINCIAL PROJECTS		
2.1	Water Projects - For this Municipality only	SLC 74 2810 03	-
2.2	Water Projects - Share of integrated project(s)	SLC 74 2820 03	-
2.3	Wastewater Projects - For this Municipality only	SLC 74 2830 03	-
2.4	Wastewater Projects - Share of integrated project(s)	SLC 74 2840 03	-
2.5	Subtotal		-
3.0	Payments for long term commitments and liabilities financed from the consolidated statement of operations	SLC 42 6010 01	-
4.0	Debt Charges for Lease Purchase Agreements (Tangible Capital Leases)	SLC 74 3140 03	-
5.0	TOTAL DEBT CHARGES	Add lines 1.3, 2.5, 3.0, 4.0	531,218
6.0	AMOUNTS RECOVERED FROM UNCONSOLIDATED ENTITIES		
6.1	Electricity (principal)	SLC 74 3030 01	-
6.2	Electricity (interest)	SLC 74 3030 02	-
6.3	Gas (principal)	SLC 74 3040 01	-
6.4	Gas (interest)	SLC 74 3040 02	-
6.5	Telephone (principal)	SLC 74 3050 01	-
6.6	Telephone (interest)	SLC 74 3050 02	-
6.7	Subtotal		-
7.0	Debt Charges for Tile Drainage/Shorline Assistance	SLC 74 3015 01 + SLC 74 3015 02	-
8.0	Provincial Grant funding for repayment of long term debt	SLC 74 3120 01 + SLC 74 3120 02	-
9.0	Total Debt Charges to be Excluded	Add lines 6.7, 7.0, 8.0	-
10.0	NET DEBT CHARGES	Subtract line 9.0 from 5.0	531,218
11.0	TOTAL REVENUE (* Sale of Hydro Utilities Removed)	SLC 10 9910 01	11,995,589
12.0	EXCLUDED REVENUE AMOUNTS		
12.1	Fees for Tile Drainage/Shoreline Assistance	SLC 12 1850 04	-
12.2	Ontario Grants, including Grants for Tangible Capital Assets	SLC 10 0699 01 + SLC 10 0810 01 + SLC 10 0815 01	531,218
12.3	Canada Grants, including Grants for Tangible Capital Assets	SLC 10 0820 01 + SLC 10 0825 01	-
12.4	Deferred revenue earned (Provincial Gas Tax)	SLC 10 0830 01	-
12.5	Deferred revenue earned (Canada Gas Tax)	SLC 10 0831 01	589,110
12.6	Revenue from other municipalities, including Revenue for Tangible Capital Assets	SLC 10 1099 01 + SLC 10 1098 01	35,000
12.7	Gain/Loss on sale of land & capital assets	SLC 10 1811 01	(183,368)
12.8	Deferred revenue earned (Development Charges)	SLC 10 1812 01	2,031,458
12.9	Deferred revenue earned (Recreation Land (the Planning Act))	SLC 10 1813 01	19,000
12.10	Other Deferred revenue earned	SLC 10 1814 01	-
12.11	Donated Tangible Capital Assets	SLC 53 0610 01	-
12.13	Subtotal		3,022,418
13.0	Fees and Revenue for Joint Local Boards for Homes for the Aged		
14.0	NET REVENUES	Lines 11 less 12.13,13	8,973,171
15.0	25% OF NET REVENUES		2,243,293
16.0	ESTIMATED ANNUAL REPAYMENT LIMIT	25% of Net Revenues	1,712,075

Debt Capacity Ratio 6%

For Illustration Purposes Debt Availability		
7% Debenture Rate For:		
20 Years		\$18,137,744
15 Years		\$15,593,430
10 Years		\$12,024,897
5 Years		\$7,019,845
9% Debenture Rate For:		
20 Years		\$15,628,753
15 Years		\$13,800,501
10 Years		\$10,987,510
5 Years		\$6,659,374
Infrastructure Ontario - Lending Rates: Municipalities (Serial)		
as of July 2, 2015		
20 Years	3.06%	\$25,330,624
15 Years	2.78%	\$20,767,704
10 Years	2.30%	\$15,140,237
5 Years	1.55%	\$8,176,279