



TOWN OF ERIN

WATER RATE STUDY



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4304 Village Centre Court
Mississauga, Ontario
Canada L4Z 1S2

Phone: (905)272-3600

Fax: (905)272-3602

e-mail: info@watson-econ.ca

 **Planning for growth**

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1. INTRODUCTION

1. INTRODUCTION

1.1 Background

The Town of Erin is located in Wellington County, northwest of Toronto, with a population of approximately 11,800 persons. The Town is made up of two (water serviced) urban centres (Erin and Hillsburgh) and six hamlets, Ballinafad, Brisbane, Cedar Valley, Crewson's Corners, Orton and Ospringe.

The Town's water system services approximately 1,545 users, in residential, business and industrial locations. There are two municipal water systems, the Erin Well Supply, and the Hillsburgh Well Supply located in the Town of Erin.

Erin Well Supply System:

The Erin Water Supply System is a ground water supply system serving a population of approximately 3,000 residential and commercial customers in the Town of Erin. The Bel-Erin Subdivision and Mountainview Subdivision Wells were both taken out of service and connected to the Erin Well Supply System in 2003. The water is supplied from three wells drilled into the fractured limestone bedrock, with a total rated capacity of 6,080 m³/d. The pressure in most of the Erin Water Supply System is maintained by a 1,700 m³ water tower, however sixty-five residences in the Erin Heights subdivision requires a booster pump main to maintain adequate pressure.

Well No. 8 is located approximately 50 meters south of the West Credit River and is slightly elevated above the flood plain. The land surface slopes towards the river. The pump house is a masonry structure with the well located outside in a concrete well tile. The outer casing diameter is 350 mm and extends to a depth of 6.7m. The inner casing has a diameter of 200 mm and extends to a depth of 8.53 m.

Well No. 7 is located at 46 Shamrock Road. The new pump house has been completed bringing it into compliance with the new regulations imposed by the Safe Drinking Water Act 2002. The neighbouring land is used for both residential and agricultural purposes. There is a golf course adjacent to the pump house along with undeveloped land.

Hillsburgh Well Supply System:

The Hillsburgh Water Supply System is a ground water supply system serving a population of approximately 670 in the Village of Hillsburgh, Municipality of the Town of Erin. The Hillsburgh system consists of two groundwater wells drilled into the fractured limestone bedrock, two pump houses, two in-ground reservoirs, and the distribution system. Pressure is maintained by the pump operation.

Well No. H1 (Glendevon Well) was located at the Glendevon facility and has been abandoned.

Well No. H2 (Hillsburgh Heights Well) is located on Wellington Rd. 24 at the Hillsburgh Heights facility. It is an 88 m deep drilled groundwater well, constructed of steel casing of 200 mm diameter to a depth of 51.0 m. It is equipped with a submersible pump rated at 702 L/min. The well discharges through a 150 mm diameter line into a reservoir. A flow meter measures the amount of water drawn from the well.

Well No. H3 (Victoria Park Well) is located at Victoria Park, approximately 150 metres north of Well 1 and the Glendevon pump house. It is a 57.9 m deep drilled groundwater well, constructed of steel casing of 200 mm diameter to a depth of 20.1 m. The well is equipped with a submersible pump rated at 456 L/min. A flow meter measures the amount of water drawn from the well.

Currently, the Town has a base rate for water (based on meter size) as well as a decreasing block rate based on m³ of consumption.

Town of Erin
2010 – Water Billing Rates

Base Charge (per month)	All Other Residential Users	\$9.05
	2"	\$18.10
	4"	\$36.20
Volume Charge - per m ³ (per quarter)	0-167.7 m ³	\$1.97
	>167.7 m ³	\$1.28

There is also a non-metered rate (flat rate) for those water customers who do not have meters (where installation of meters is deemed by the Town to be impractical). The monthly

consumption charge per unit for those units is calculated by using the annual average water consumption (cubic metre) for each system, divided by twelve months and applying the water consumption rates. The non-metered water rates (monthly) are shown below:

Non-Metered Water Rates		
Area	Monthly Consumption (m ³)	2010 Monthly Charge
Erin	25.00	\$49.25
Hillsburgh	30.30	\$59.69
Belerin	45.40	\$89.44
Mountainview	21.25	\$41.86

The water rates are imposed by By-law 02-96, passed on August 1, 2006.

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 Town of Erin to assist in addressing these changes in a proactive manner as they relate to the water system.

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" within six months after the granting of the license. The Town of Erin, at the time of the writing of this report, has not yet been granted an operating license, however, approval is expected in the early part of 2011. . Following the water rate study, the O.Reg 453/07 Financial Plan will be undertaken by Watson & Associates Economists Ltd.

The financial plan is being carried out in two parts. The water rate study (this study) will provide for a longer range projection of the Town's capital/operating budgets along with providing a preliminary review of the infrastructure replacement needs. As a product of this review, a forecast of water and wastewater rates will also be provided, however, Council is not being asked to approve these longer term forecast rates at this time. Further discussion and the setting of those longer term rates will occur during the annual budget process in the coming years. The analysis provided herein also provides the details to allow for the preparation of the mandatory O. Reg 453/07 report which must be submitted to the Province to fulfill the licensing requirements. The O. Reg 453/07 Study will take the information which is contained in this rate study (which has been prepared on a "modified accrual or cash" basis) and restates that

information in a Financial Statement format (“full accrual” basis) which is the required basis for submission to the Province. As will be provided in the O. Reg 453/07 report, Council will be requested to approve that report prior to submission to the Province.

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 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 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.
- Provide a report and presentation to staff and Council, relative to the findings.
- Undertake a public meeting to present the findings of the study.

1.3 Regulatory Changes in Ontario

Resulting from the water crisis in Walkerton, significant regulatory changes have been made in Ontario over the past few years. 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 will most impact municipal water rates is the *Sustainable Water and Sewage Systems Act* (SWSSA) which will require municipalities to implement full cost pricing. The Act was enacted in 2002, however, has not been implemented pending the approval of its regulations. It is not known when the Act will be fully implemented however 'interim' legislation was introduced on August 16, 2007 which requires similar principles be introduced. The following sections describe these changes.

1.4 Summary of the *Sustainable Water and Sewage Systems Act*

As noted earlier, the *Sustainable Water and Sewage Systems Act* (SWSSA) was passed on December 13, 2002. The intent of the Act is to introduce the requirement for municipalities to undertake an assessment of the "full cost" of providing their water and the wastewater services. It is noted that, at the time of writing, the regulations, which accompany the Act, have not been issued. In total, there are 40 areas within the Act to which the Minister may make Regulations. As will be discussed in the next section, interim legislation was passed on August 16, 2007 which will implement many of the principles provided by SWSSA.

Full costs for water service is defined in subsection 3(7) of the Act and includes "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 are made for wastewater services in subsection 4(7) respecting the "collecting, treating or discharging waste water."

The Act will require 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 is on the "full cost of services" and the second is the "cost recovery plan." Once these reports have been reviewed and approved by the Ministry, the municipality will be required to implement the plans within a specified time period.

In regard to the "Full Cost of Services" report, the municipality (deemed a regulated entity under the Act) must prepare and approve a report concerning the provision of water and sewage

services. This report must 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 must certify the inventory and management plan portion of the report. The municipality's auditor will be required to provide a written opinion on the report. The report must be approved by the municipality and then be forwarded to the Ministry along with the engineer's certification and the auditor's opinion. The regulations will stipulate the timing for this report.

The second report is referred to as a "Cost Recovery Plan" and will address how the municipality intends to pay for the full costs of providing the service. The regulations may specify limitations on what sources of revenue the municipality may use. The regulations may also provide limits as to the level of increases any customer or class of customer may experience over any period of time. Provision is made for the municipality to implement increases above these limits however ministerial approval would be required first. Similar to the first report, the municipal auditor must 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 provides the Minister the power to approve or not approve the plans. If the Minister is not satisfied with the report or if a municipality does not submit a plan, the Minister may have a plan prepared. The cost to the Crown for preparing the plan will be recovered from the municipality. As well, the Minister may direct two or more regulated municipalities to prepare a joint plan. This joint plan may be directed at the onset or be directed by the Minister after receiving the individual plans from the municipalities.

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

Once the plans are approved and in place, the municipality will be required to submit progress reports. The timing of these reports and the information to be contained therein will be established by the regulations. A municipal auditor's opinion must be provided with the progress report. Municipalities may also revise the plans if they deem the estimate does not reflect the full cost of providing the services, as a result of a change in circumstances, regulatory or other

changes that affect their plan, etc. The municipality must then revise its prior plan, provide an auditor's opinion, and submit the plan to the Minister.

As of the time of writing, the regulations to implement this Act have not been passed; hence the Act will not be in effect until these regulations are passed. As discussed in Section 1.5, interim legislation has been introduced by the Province.

1.5 Financial Plans Regulation

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

- The financial plan will represent one of the key elements for the Town to obtain its Drinking Water License.
- The plan is to be completed by July 1, 2010 (or 6 months after Municipal Drinking Water license is issued).
- 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, PSAB 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 Town's web site. The availability of this information must also be advertised.

- 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 SWSSA 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-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 storm water 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: Life-cycle 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.

The preparation of this study document is consistent with the principles of the SWSSA and the new regulations.

1.6 Bill 72, Water Opportunities and Water Conservation Act, 2010

Since the passage of the Safe Drinking Water Act, continuing changes and refinements to the legislation has 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 and Water Conservation 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;
- Prepare sustainability plans for municipal water services, municipal wastewater services and municipal stormwater services.

With regard to the sustainability plans:

- The Bill 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;
- 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;
- Financial Plan;
- For water, a water conservation plan;
- 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;
- 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
- Limitations, updates, refinements, etc.

1.7 Forecast Growth and Servicing Requirements

The Town currently services 1,544 water customers. Information on existing number of customers and existing billable water volumes was obtained from the Town.

Water usage in Erin has averaged 190 m³ per residential customer and 400 m³ for non-residential customer. For forecasting future water volumes, the average volume per residential customer of 190 m³ has been assumed for new residential water customers and 400 m³ for new non-residential water customers.

For future water customers who are to be added to the system, the growth forecast as outlined in the Town's current Development Charge Background Study was considered. However, based on discussions with staff, the growth has been lowered over the forecast period.

Tables 1-1 provides for the forecast of water users and volumes.

Table 1-1
Town of Erin - Water System User Forecast

Single Residential Users	Total Users	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
2010	1		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2011	2		1.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2012	2			1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2013	2					1.00	2.00	2.00	2.00	2.00	2.00	2.00
2014	2						1.00	2.00	2.00	2.00	2.00	2.00
2015	2							1.00	2.00	2.00	2.00	2.00
2016	5								2.50	5.00	5.00	5.00
2017	5									2.50	5.00	5.00
2018	5										2.50	5.00
2019	5											2.50
Total	31		1	2	4	6	8	10	14	19	24	29
m ³ /user	190		190	190	190	190	190	190	190	190	190	190
Annual Flow			190	380	760	1,140	1,520	1,900	2,565	3,515	4,465	5,415
Non-Residential Users	Total Users	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
2010	3		3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
2011	1			0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2012	1				0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2013	1					0.50	1.00	1.00	1.00	1.00	1.00	1.00
2014	1						0.50	1.00	1.00	1.00	1.00	1.00
2015	1							0.50	1.00	1.00	1.00	1.00
2016	1								0.50	1.00	1.00	1.00
2017	1									0.50	1.00	1.00
2018	1										0.50	1.00
2019	1											0.50
Total	12		3	4	5	6	7	8	9	10	11	12
m ³ /user	400		400	400	400	400	400	400	400	400	400	400
Annual Flow			1,200	1,400	1,800	2,200	2,600	3,000	3,400	3,800	4,200	4,600

Table 1-1
Town of Erin - Water System User Forecast

Residential Water Forecast											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Existing - Single Residential Units	1,228	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234
New - Growth Single Residential		1	2	4	6	8	10	14	19	24	29
Total Single Residential Units	1,228	1,235	1,236	1,238	1,240	1,242	1,244	1,248	1,253	1,258	1,263
Total Multi-Residential Units	203	204	204	204	204	204	204	204	204	204	204
Total Residential Units	1,431	1,439	1,440	1,442	1,444	1,446	1,448	1,452	1,457	1,462	1,467
Non-Residential Water Unit Forecast											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Existing Non-Residential Units	99	101	101	101	101	101	101	101	101	101	101
New - Growth		3	4	5	6	7	8	9	10	11	12
Total Non-Residential Units	99	104	105	106	107	108	109	110	111	112	113
Water Consumption Forecast (m³)											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Existing Single Residential	230,386	248,140	248,140	248,140	248,140	248,140	248,140	248,140	248,140	248,140	248,140
New - Growth Single Residential		190	380	760	1,140	1,520	1,900	2,565	3,515	4,465	5,415
Total Single Residential Consumption	230,386	248,330	248,520	248,900	249,280	249,660	250,040	250,705	251,655	252,605	253,555
Total Multi-Residential Consumption	36,984	37,166	37,166	37,166	37,166	37,166	37,166	37,166	37,166	37,166	37,166
Total Residential Consumption	267,370	285,496	285,686	286,066	286,446	286,826	287,206	287,871	288,821	289,771	290,721
Existing Non-Residential (non-Steen's)	38,924	39,689	39,689	39,689	39,689	39,689	39,689	39,689	39,689	39,689	39,689
Existing Non-Residential (Steen's)	17,190	17,190	1,400	1,800	2,200	2,600	3,000	3,400	3,800	4,200	4,600
New - Growth - Non-Residential		1,200	1,400	1,800	2,200	2,600	3,000	3,400	3,800	4,200	4,600
Total Non-Residential	56,114	58,079	41,089	41,489	41,889	42,289	42,689	43,089	43,489	43,889	44,289
Total Consumption	323,483	343,575	326,775	327,555	328,335	329,115	329,895	330,960	332,310	333,660	335,010
Block 1											
Existing Single Residential	Block 1	Block 1	Block 1	Block 1	Block 1	Block 1	Block 1	Block 1	Block 1	Block 1	Block 1
New - Growth Single Residential	223,259	240,978									
Total Single Residential Consumption	223,259	241,168	241,168	241,168	241,168	241,168	241,168	241,168	241,168	241,168	241,168
Existing Multi-Residential	4,676	4,699	4,699	4,699	4,699	4,699	4,699	4,699	4,699	4,699	4,699
Existing Non-Residential (non-Steen's)	22,982	22,943	22,943	22,943	22,943	22,943	22,943	22,943	22,943	22,943	22,943
Existing Non-Residential (Steen's)	671	671	671	671	671	671	671	671	671	671	671
New - Growth - Non-Residential		1,200	1,400	1,800	2,200	2,600	3,000	3,400	3,800	4,200	4,600
Total Block 1 Consumption	23,653	24,814	24,814	24,814	24,814	24,814	24,814	24,814	24,814	24,814	24,814
Block 2											
Existing Single Residential	Block 2	Block 2	Block 2	Block 2	Block 2	Block 2	Block 2	Block 2	Block 2	Block 2	Block 2
Existing Multi-Residential	7,127	7,162	7,162	7,162	7,162	7,162	7,162	7,162	7,162	7,162	7,162
Existing Non-Residential (non-Steen's)	32,307	32,466	32,466	32,466	32,466	32,466	32,466	32,466	32,466	32,466	32,466
Existing Non-Residential (Steen's)	15,941	16,746	16,746	16,746	16,746	16,746	16,746	16,746	16,746	16,746	16,746
Total Block 2 Consumption	71,895	72,894	72,894	72,894	72,894	72,894	72,894	72,894	72,894	72,894	72,894
Total Consumption	323,483	343,575	326,775	327,555	328,335	329,115	329,895	330,960	332,310	333,660	335,010

2. CAPITAL INFRASTRUCTURE NEEDS

2. CAPITAL INFRASTRUCTURE NEEDS

2.1 Capital Forecast

A capital forecast has been provided for the water system and is presented on Tables 2-1 (Note: the costs are in inflated dollars). The basis for these forecasts is the Town's 10 Year Capital Forecast. The largest capital costs for the water system is the Replacement Well House at \$1,792,639 in 2019 and the Hillsburgh Pumping Station at \$1,003,342 in the years 2010 – 2012. A detailed timeline description of Table 2-1 is provided below:

Water Capital Budget (Inflated)

Description	Timing	Total
Capital Expenditures		
Hillsburgh Pumping Station	2010 - 2012	1,003,342
Pioneer Drive Watermain Project	2010	125,316
Mill Street - Main Street Watermain	2010	23,334
Water Tower Painting	2010	25,000
C of A Upgrades	2010	25,000
Hydro Bldg Shop - Replace HVAC (shared with GCL)	2010	7,500
Emergency Radio System	2011	11,730
Mountainview Hydrant Installations	2010 - 2011	80,800
Water Tower Road Realignment	2010 - 2011	80,800
Works Excavac Roll-off	2012	39,015
GIS Mapping	2013	53,060
Meter Replacement Program	2015 - 2019	344,742
Radio Meter Reading Device	2015	55,204
Well House Betterments	2014	162,365
SCADA System	2018	468,664
SCADA System - possible extra costs	2018	117,166
Studies		
Water Rate/Financial Plan Study	2010	30,000
Water Supply & Distribution Strategy Report	2012	10,404
Bel-Erin Well "Options" Report	2012	5,202
Infrastructure Replacement		
Vehicle Replacement	2010, 2014	62,202
Replacement Well House	2019	1,792,639
Well House PLC replacement	2013	132,651
Watermain Replacements	2012 - 2013	556,695
Water Service Connections Replacements	2012 - 2013	69,245
Total Capital Expenditures		5,282,076

Table 2-1
Town of Erin
Water Service
Capital Budget Forecast
Inflated \$

Description	Total	Forecast										DC %				
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019					
Capital Expenditures																
Hillsburgh Pumping Station	1,003,342	226,666	384,493	392,183												
Upgrade Hydro Building Window																
Pioneer Drive Watermain Project	125,316	125,316														
Test Wells & Monitoring - Wells 7 & 8																
Pumphouse Upgrades																
Mill Street - Main Street Watermain	23,334	23,334														
Water Tower Painting	25,000	25,000														
C of A Upgrades	25,000	25,000														
Hydro Bldg Shop - Replace HVAC (shared with GCL)	7,500	7,500														
Emergency Radio System	11,730		11,730													
Mountainview Hydrant Installations	80,800	40,000	40,800													
Water Tower Road Realignment	80,800	40,000	40,800													
Works Excavac Roll-off	39,015		39,015													
GIS Mapping	53,060		53,060													
Meter Replacement Program	344,742										66,245	67,570	68,921	70,300	71,706	
Radio Meter Reading Device	55,204										55,204					
Well House Betterments	162,365									162,365						
SCADA System	468,664													468,664		
SCADA System - possible extra costs	117,166													117,166		
Studies																
Technical Studies - Modelling, Monitoring																
Water Rate/Financial Plan Study	30,000	30,000														
Water Supply & Distribution Strategy Report	10,404		10,404													100%
Bel-Erin Well "Options" Report	5,202		5,202													100%
Infrastructure Replacement																
Vehicle Replacement	62,202	30,000								32,202						
Replacement Well House	1,792,639													1,792,639		33%
Well House PLC replacement	132,651										132,651					
Watermain Replacements	556,695			275,592	281,103											
Water Service Connections Replacements	69,245			34,280	34,965											
Total Capital Expenditures	5,282,076	572,816	477,823	756,676	501,779	194,567	121,449	67,570	68,921	656,130	1,864,345					

Note: Shaded projects are eligible for funding through Development Charges - by the % shown in the right hand column.

3. LIFE CYCLE COSTING

3. LIFE CYCLE COSTING

3.1 Overview of Life Cycle Costing

3.1.1 *Definition*

For many years, life cycle 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.

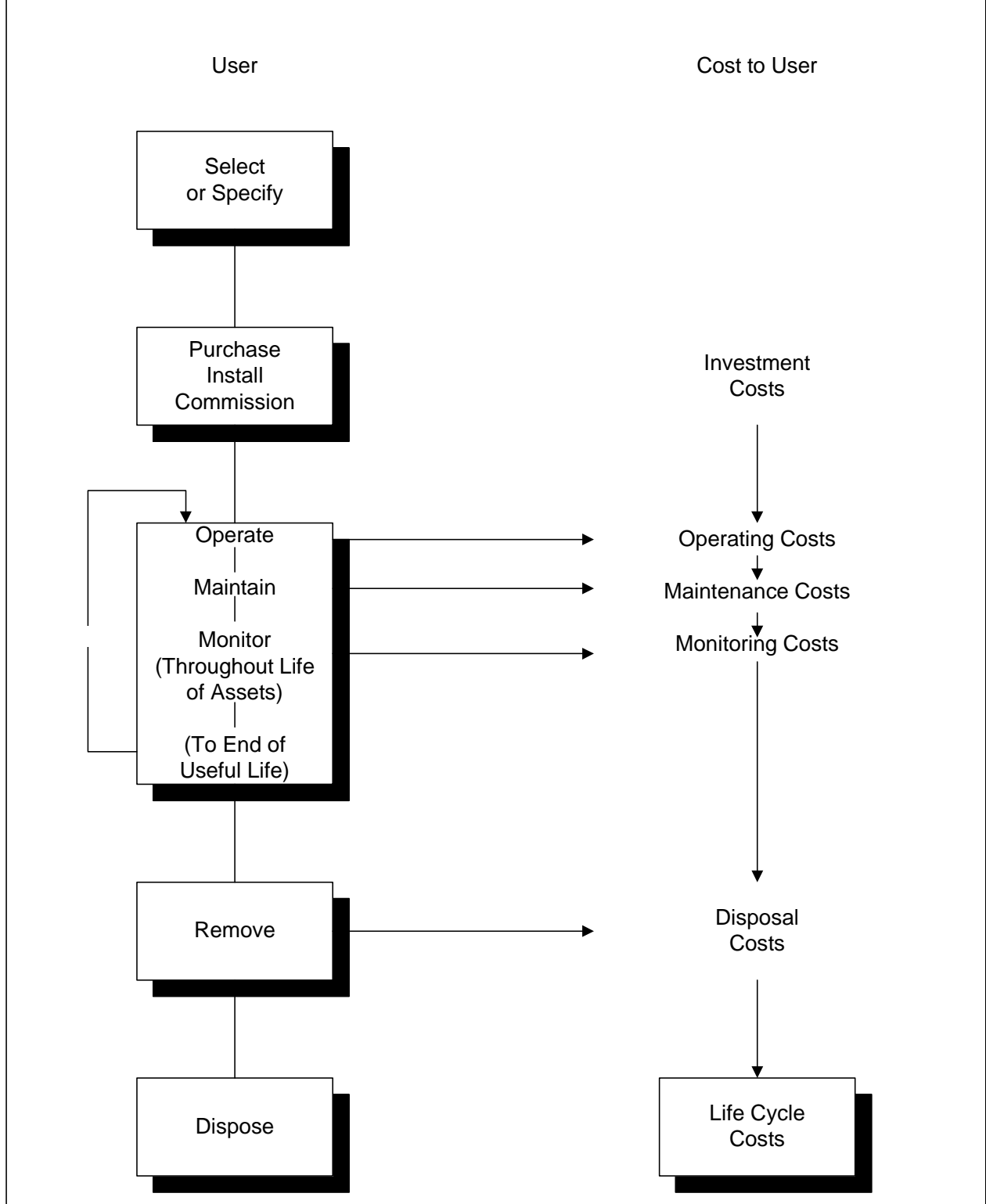
By definition, life cycle costs are all the costs which are incurred during the life cycle of a physical asset, from the time its acquisition is first considered, to the time it is taken out of service for disposal or redeployment. The stages which the asset goes through in its life cycle are specification, 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 Town. 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.

**Figure 3-1
Life Cycle Costing**



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

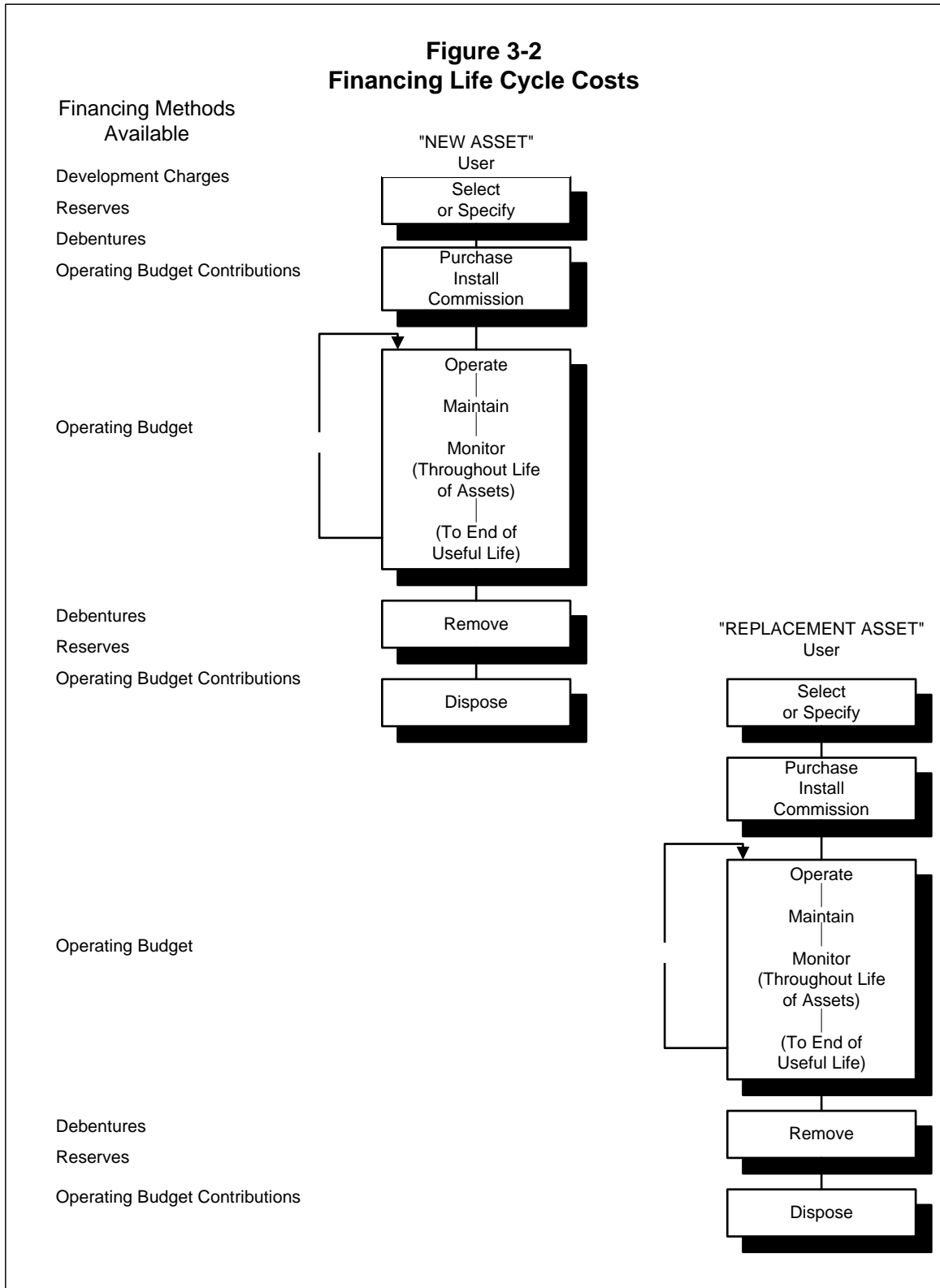
New construction related to growth could produce development charges and developer contributions (e.g. works internal to a subdivision which are the responsibility of the developer to construct) to fund a significant portion of projects, where new assets are being acquired to allow growth within the municipality to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

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 municipality will be dependent upon debentures, reserves and contributions from the operating budget to fund these works.

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

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

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.

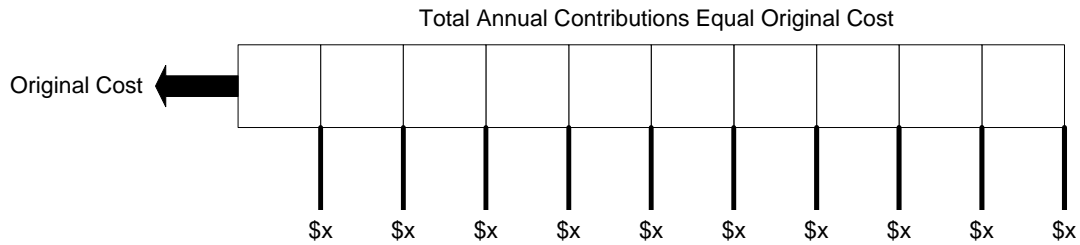
The straight line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing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

The second method of life cycle 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 life cycle costing. It is noted that, within the O. Reg 453/07 report, depreciation of the municipal assets will be undertaken as a requirement of reporting on a full accrual basis.

FIGURE 3-3

STRAIGHT LINE DEPRECIATION

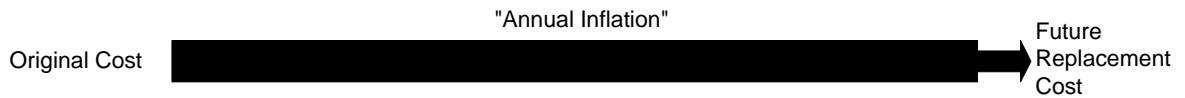


Formula:

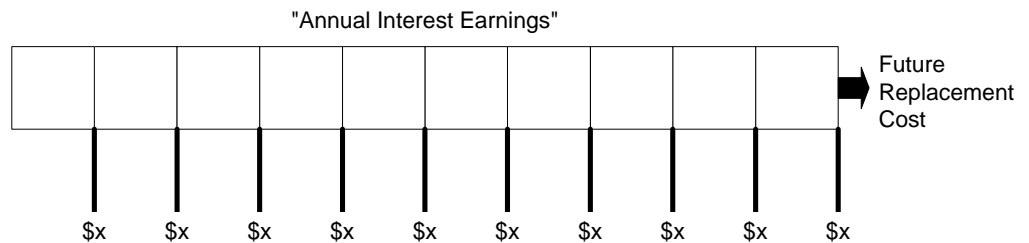
$$\frac{\text{Original Cost} - \text{Salvage Cost}}{\text{Number of Years of Useful Life}}$$

SINKING FUND METHOD

1. "Estimate Future Replacement Cost"



2. "Estimate Annual Contribution which will Grow with Interest to Equal Future Replacement Cost"



3.2 Impact on Budgets

Detailed water system inventory information was obtained from the Town. The age of the water system date back to the mid 1950's.

The detailed water system inventory is provided in Appendix B. As well, the lifecycle "sinking fund" contribution amounts for section of infrastructure have also been included. These calculations determine the level of investment the Town may wish to consider as part of its budgeting practices. This information is summarized in Table 3-1.

It is noted that the inventory of the complete water system will be required to be assessed and reported on by a professional engineer as part of the documentation required under *Sustainable Water and Sewage Systems Act*. The detailed specifics of the required assessment and reporting will not be known until the Province has set these standards by regulation to be enacted under the Sustainable Water and Sewage Systems Act. With respect to lifecycle costing the following information was taken under consideration:

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

Table 3-1
Summary of Water Infrastructure

Area	Total Replacement Value	Amount to be funded in 10 year forecast	Net Replacement for Future Lifecycle	Annual Lifecycle Replacement
Water Facilities	\$8,173,008	\$1,625,000	\$6,548,008	\$386,260
Water Vehicles	\$100,340	\$59,750	\$40,590	\$4,316
Water Service Connections	\$2,298,898	\$77,387	\$2,221,511	\$85,198
Watermains	\$18,913,427	\$529,780	\$18,383,646	\$729,953
Total	\$29,485,673	\$2,291,918	\$27,193,755	\$1,205,727

4. CAPITAL COST FINANCING OPTIONS

4. CAPITAL COST FINANCING OPTIONS

4.1 Summary of Capital Cost Financing Alternatives

Historically, the powers that municipalities have had to raise alternative revenues to taxation to fund capital services have been restrictive. Over the past few years, 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 municipality's ability to impose fees and charges. In contrast to the previous Municipal Act, this Act provides municipalities with broadly defined powers and does not differentiate between fees for operating and capital purposes. It is anticipated that the powers to recover capital costs under the previous Municipal Act will continue within the new Statutes and Regulations, as indicated by s.9(2) and s.452 of the new Municipal Act.

Under s.484 of Municipal Act, 2001, the Local Improvement Act was repealed with the in force date of the Municipal Act (January 1, 2003). The municipal powers granted under the Local Improvement Act now fall under the jurisdiction of the Municipal Act. To this end, on December 20, 2002, O.Reg. 390/02 was filed, which allows for the Local Improvement Act to be deemed to remain in force until April 1, 2003.

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

RECOVERY METHODS	SECTION REFERENCE
<ul style="list-style-type: none"> • <i>Development Charges Act, 1997</i> 	4.2
<ul style="list-style-type: none"> • <i>Municipal Act</i> <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 municipality. Generally the new Act provided the following changes to the former Act.

- Replace those sections of the 1989 DCA 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 municipality to reimburse the developer for the costs the

municipality would have incurred if the project had been financed from the development charge reserve fund.

- Set out provisions for front-end financing capital projects (limited to essential services) required to service new development.
- 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 Town presently imposes development charges for water services. The current (2010) water development charges in effect are shown on the chart below:

Residential				Non-Residential	
Single & Semi-Detached	Multiple Unit Dwellings	Apartments - 2+ Bedrooms	Apartments - < 2 Bedrooms	Non-Residential - Per square Foot	Non-Residential - Per square Metre
\$4,730	\$2,939	\$2,021	\$3,780	\$1.79	\$19.27

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 municipality or local board; and
- for the use of its property including property under its control”

Restrictions are provided to ensure that the form of the charge is not akin to a poll tax. Any charges not paid under this authority may be added to the tax roll and collected in a like manner. The fees and charges imposed under this part are not appealable to the OMB.

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
- OMB 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 OMB 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 municipality's sewer and water systems, charging the owner for the cost of constructing services from the mains to the property line. Under the new Municipal Act,

this power still exists under Part II, General Municipal Powers (s.9 (3) b of the Municipal Act). Enforcement and penalties for this use of power are contained in s.427 (1) of the Municipal Act.

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 OMB, 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.
- 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 (OSTAR) to assist small cities, towns and rural areas in addressing infrastructure improvements. In November 2004, another program (COMRIF) was introduced which also provided combined assistance from the senior governments until early 2007. Subsequently Federal and Provincial Funding have been made available under the Build Canada Fund and Stimulus Fund Programs. Under the specific requirements of these recent programs, the projects must be "shovel ready" and are allocated on a case by case basis.

4.5 Existing Reserves/Reserve Funds

The Town 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 the respective 2009 year-end closing balances.

Reserve	Balance at December 31, 2009
Water General Reserve	\$721,589
Water Development Charge Reserve Fund	\$153,969
Water Lifecycle Reserve	\$13,518
Total	\$889,076

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 municipality's debt capacity is capped at a level where no more than 25% of the municipality's own purpose revenue may be allotted for servicing the debt (i.e. debt charges). Appendix A provides for the Town of Erin's 2010 calculation on Debt Capacity. As can be seen, in Appendix A, the Town's maximum borrowing levels are in the \$11.7 - \$13.5 million range. It should be noted, however, that the issuance of debt should be managed at levels sustainable by the Town. 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 (IO) 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 OSIFA into its operations) IO combines the infrastructure renewal needs of municipalities into an infrastructure investment “pool”. IO 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.

IO 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 IO approach, all borrowers receive the same low interest rate. IO will enter into financial agreement with each municipality subject to technical and credit reviews, for a loan up to the maximum amount of the loan request.

The first round of the former OSIFA'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 OSIFA and IO, 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 December 21, 2010:

Indicative Lending Rates as of December 21, 2010	
Term	Serial
5 Year	2.63%
10 Year	3.53%
15 Year	4.02%
20 Year	4.29%
25 Year	4.47%
30 Year	4.57%
35 Year	4.63%
40 Year	4.67%

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

4.8 Recommended Approach

Of the various alternatives provided in this section, the following are recommended for further consideration of the Town of Erin for the capital expenditures provided in Chapter 2:

Capital Financing	Total
Grants	\$1,175,713
Loan Proceeds	\$46,769
Land Sales Proceeds	\$80,000
Development Charges	\$607,177
Development Contributions	\$125,316
Non-Growth Related Debenture Requirements	\$1,456,892
Lifecycle Reserve	\$1,440,450
Reserves and Reserve Funds	\$349,760
Total Capital Financing	\$5,282,076

Table 4-1 provides for the full capital expenditure and funding program by year for water. As noted above, the Town will need debt financing to assist with funding the non-growth-related capital program.

Table 4-1
Town of Erin
Water Service
Capital Budget Forecast
Inflated \$

Description	Total	Forecast										DC %								
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019									
Capital Expenditures																				
Hillsburgh Pumping Station	1,003,342	226,666	384,493	392,183																
Upgrade Hydro Building Window																				
Pioneer Drive Watermain Project	125,316																			
Test Wells & Monitoring - Wells 7 & 8																				
Pumphouse Upgrades																				
Mill Street - Main Street Watermain	23,334	23,334																		
Water Tower Painting	25,000	25,000																		
C of A Upgrades	25,000	25,000																		
Hydro Bldg Shop - Replace HVAC (shared with GCL)	7,500	7,500																		
Emergency Radio System	11,730	11,730																		
Mountainview Hydrant Installations	80,800	40,000	40,800																	
Water Tower Road Realignment	80,800	40,000	40,800																	
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GIS Mapping	53,060		53,060																	
Meter Replacement Program	344,742																			
Radio Meter Reading Device	55,204																			
Well House Betterments	162,365									162,365										
SCADA System	468,664																			
SCADA System - possible extra costs	117,166																			
Studies																				
Technical Studies - Modelling, Monitoring																				
Water Rate/Financial Plan Study	30,000	30,000																		
Water Supply & Distribution Strategy Report	10,404			10,404																
Bel-Erin Well "Options" Report	5,202			5,202																
Infrastructure Replacement																				
Vehicle Replacement	62,202	30,000																		
Replacement Well House	1,792,639																			
Well House PLC replacement	132,651																			
Watermain Replacements	556,695																			
Water Service Connections Replacements	69,245																			
Total Capital Expenditures	5,282,076	572,816	477,823	756,676	501,779	194,567	121,449	67,570	68,921	656,130	1,864,345									
Capital Financing																				
Govt Grants - ORII	1,003,342	226,666	384,493	392,183																
Grants	172,371																			
Loan Proceeds	46,769	46,769																		
Land Sales Proceeds	80,000	80,000																		
Development Charges	607,177			15,606																
Development Contributions	125,316	125,316																		
Non-Growth Related Debt Service Requirements	1,456,892			348,887	365,000															
Lifecycle Reserve	1,440,450				136,779															
Reserves and Reserve Funds	349,760	94,065	93,330																	
Total Capital Financing	5,282,076	572,816	477,823	756,676	501,779	194,567	121,449	67,570	68,921	656,130	1,864,345									

Note: Shaded projects are eligible for funding through Development Charges - by the % shown in the right hand column.

5. OVERVIEW OF EXPENDITURES AND REVENUES

5. OVERVIEW OF EXPENDITURES AND REVENUES

5.1 Water Operating Expenditures

In this report the forecasted budget figures (2010-2019) are based on the 2010 Operating Budget forecast. 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.

Description	Inflation	Other
<u>Staffing Costs</u>		
Wages/Salaries/Benefits	2%	
Memberships/Associate Fees	2%	
Training/Education/Safety	2%	
Uniforms/Clothing	2%	
<u>Other Operating Expenses</u>		
Office Supplies	2%	
Water Billing Costs	2%	
Insurance	2%	
Misc Expense	2%	
Small Tools/Equipment	2%	
Shop Overhead/Housing Expense	2%	
Hydro	2%	
Property Tax Payment in Lieu	2%	
Small Systems-Supplies & Maintenance	2%	
Telephone/Telemetry/Cells/Pagers	2%	
Vehicle Maintenance/Fuel/Licenses	2%	The budget for this line item was increased by \$500 for 2012 and 2014 (at the request of staff) and then indexed by 2% going forward.
Technical Studies - Consulting Expense	2%	
Consulting Services	2%	
Contracted Equipment/Services	2%	
Well House Supplies/Maintenance	2%	
Tower Supplies/Maintenance	2%	
Distribution Supplies/Maintenance	2%	The budget for this line item be increased by \$32,683 from 2010 to 2011 (at the request of staff) and then indexed by 2% going forward.
Water Testing/Sampling	2%	
Additional IT Support/Licenses	2%	Staff requested the budget for this line item to start in 2013 at \$10,200 and indexed by 2% going forward.
HST Impact		The HST Impact was budgeted for in 2010 only and is absorbed in the other budget line items going forward.

Also note that the transfer to lifecycle reserves have been increased to meet the Water Opportunities and Water Conservation Act, 2010 goals of sustainable infrastructure and water conservation by 2019.

5.2 Water Operating Revenues

The Town has miscellaneous revenue sources to contribute towards operating expenditures. These have been held constant over the period. Note that the largest revenue item relates to the base charge which has been calculated to increase at the same percentage as the volume rates. This is discussed further in Chapter 6. Table 5-1 provides for the operating budget for the water system.

Table 5-1
Town of Erin
Water Services - Operating Budget Forecast
 Inflated \$

Description	Forecast											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Operating Costs												
Wages/Salaries	380,142	384,285	391,970	399,810	407,810	415,970	424,290	432,780	441,440	450,270	459,280	
Payroll Benefits	97,926	97,925	99,880	101,880	103,920	106,000	108,120	110,280	112,490	114,740	117,030	
Office Supplies	7,953	2,000	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380	
Training/Education/Safety	7,821	5,000	5,100	5,200	5,300	5,410	5,520	5,630	5,740	5,850	5,970	
Memberships/Associate Fees	5,081	1,500	1,530	1,560	1,590	1,620	1,650	1,680	1,710	1,740	1,770	
Uniforms/Clothing	1,793	2,000	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380	
Water Billing Costs	948	4,000	4,080	4,160	4,240	4,320	4,410	4,500	4,590	4,680	4,770	
Insurance	10,517	11,045	11,270	11,500	11,730	11,960	12,200	12,440	12,690	12,940	13,200	
Misc Expense	558	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Small Tools/Equipment	6,343	14,000	14,280	14,570	14,860	15,160	15,460	15,770	16,080	16,410	16,740	
Shop Overhead/Housing Expense	11,550	9,000	9,180	9,360	9,550	9,740	9,930	10,130	10,330	10,540	10,750	
Hydro	87,636	90,000	91,800	93,640	95,510	97,420	99,370	101,360	103,390	105,460	107,570	
Property Tax Payment in Lieu	11,479	11,705	11,940	12,180	12,420	12,670	12,920	13,180	13,440	13,710	13,980	
Small Systems-Supplies & Maintenance	98	500	510	520	530	540	550	560	570	580	590	
Telephone/Telemetering/Cells/Pagers	10,769	11,000	11,220	11,440	11,670	11,900	12,140	12,380	12,630	12,880	13,140	
Vehicle Maintenance/Fuel/Licenses	17,790	12,000	12,240	12,990	13,250	14,030	14,310	14,600	14,890	15,190	15,490	
Technical Studies - Consulting Expense	28,519	30,000	30,600	31,210	31,830	32,470	33,120	33,780	34,460	35,150	35,850	
Consulting Services	5,592	3,000	3,060	3,120	3,180	3,240	3,300	3,370	3,440	3,510	3,580	
Contracted Equipment/Services	37,542	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Well House Supplies/Maintenance	6,117	40,000	40,800	41,620	42,450	43,300	44,170	45,050	45,950	46,870	47,810	
Tower Supplies/Maintenance	51,216	6,000	6,120	6,240	6,360	6,490	6,620	6,750	6,890	7,030	7,170	
Distribution Supplies/Maintenance	18,449	30,000	63,940	65,220	66,520	67,850	69,210	70,590	72,000	73,440	74,910	
Water Testing/Sampling		20,000	20,400	20,810	21,230	21,650	22,080	22,520	22,970	23,430	23,900	
Additional IT Support/Licenses					10,200	10,400	10,610	10,820	11,040	11,260	11,490	
HST Impact		2,515										
Sub Total Operating	805,839	789,475	836,040	853,270	880,510	898,620	916,580	934,890	953,590	972,660	992,110	
Capital-Related												
Existing Debt Servicing Costs Principal	122,719	124,917	131,603	136,305	50,024	51,761	53,517	55,092				
Existing Debt Servicing Costs Interest	26,778	24,994	19,309	13,160	6,742	5,125	3,425	1,650				
New Debt (Principal) - Non-Growth Related					27,738	58,144	61,051	64,104	69,995	76,235	129,417	
New Debt (Interest) - Non-Growth Related					17,444	34,307	31,400	28,832	26,832	25,055	52,292	
Sub Total Capital Related	149,497	149,911	150,911	149,465	101,949	149,338	149,393	149,194	96,827	101,290	181,709	
Total Expenditures	955,336	939,386	986,951	1,002,735	982,459	1,047,958	1,065,973	1,084,084	1,050,417	1,073,950	1,173,819	
Revenues												
Base Rate Revenue	161,170	169,199	189,685	210,956	234,610	260,916	290,171	323,012	359,909	401,014	457,660	
Flat Rate Revenue	2,002	2,007	2,247	2,495	2,769	3,074	3,412	3,787	4,204	4,666	5,305	
Penalties & Interest	2,304	2,300	2,350	2,400	2,450	2,500	2,550	2,600	2,650	2,700	2,750	
Connection/Installation Fee	8,567	5,000	5,100	5,200	5,300	5,410	5,520	5,630	5,740	5,850	5,970	
Water Meters Sold/Replaced	225	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Small System Cost Recovery	2,832	3,000	3,060	3,120	3,180	3,240	3,300	3,370	3,440	3,510	3,580	
Misc Revenues	225	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Govt Grants - OSWAP	30,721	30,721	30,721	30,721								
Previous Year's Surplus (Deficit)	(177,519)											
Contributions from Reserves / Reserve Funds		144,856	80,130	54,865	54,850							
Total Operating Revenue	364,125	359,082	315,334	311,836	305,279	277,300	307,153	340,639	378,222	420,060	477,646	
Water Billing Recovery - Operating	591,211	580,304	671,618	690,899	677,180	770,658	758,820	743,444	672,195	653,890	696,174	
Transfer to Life Cycle Reserves	48,735	48,491	49,379	111,317	215,401	222,461	346,154	487,036	699,210	874,553	1,048,716	
Water Billing Recovery - Total	639,946	628,795	720,996	802,216	892,580	993,118	1,104,974	1,230,480	1,371,404	1,528,443	1,744,890	

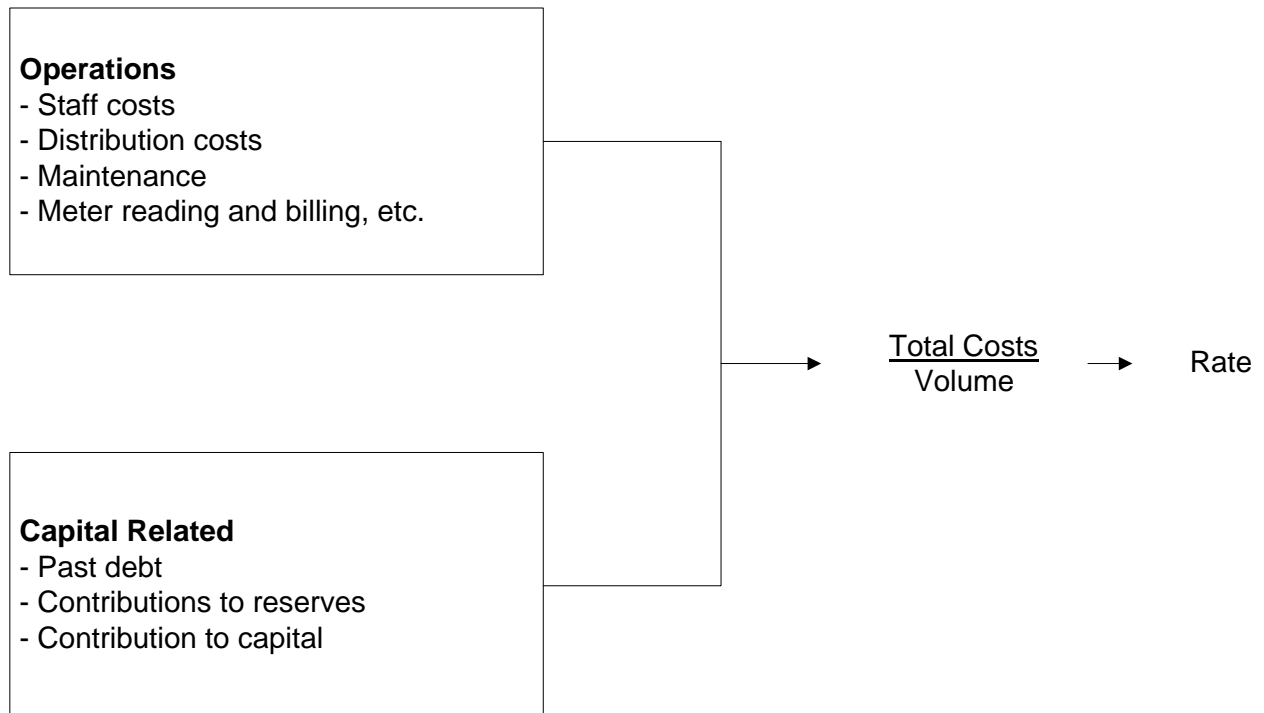
6. PRICING STRUCTURES

6. PRICING STRUCTURES

6.1 Introduction

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

“ANNUAL COSTS”



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

Operations

- Inflation
- Increased maintenance as system ages
- Changes to Provincial legislation

Capital Related

- New capital will be built as areas expand
- Replacement capital needed as system ages
- 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 four basic rate structures employed:

- Flat Rate
- Constant Rate
- Declining Block Rate
- Increasing (or Inverted) Block Rate.

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

Property Assessment: This method incorporates the total costs of providing water into the general requisition or the assessment base of the municipality. This form of collection is a "wealth tax", as payment increases directly with the value of property owned and bears no necessary relationship to actual consumption. This form is easy to administer as the costs to be recovered are incorporated in the calculation for all general services, normally collected through property taxes.

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

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

Declining Block Rates: This rate structure charges a successively lower price for set volumes, as consumption increases through a series of "blocks". That is to say that within set volume ranges, or blocks, the charge per unit is set at one rate. Within the next volume range the charge per unit decreases to lower rate, and so on. Typically, the first, or first and second blocks cover residential and light commercial uses. Subsequent blocks normally are used for heavier commercial and industrial uses. This rate structure

requires the use of meters to record the volume consumed by each type of user. This method requires the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect revenue from rate payers.

Increasing or Inverted Block Rates: The increasing block rate works essentially the same way as the declining block rate, except that the price of water in successive blocks increases rather than declines. Under this method the consumer's bill rises faster with higher volumes used. This rate structure also requires the use of meters to record the volume consumed by each user. This method requires, as with the declining block structure, the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect from rate payers.

6.3 Assessment of Alternative Pricing Structures

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

Cost Recovery

Cost recovery is a prime factor in establishing a particular pricing structure. Costs can be loosely defined into different categories: operations; maintenance; capital; financing; administration. These costs often vary between municipalities and even within a municipality, based on consumption patterns, infrastructure age, economic growth, etc.

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

potentially providing a funding shortfall. Conversely, if the consumption level declines below projections, fixed pricing structures will produce more revenue than actual costs incurred.

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

Administration

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

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

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

The three remaining methods, those being Increasing Block Rate, Constant Rate and Declining Block Rate, have a more dramatic effect on administration. These methods are dependent upon actual consumption and hence involve a major structure in place to administer. First, meters must be installed in all existing units in the municipality and units to be subsequently built must be required to include these meters. Second, meter readings must be undertaken periodically. Hence staff must be available for this purpose or a service contract must be negotiated. Third, the billings process must be expanded to accommodate this process. Billing must be done per a defined period, requiring staff to produce the bills. Lastly, either through increased staffing or by service contract, an annual maintenance program must be set up to ensure meters are working effectively in recording consumed volumes.

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

Equity

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

Conservation

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

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

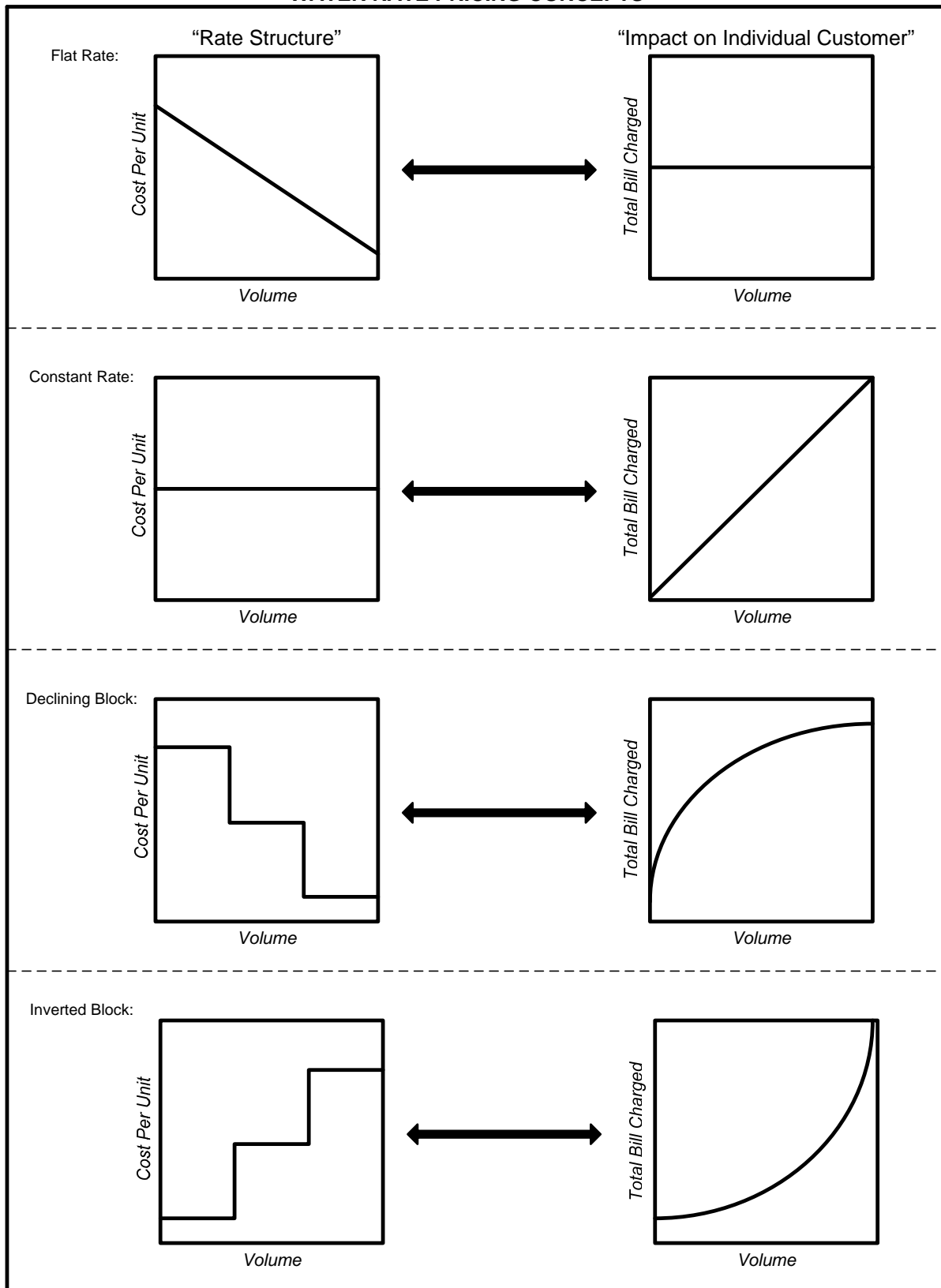
The Declining Block Rate provides a decreasing incentive towards conservation. By creating awareness of volumes consumed, the consumer can reduce his total costs by restricting consumption; however the incentive lessens as more water is consumed, because the marginal cost per unit declines as the consumer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

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

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

Figure 6-1 provides a schematic representation of the various rate structures (note property tax as a basis for revenue recovery has not been presented for comparison, as the proportion of taxes paid varies in direct proportion to the market value of the property). The graphs on the left-hand side of the figure present the cost per unit for each additional amount of water consumed. The right-hand side of the figure presents the impact on the customer's bill as the volume of water increases. 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 (Inverted) Block	Cost per unit increases as threshold targets are achieved	Bill increases at a faster rate as volumes increase

6.4 Rate Structures in Ontario

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

Historically, the development of a base charge often reflected either the recovery of meter reading/billing/collection costs, plus administration or those costs plus certain fixed costs (such as capital contributions or reserve contributions). More recently, many municipalities have started to establish base charges based on ensuring a secure portion of the revenue stream which does not vary with volume consumption. Selection of the quantum of the base charge is a matter of policy selected by individual municipalities.

6.5 Recommended Rate Structures

Currently, the Town has a base rate for water (based on meter size) as well as a decreasing block rate based on m³ of consumption.

Town of Erin
2010 – Water Billing Rates

Base Charge (per month)	All Other Residential Users	\$9.05
	2"	\$18.10
	4"	\$36.20
Volume Charge - per m ³ (per quarter)	0-167.7 m ³	\$1.97
	>167.7 m ³	\$1.28

There is also a non-metered rate (flat rate) for those water customers who do not have meters (where installation of meters is deemed by the Town to be impractical). The monthly consumption charge per unit for those units is calculated by using the annual average water consumption (cubic metre) for each system, divided by twelve months and applying the water consumption rates. The non-metered water rates (monthly) are shown below:

Non-Metered Water Rates		
Area	Monthly Consumption (m ³)	2010 Monthly Charge
Erin	25.00	\$49.25
Hillsburgh	30.30	\$59.69
Belerin	45.40	\$89.44
Mountainview	21.25	\$41.86

The use of the base charge and consumption charge has been continued. It is noted that a decreasing block rate is currently being used and benefits users where the average volume per quarter exceeds 167.7 m³. This has been reviewed by Staff and, based on discussions, appears to benefit a nominal number of customers and hence, the Town has decided to utilize a constant rate (i.e. one volume rate) for 2011 onward.

As noted in Chapter 5 and for use in Chapter 7, Table 6-1 provides for the calculation of the base charge revenue. Table 6-2 provides for the calculation of the flat rate charge revenue. The base charge and the flat rate charge have been adjusted annually to increase at the same rate as the consumption rate charge in each year of the forecast. The number of customers serviced annually is provided in Table 1-1.

Table 6-1
Town of Erin
Base Charge - Water

Water	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Residential:										
Existing Single Residential	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234	1,234
New - Growth Single Residential	1	2	4	6	8	10	14	19	24	29
Total Single Residential Customers	1,235	1,236	1,238	1,240	1,242	1,244	1,248	1,253	1,258	1,263
Existing Multi-Residential	204	204	204	204	204	204	204	204	204	204
Total Multi-Residential Customers	204	204	204	204	204	204	204	204	204	204
Total Residential Customers	1,439	1,440	1,442	1,444	1,446	1,448	1,452	1,457	1,462	1,467
Residential Base Charge:										
Monthly Residential Base Charge	\$9.05	\$10.14	\$11.25	\$12.49	\$13.86	\$15.39	\$17.08	\$18.96	\$21.04	\$23.93
Annual Residential Base Charge	\$108.60	\$121.63	\$135.01	\$149.86	\$166.35	\$184.65	\$204.96	\$227.50	\$252.53	\$287.13
Total Residential Base Charge Revenue	\$156,275	\$175,150	\$194,687	\$216,402	\$240,539	\$267,367	\$297,495	\$331,357	\$369,069	\$421,072
Non-Residential:										
Existing										
Meter Customers < 2"	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
2" Meter Customers	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
4" Meter Customers	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
New Customers - assumed at < 2"	3.00	3.50	4.50	5.50	6.50	7.50	8.50	9.50	10.50	11.50
Total Non-Residential Customers	104.00	104.50	105.50	106.50	107.50	108.50	109.50	110.50	111.50	112.50
Non-Residential:										
Monthly Non-Residential Base Charge										
Meter < 2"	\$9.05	\$10.14	\$11.25	\$12.49	\$13.86	\$15.39	\$17.08	\$18.96	\$21.04	\$23.93
2" Meter	\$18.10	\$20.27	\$22.50	\$24.98	\$27.72	\$30.77	\$34.16	\$37.92	\$42.09	\$47.85
4" Meter	\$36.20	\$40.54	\$45.00	\$49.95	\$55.45	\$61.55	\$68.32	\$75.83	\$84.18	\$95.71
Annual Non-Residential Base Charge:										
Meter < 2"	\$108.60	\$121.63	\$135.01	\$149.86	\$166.35	\$184.65	\$204.96	\$227.50	\$252.53	\$287.13
2" Meter	\$217.20	\$243.26	\$270.02	\$299.73	\$332.70	\$369.29	\$409.91	\$455.00	\$505.06	\$574.25
4" Meter	\$434.40	\$486.53	\$540.05	\$599.45	\$665.39	\$738.58	\$819.83	\$910.01	\$1,010.11	\$1,148.51
Non-Residential Base Charge Revenue										
Meter < 2"	\$10,099.80	\$11,372.59	\$12,758.59	\$14,311.90	\$16,052.55	\$18,002.98	\$20,188.26	\$22,636.48	\$25,379.01	\$29,143.37
2" Meter	\$1,954.80	\$2,189.38	\$2,430.21	\$2,697.53	\$2,994.26	\$3,323.63	\$3,689.23	\$4,095.04	\$4,545.50	\$5,168.28
4" Meter	\$668.80	\$973.06	\$1,080.09	\$1,198.90	\$1,330.78	\$1,477.17	\$1,639.66	\$1,820.02	\$2,020.22	\$2,297.01
Total Non-Residential Base Charge Revenue	\$12,923	\$14,535	\$16,269	\$18,208	\$20,378	\$22,804	\$25,517	\$28,552	\$31,945	\$36,609
Total Annual Revenue	\$169,199	\$189,685	\$210,956	\$234,610	\$260,916	\$290,171	\$323,012	\$359,909	\$401,014	\$457,680

Table 6-2
Town of Erin
Flat Rate Charge - Water

Water	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Existing Flat Rate Customers	7	7	7	7	7	7	7	7	7	7
Flat Rate Charge	\$286.67	\$321.07	\$356.39	\$395.59	\$439.10	\$487.41	\$541.02	\$600.53	\$666.59	\$757.92
Total Flat Rate Revenue	\$2,006.68	\$2,247.48	\$2,494.70	\$2,769.12	\$3,073.73	\$3,411.84	\$3,787.14	\$4,203.72	\$4,666.13	\$5,305.45

**7. ANALYSIS OF WATER RATES
AND
POLICY MATTERS**

7. ANALYSIS OF WATER AND WASTEWATER RATES AND POLICY MATTERS

7.1 Introduction

To summarize the analysis undertaken thus far, Chapter 2 reviewed capital-related issues and responds to the provincial directives to maintain and upgrade infrastructure to required levels. Chapter 4 provided a review of capital financing options to which lifecycle reserve contributions will be the predominant basis for financing future capital replacement. Chapter 5 established the 10-year operating forecast of expenditures including an annual lifecycle capital replacement reserve contribution. Non-rate revenues (including base charge revenues) to assist in offsetting the charges for volumetric rates were also identified in Chapter 5. This chapter will provide for the calculation of the rates over the next 10-year period. These calculations will be based on the net operating expenditures provided in Chapter 5, divided by the water consumption forecast and wastewater volumes provided in Section 1.7.

7.2 Water Rates

Based on the discussion of rate structures provided in section 6.5 and the recommendation to continue with the generally present structures (i.e. no declining rate), the rates are calculated in Table 7-1. The Table takes the net recoverable amounts from Table 5-1 (the product of total expenditures plus lifecycle cost less the non-rate revenues) and completes the calculation by dividing by the consumption into the net expenditures to calculate the volume rates. It is noted that discussions have been undertaken with staff regarding the potential rates. Detailed calculations are provided in Appendix C. A summary of the recommended rates are as follows:

Water Rate Summary

Annual Customer Water Bill – Based on 190 m³ of usage and ¾" meter

Description	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Monthly Base Rate	\$9.05	\$10.14	\$11.25	\$12.49	\$13.86	\$15.39	\$17.08	\$18.96	\$21.04	\$23.93
Rate 1 -	\$1.97									
Rate 2 -	\$1.28									
Constant Rate		\$2.21	\$2.45	\$2.72	\$3.02	\$3.35	\$3.72	\$4.13	\$4.58	\$5.21
Annual Base Rate	\$108.60	\$121.63	\$135.01	\$149.86	\$166.35	\$184.65	\$204.96	\$227.50	\$252.53	\$287.13
Rate 1 Consumption	190									
Consumption		190	190	190	190	190	190	190	190	190
Annual Consumption Rate	\$374.30	\$419.22	\$465.33	\$516.52	\$573.33	\$636.40	\$706.40	\$784.11	\$870.36	\$989.61
Total Annual Bill	\$482.90	\$540.85	\$600.34	\$666.38	\$739.68	\$821.05	\$911.36	\$1,011.61	\$1,122.89	\$1,276.74
%Increase - Total Bill		12.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	13.7%

Based on the discussions with staff, three options have been calculated for this report. The first option, (as shown in Appendix C) calculates the rates based on 100% sustainability by the end of the ten year forecast period, with a fairly even level of annual increase, averaging 11.4% annual increase. The second option, (as shown in Appendix D) also calculates the rates based on 100% sustainability by the end of the ten year forecast period, with an increase of 20% in 2011, followed by an average of 10.4% annual increase for the remainder of the forecast. The third option, (as shown in Appendix E) calculates the rates based on 50% sustainability by the end of the ten year forecast period, with the annual increases averaging 7.6%.

8. CONCLUSIONS AND OBSERVATIONS

8. CONCLUSIONS AND OBSERVATIONS

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 requirements of Regulation 453/07 and the principles provided in SWSSA. The forecast rates provide for the potential rate charges to be considered by council for each budget year. At this time, the rates are anticipated to keep pace generally with inflation over the median term.

The financial review provided herein presents the basis for meeting the legislative requirements for approval of the Town's licence to operate a water system. At this time no formal approval of the long term rates is required however the adoption of the O.Reg. 453/07 report (under separate cover) is mandatory. This analysis provides the foundation for the mandatory report. As the legislation considers this report "a living document" it will provide a basis for annual review during the Town's capital and operating budget process.

APPENDIX A
2010 DEBT CAPACITY CALCULATIONS

Appendix A
Town of Erin
Debt Capacity Calculation
(Based on 2008 FIR)

Section	Description	MMAH FIR Code	\$
1.0	GROSS DEBT CHARGES		
1.1	Principal	SLC 74 3099 01	219,360
1.2	Interest	SLC 74 3099 02	92,441
1.3	Subtotal		311,801
2.0	DEBT CHARGES ON OCWA PROVINCIAL PROJECT		
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	Sewer Projects - For this Municipality only	SLC 74 2830 03	-
2.4	Sewer Projects - Share of integrated project(s)	SLC 74 2840 03	-
2.5	Subtotal		-
3.0	Payments for long term commitments and liabilities financed from revenue fund and approved by the OMB or Council	SLC 42 6010 01	-
4.0	Subtotal - Debt Charges	Add lines 1.3, 2.5, 3.0	311,801
5.0	AMOUNTS RECOVERED FROM UNCONSOLIDATED ENTITIES		
5.1	Electricity (principal)	SLC 74 3030 01	-
5.2	Electricity (interest)	SLC 74 3030 02	-
5.3	Gas and Telephone (principal)	SLC 74 3040 01+ SLC 74 3050 01	-
5.4	Gas and Telephone (interest)	SLC 74 3040 02+ SLC 74 3050 02	-
5.5	Subtotal		-
6.0	PAYMENTS TO PROVINCE FOR DOWNTOWN REVITALIZATION PROGRAM LOANS	SLC 42 5410 01	-
7.0	DEBT CHARGES FOR TILE DRAINAGE AND SHORELINE ASSISTANCE	SLC 40 1850 02 + SLC 40 1850 08	-
8.0	Subtotal - Debt Charges to be Excluded	Add lines 5.5,6.0,7.0	-
9.0	NET DEBT CHARGES	Subtract line 8.0 from 4.0	311,801
10.0	TOTAL REVENUE FUND REVENUES	SLC 10 9910 01	7,814,244
11.0	PAYMENTS TO ONTARIO IN RESPECT OF DOWNTOWN REVITALIZATION PROGRAM	SLC 42 5410 01	-
12.0	FEES FOR TILE DRAINAGE AND SHORELINE ASSISTANCE	SLC 12 1850 04	-
13.0	GRANT FROM GOVERNMENT OF ONTARIO, GOVERNMENT OF CANADA AND OTHER MUNICIPALITIES		
13.1	Ontario Grants	SLC 10 0699 01 + SLC 10 0810 01	1,402,216
13.2	Canada Grants	SLC 10 0820 01	3,500
13.3	Other Municipalities	SLC 10 1099 01	46,900
13.4	Subtotal		1,452,616
14.0	FEES AND REVENUES FOR JOINT LOCAL BOARDS, FOR HOMES FOR THE AGED		
15.0	NET REVENUE FUND REVENUES	Lines 10 less 11,12,13.2,14	6,361,628
16.0	25% OF NET REVENUE FUND REVENUE		1,590,407
17.0	ANNUAL REPAYMENT LIMIT	25% of Net Revenue Fund Revenues less Net Debt Charges	1,278,606

Debt Capacity Ratio 5%

For Illustration Purposes Debt Availability

If the municipality could borrow at 7% or 9% annually, the annual repayment limit shown on line 17 above would allow it to undertake additional long-term borrowing as follows:

7% Debenture Rate For:

20 Years	\$13,545,570
15 Years	\$11,645,433
10 Years	\$8,980,393
5 Years	\$5,242,537

9% Debenture Rate For:

20 Years	\$11,671,813
15 Years	\$10,306,445
10 Years	\$8,205,656
5 Years	\$4,973,331

APPENDIX B
WATER SYSTEM INVENTORY DATA

Appendix B
Town of Erin

Summary of Water Infrastructure

Area	Total Replacement Value	Amount to be funded in 10 year forecast	Net Replacement for Future Lifecycle	Annual Lifecycle Replacement
Water Facilities	\$8,173,008	\$1,625,000	\$6,548,008	\$386,260
Water Vehicles	\$100,340	\$59,750	\$40,590	\$4,316
Water Service Connections	\$2,298,898	\$77,387	\$2,221,511	\$85,198
Watermains	\$18,913,427	\$529,780	\$18,383,646	\$729,953
Total	\$29,485,673	\$2,291,918	\$27,193,755	\$1,205,727

Investment per customer is \$19,122 for water infrastructure.

Amount Invested per User	Total Replacement Value	# of Users	\$ per User
Water	\$29,485,673	1,542	\$19,122

**Table B-2
Town of Erin
Water Facilities**

<i>Item</i>	<i>Location</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>
Water Tower	WILLIAM ST REAR	1990	40	2030	1,377,000	20	76,149	-
Erin Well E5		1983	40	2023	153,000	13	12,673	-
Erin Well E7	46 SIDEROAD 17	1986	40	2026	1,305,600	16	88,918	-
Erin Well E8	5555 EIGHTH LINE	1991	40	2031	1,305,600	21	69,006	-
HB Well H2	5929 TRAFALGAR RD	1988	40	2028	1,305,600	18	79,640	-
HB Well H3	Victoria Park	1969	40	2011	1,500,000	1	in capital budget	1,500,000
Well House PLC				2013	125,000	3	in capital budget	125,000
BelErin Well	5403 WELLINGTON RD 52	1995	40	2035	153,000	25	6,885	-
Water Shop	1 Shamrock Rd	1990	40	2030	887,008	20	49,052	-
Delerin Pressure Building	Delerin Cres	1987	40	2027	61,200	17	3,938	-
Total				612	8,173,008		386,260	1,625,000

**Table B-3
Town of Erin
Water Vehicles**

<i>Item</i>	<i>Unit Number</i>	<i>Vin Number</i>	<i>Model</i>	<i>Model Year</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>
2002 Chevrolet Express Cargo	12	1GCFG25M421245927	Chevrolet	2002	8	2010	30,000	0	in capital budget	30,000
2004 Chevrolet Pick-up	11	1GCEK14X24Z130859	Chevrolet	2004	10	2014	29,750	4	in capital budget	29,750
2007 Chevrolet Express	25	1GBJG31207112033	Chevrolet	2007	13	2020	40,590	10		-
Total							100,340		4,316	59,750

Table B-4
Town of Erin
Water Service Connections

Section Number	Item Description	Name of Street	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Replacement Costs	Years until Replacement	Amount to be included in 10 year Forecast
00340	250 mm - PVC	Erin - 17th Sideroad (Shamrock)	250	PVC	1995	75	2070	74,229	60	-
00345	250 mm - PVC	Erin - 17th Sideroad (Shamrock)	250	PVC	1995	75	2070	55,371	60	-
01547	250 mm - PVC	Erin - Armstrong St.	250	PVC	2005	75	2080	61,317	70	-
01640	150 mm - PVC	Erin - Aspen Cr.	150	PVC	2005	75	2080	15,831	70	-
01640	50 mm - PVC	Erin - Aspen Cr.	50	PVC	2005	75	2080	10,177	70	-
07400	150 mm - Ductile Iron	Erin - Boland Dr.	150	Ductile Iron	1975	50	2025	11,818	15	-
03000	150 mm - PVC	Erin - Carberry St.	150	PVC	1985	75	2060	17,582	50	-
03100	100 mm - PVC	Erin - Carberry St.	100	PVC	1985	75	2060	2,480	50	-
03010	100 mm - Cast iron	Erin - Carberry St.	100	Cast iron	1985	50	2035	3,830	25	-
02600	150 mm - Cast iron	Erin - Centre St.	150	Cast iron	1965	60	2025	16,013	15	-
02300	100 mm - Cast iron	Erin - Charles St.	100	Cast iron	1985	50	2035	10,286	25	-
02450	100 mm - Cast iron	Erin - Church Blvd.	100	Cast iron	1965	60	2025	7,551	15	-
02500	150 mm - Cast iron	Erin - Church Blvd.	150	Cast iron	1965	60	2025	7,879	15	-
20005	100 mm - PVC	Erin - Church Blvd./Centre St. E	100	PVC	1985	75	2060	6,566	50	-
06010	150 mm - PVC	Erin - Church St. E.	150	PVC	1985	75	2060	8,572	50	-
02400	150 mm - Cast iron	Erin - Church St. W	150	Cast iron	1965	46	2011	11,490	1	11,490
06600	150 mm - Cast iron	Erin - Cross St.	150	Cast iron	1975	50	2025	6,894	15	-
14900	150 mm - Cast iron	Erin - Daniel St.	150	Cast iron	1965	50	2015	8,900	5	8,900
15000	150 mm - Cast iron	Erin - Daniel St.	150	Cast iron	1965	50	2015	21,907	5	21,907
16000	200 mm - Cast iron	Erin - Daniel St.	200	Cast iron	1965	50	2015	17,764	5	17,764
17000	150 mm - Cast iron	Erin - Daniel St.	150	Cast iron	1965	50	2015	9,156	5	9,156
17000	200 mm - Cast iron	Erin - Daniel St.	200	Cast iron	1965	50	2025	17,618	15	-
17000	150 mm - PVC	Erin - Daniel St./Wheellock Ease	150	PVC	1985	75	2060	15,101	50	-
01522	150 mm - PVC	Erin - Delambro Dr.	150	PVC	2005	75	2080	32,610	70	-
01522	250 mm - PVC	Erin - Delambro Dr.	250	PVC	2005	75	2080	44,100	70	-
04300	150 mm - Ductile Iron	Erin - Delerin Cresc.	150	Ductile Iron	1975	50	2025	32,172	15	-
01190	150 mm - PVC	Erin - Dianne Rd.	150	PVC	2005	75	2080	22,469	70	-
01191	150 mm - PVC	Erin - Dianne Rd.	150	PVC	2005	75	2080	948	70	-
01115	200 mm - PVC	Erin - Dundas St. (Eighth Line)	200	PVC	1985	75	2060	14,408	50	-
01120	200 mm - PVC	Erin - Dundas St. (Eighth Line)	200	PVC	1985	75	2060	19,332	50	-
01122	200 mm - PVC	Erin - Dundas St. (Eighth Line)	200	PVC	1985	75	2060	16,414	50	-
00370	150 mm - Cast iron	Erin - Dundas St. E.	150	Cast iron	1965	612	2577	7,332	567	-
12000	200 mm - Cast iron	Erin - Dundas St. E.	200	Cast iron	1975	50	2025	8,791	15	-
13000	150 mm - Cast iron	Erin - Dundas St. E.	150	Cast iron	1965	60	2025	28,780	15	-
13000	200 mm - Cast iron	Erin - Dundas St. E.	200	Cast iron	1965	60	2025	4,705	15	-
10000	200 mm - Ductile Iron	Erin - Dundas St. W.	200	Ductile Iron	1975	50	2025	32,063	15	-
11000	250 mm - PVC	Erin - Dundas St. W.	250	PVC	1985	75	2060	23,126	50	-
06300	150 mm - Cast iron	Erin - English St.	150	Cast iron	1965	60	2025	8,718	15	-
04000	150 mm - Ductile Iron	Erin - Erin Heights Dr.	150	Ductile Iron	1975	50	2025	24,330	15	-

Table B-4
Town of Erin
Water Service Connections

Section Number	Item Description	Name of Street	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Replacement Costs	Years until Replacement	Amount to be included in 10 year Forecast
04000	200 mm - Ductile Iron	Erin - Erin Heights Dr.	200	Ductile Iron	1975	50	2025	37,352	15	-
07540	150 mm - PVC	Erin - Erin Park Dr.	150	PVC	1985	75	2060	11,563	50	-
07540	200 mm - PVC	Erin - Erin Park Dr.	200	PVC	1985	75	2060	25,862	50	-
06400	150 mm - Cast iron	Erin - Erindale Dr.	150	Cast iron	1975	50	2025	7,441	15	-
06500	150 mm - Cast iron	Erin - Erindale Dr.	150	Cast iron	1975	50	2025	17,290	15	-
06510	150 mm - Cast iron	Erin - Erindale Dr.	150	Cast iron	1975	50	2025	16,305	15	-
06700	150 mm - Cast iron	Erin - Erinlea Cresc.	150	Cast iron	1975	50	2025	12,037	15	-
06710	150 mm - Cast iron	Erin - Erinlea Cresc.	150	Cast iron	1975	50	2025	27,868	15	-
07500	200 mm - PVC	Erin - Erinville Dr.	200	PVC	1985	75	2060	14,153	50	-
07510	200 mm - PVC	Erin - Erinville Dr.	200	PVC	1985	75	2060	29,910	50	-
01523	200 mm - PVC	Erin - Forest Ridge Rd.	200	PVC	2005	75	2080	9,739	70	-
20010	200 mm - PVC	Erin - Guelph Rd.	200	PVC	2002	75	2077	62,119	67	-
05000	150 mm - PVC	Erin - Hill St.	150	PVC	2002	50	2052	7,149	42	-
05010	150 mm - Cast iron	Erin - Hill St.	150	Cast iron	1985	50	2035	16,232	25	-
20025	250 mm - PVC	Erin - Hill St.	250	PVC	1985	75	2060	9,849	50	-
01541	150 mm - PVC	Erin - Kenneth Ave	150	PVC	2005	75	2080	21,630	70	-
01555	150 mm - PVC	Erin - Leenders Lane	150	PVC	2005	75	2080	40,343	70	-
20015	150 mm - PVC	Erin - Lorne St.	150	PVC	1985	75	2060	9,739	50	-
20000	150 mm - PVC	Erin - Main St.	150	PVC	1975	75	2050	21,412	40	-
20000	250 mm - PVC	Erin - Main St.	250	PVC	2002	75	2077	241,144	67	-
07300	150 mm - Ductile Iron	Erin - May St.	150	Ductile Iron	1985	50	2035	7,587	25	-
01630	150 mm - PVC	Erin - McCullogh Dr.	150	PVC	2005	75	2080	43,480	70	-
01631	150 mm - PVC	Erin - McCullogh Dr.	150	PVC	2005	75	2080	657	70	-
05500	150 mm - PVC	Erin - Millwood Rd.	150	PVC	2005	75	2080	29,363	70	-
07000	150 mm - Cast iron	Erin - Pine St.	150	Cast iron	1965	60	2025	8,827	15	-
07010	150 mm - Ductile Iron	Erin - Pine St.	150	Ductile Iron	1985	50	2035	8,025	25	-
07200	150 mm - Cast iron	Erin - Ross St.	150	Cast iron	1965	60	2025	12,694	15	-
06200	100 mm - PVC	Erin - Scotch St.	100	PVC	1985	75	2060	9,228	50	-
06210	150 mm - Cast iron	Erin - Scotch St.	150	Cast iron	1975	50	2025	8,608	15	-
06220	150 mm - Cast iron	Erin - Scotch St.	150	Cast iron	1975	50	2025	22,579	15	-
06230	150 mm - Cast iron	Erin - Scotch St./Erinlea Cresc.	150	Cast iron	1975	50	2025	5,982	15	-
06100	200 mm - Cast iron	Erin - Spring St.	200	Cast iron	1955	60	2015	8,171	5	8,171
03100	100 mm - Cast iron	Erin - Sunnyside Dr.	100	Cast iron	1965	60	2025	19,624	15	-
07520	200 mm - PVC	Erin - Thompson Cresc.	200	PVC	1985	75	2060	53,401	50	-
06800	150 mm - Cast iron	Erin - Tomwell Cresc.	150	Cast iron	1975	50	2025	19,989	15	-
20020	150 mm - PVC	Erin - Trailer Park Service	150	PVC	1995	75	2070	1,313	60	-
01550	150 mm - PVC	Erin - Treelong Cres.	150	PVC	2005	75	2080	33,376	70	-
05200	150 mm - Cast iron	Erin - Water St.	150	Cast iron	1965	60	2025	11,454	15	-
05620	150 mm - Cast iron	Erin - Water St./Waterford Dr.	150	Cast iron	1965	60	2025	24,877	15	-

Table B-4
Town of Erin
Water Service Connections

Section Number	Item Description	Name of Street	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Replacement Costs	Years until Replacement	Amount to be included in 10 year Forecast
05600	150 mm - Cast iron	Erin - Waterford Dr.	150	Cast iron	1965	60	2025	20,171	15	-
05610	150 mm - Cast iron	Erin - Waterford Dr.	150	Cast iron	1965	60	2025	10,651	15	-
05610	150 mm - PVC	Erin - Waterford Dr.	150	PVC	1995	75	2070	18,311	60	-
04100	200 mm - Ductile Iron	Erin - Wesley Cresc.	200	Ductile Iron	1975	50	2025	22,178	15	-
06420	150 mm - PVC	Erin - Wheelock St	150	PVC	1985	75	2060	8,754	50	-
04200	150 mm - Ductile Iron	Erin - William Rex Cresc.	150	Ductile Iron	1975	50	2025	32,026	15	-
01377	150 mm - Ductile Iron	Hillsburgh - Alice Gt.	150	Ductile Iron	1975	50	2025	5,256	15	-
09000	150 mm - PVC	Hillsburgh - Barbour Dr.	150	PVC	1995	75	2070	48,960	60	-
09000	200 mm - PVC	Hillsburgh - Barbour Dr.	200	PVC	1995	75	2070	7,200	60	-
30000	200 mm - PVC	Hillsburgh - Barbour Walkway	200	PVC	1995	75	2070	7,920	60	-
00252	200 mm - PVC	Hillsburgh - Barker St	200	PVC	1995	75	2070	12,600	60	-
01382	200 mm - PVC	Hillsburgh - Church St.	200	PVC	2005	75	2080	11,160	70	-
01384	200 mm - PVC	Hillsburgh - Church St.	200	PVC	2005	75	2080	2,880	70	-
01385	150 mm - Ductile Iron	Hillsburgh - Church St.	150	Ductile Iron	1975	50	2025	15,336	15	-
01485	150 mm - PVC (TW)	Hillsburgh - Curry Rd.	150	PVC (TW)	1975	50	2025	8,280	15	-
01480	150 mm - PVC (TW)	Hillsburgh - Douglas Cr.	150	PVC (TW)	1975	50	2025	82,800	15	-
01370	150 mm - Ductile Iron	Hillsburgh - Eilan Cr.	150	Ductile Iron	1975	50	2025	39,600	15	-
09020	200 mm - PVC	Hillsburgh - Hill St.	200	PVC	1995	75	2070	24,120	60	-
09020	250 mm - PVC	Hillsburgh - Hill St.	250	PVC	1995	75	2070	8,640	60	-
09030	150 mm - PVC	Hillsburgh - Howe St.	150	PVC	1995	75	2070	21,600	60	-
01407	150 mm - PVC	Hillsburgh - Leader Court	150	PVC	2005	75	2080	28,080	70	-
01409	150 mm - PVC	Hillsburgh - McMurthy Lane	150	PVC	2005	75	2080	6,480	70	-
01360	150 mm - Ductile Iron	Hillsburgh - Mill St.	150	Ductile Iron	1975	50	2025	31,392	15	-
01402	150 mm - Ductile Iron	Hillsburgh - Mill St.	150	Ductile Iron	1975	50	2025	5,904	15	-
00255	150 mm - Ductile Iron	Hillsburgh - Orenville St.	150	Ductile Iron	1975	50	2025	7,200	15	-
00255	150 mm - PVC	Hillsburgh - Orenville St.	150	PVC	1995	75	2070	7,776	60	-
01395	150 mm - PVC (TW)	Hillsburgh - Spruce St.	150	PVC (TW)	1975	50	2025	20,304	15	-
01405	150 mm - PVC	Hillsburgh - Upper Canada Dr.	150	PVC	2005	75	2080	54,360	70	-
09010	150 mm - PVC	Hillsburgh - Wallace Ave.	150	PVC	1995	75	2070	13,320	60	-
01487	200 mm - Ductile Iron	Hillsburgh - Water St.	200	Ductile Iron	1975	50	2025	4,320	15	-
01487	200 mm - PVC (TW)	Hillsburgh - Water St.	200	PVC (TW)	1995	50	2045	4,320	35	-
Total								2,298,898		77,387

**Table B-5
Town of Erin
Watermains**

Section Number	Item Description	Name of Street	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Amount to be included in 10 year Forecast
00340	250 mm - PVC	Erin - 17th Sideroad (Shamrock)	1,018	250	1995	75	2070	622.20	633,089	60	-
00345	250 mm - PVC	Erin - 17th Sideroad (Shamrock)	759	250	1995	75	2070	622.20	472,250	60	-
01547	250 mm - PVC	Erin - Armstrong St.	841	250	2005	75	2080	622.20	522,959	70	-
01640	150 mm - PVC	Erin - Aspen Crt.	217	150	2005	75	2080	586.50	127,271	70	-
01640	50 mm - PVC	Erin - Aspen Crt.	140	50	2005	75	2080	586.50	81,817	70	-
07400	150 mm - Ductile Iron	Erin - Boland Dr.	162	150	1975	55	2030	586.50	95,013	20	-
03000	150 mm - PVC	Erin - Carberry St.	241	150	1985	75	2060	586.50	141,347	50	-
03100	100 mm - PVC	Erin - Carberry St.	34	100	1985	75	2060	586.50	19,941	50	-
03010	100 mm - Cast iron	Erin - Carberry St.	53	100	1985	50	2035	586.50	30,791	25	-
02600	150 mm - Cast iron	Erin - Centre St.	220	150	1965	56	2021	586.50	128,737	11	-
02300	100 mm - Cast iron	Erin - Charles St.	141	100	1985	50	2035	586.50	82,697	25	-
02450	100 mm - Cast iron	Erin - Church Blvd.	104	100	1965	60	2025	586.50	60,703	15	-
02500	150 mm - Cast iron	Erin - Church Blvd.	108	150	1965	56	2021	586.50	63,342	11	-
20005	100 mm - PVC	Erin - Church Blvd./Centre St. E	90	100	1985	75	2060	586.50	52,785	50	-
06010	150 mm - PVC	Erin - Church St. E..	118	150	1985	75	2060	586.50	68,914	50	-
02400	150 mm - Cast iron	Erin - Church St. W	158	150	1965	56	2021	586.50	92,374	11	-
06600	150 mm - Cast iron	Erin - Cross St.	95	150	1975	50	2025	586.50	55,424	15	-
14900	150 mm - Cast iron	Erin - Daniel St.	122	150	1965	53	2018	586.50	71,553	8	71,553
15000	150 mm - Cast iron	Erin - Daniel St.	293	150	1965	53	2018	586.50	171,845	8	171,845
16000	200 mm - Cast iron	Erin - Daniel St.	244	200	1965	53	2018	606.90	147,780	8	147,780
17000	200 mm - Cast iron	Erin - Daniel St.	228	200	1965	53	2018	606.90	138,603	8	138,603
17000	200 mm - Cast iron	Erin - Daniel St.	13	200	1965	56	2021	606.90	7,964	11	-
17000	150 mm - Cast iron	Erin - Daniel St.	126	150	1965	60	2025	586.50	73,606	15	-
17000	150 mm - PVC	Erin - Daniel St./Wheellock Ease	207	150	1985	75	2060	586.50	121,406	50	-
01522	250 mm - PVC	Erin - Delambro Dr.	605	250	2005	75	2080	622.20	376,120	70	-
01522	150 mm - PVC	Erin - Delambro Dr.	447	150	2005	75	2080	586.50	262,166	70	-
04300	150 mm - Ductile Iron	Erin - Delerin Cresc.	441	150	1975	50	2025	586.50	258,647	15	-
01190	150 mm - PVC	Erin - Dianne Rd.	308	150	2005	75	2080	586.50	180,642	70	-
01191	150 mm - PVC	Erin - Dianne Rd.	13	150	2005	75	2080	586.50	7,625	70	-
01115	200 mm - PVC	Erin - Dundas St. (Eighth Line)	198	200	1985	75	2060	606.90	119,863	50	-
01120	200 mm - PVC	Erin - Dundas St. (Eighth Line)	265	200	1985	75	2060	606.90	160,829	50	-
01122	200 mm - PVC	Erin - Dundas St. (Eighth Line)	225	200	1985	75	2060	606.90	136,553	50	-
00370	150 mm - Cast iron	Erin - Dundas St. E.	101	150	1965	56	2021	586.50	58,943	11	-
12000	200 mm - Cast iron	Erin - Dundas St. E.	121	200	1975	50	2025	606.90	73,131	15	-
13000	150 mm - Cast iron	Erin - Dundas St. E.	395	150	1965	56	2021	586.50	231,374	11	-
13000	200 mm - Cast iron	Erin - Dundas St. E.	65	200	1965	56	2021	606.90	39,145	11	-
10000	200 mm - Ductile Iron	Erin - Dundas St. W.	440	200	1975	50	2025	606.90	266,733	15	-
11000	250 mm - PVC	Erin - Dundas St. W.	317	250	1985	75	2060	622.20	197,237	50	-
06300	150 mm - Cast iron	Erin - English St.	120	150	1965	60	2025	586.50	70,087	15	-
04000	150 mm - Ductile Iron	Erin - Erin Heights Dr.	334	150	1975	50	2025	586.50	195,598	15	-
04000	200 mm - Ductile Iron	Erin - Erin Heights Dr.	512	200	1975	50	2025	606.90	310,733	15	-
07540	150 mm - PVC	Erin - Erin Park Dr.	159	150	1985	75	2060	586.50	92,960	50	-

**Table B-5
Town of Erin
Watermains**

Section Number	Item Description	Name of Street	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Amount to be included in 10 year Forecast
07540	200 mm - PVC	Erin - Erin Park Dr.	355	200	1985	75	2060	606.90	215,146	50	-
06400	150 mm - Cast iron	Erin - Erindale Dr.	102	150	1975	50	2025	586.50	59,823	15	-
06500	150 mm - Cast iron	Erin - Erindale Dr.	237	150	1975	50	2025	586.50	139,001	15	-
06510	150 mm - Cast iron	Erin - Erindale Dr.	224	150	1975	50	2025	586.50	131,083	15	-
06700	150 mm - Cast iron	Erin - Erinlea Cresc.	165	150	1975	50	2025	586.50	96,773	15	-
06710	150 mm - Cast iron	Erin - Erinlea Cresc.	382	150	1975	50	2025	586.50	224,043	15	-
07500	200 mm - PVC	Erin - Erinville Dr.	194	200	1985	75	2060	606.90	117,739	50	-
07510	200 mm - PVC	Erin - Erinville Dr.	410	200	1985	75	2060	606.90	248,829	50	-
01523	200 mm - PVC	Erin - Forest Ridge Rd.	134	200	2005	75	2080	606.90	81,021	70	-
20010	200 mm - PVC	Erin - Guelph Rd.	852	200	2002	75	2077	606.90	516,775	67	-
05000	150 mm - PVC	Erin - Hill St.	98	150	2002	50	2052	586.50	57,477	42	-
05010	150 mm - Cast iron	Erin - Hill St.	223	150	1985	50	2035	586.50	130,496	25	-
20025	250 mm - PVC	Erin - Hill St.	135	250	1985	75	2060	622.20	83,997	50	-
01541	150 mm - PVC	Erin - Kenneth Ave	297	150	2005	75	2080	586.50	173,897	70	-
01555	150 mm - PVC	Erin - Leenders Lane	553	150	2005	75	2080	586.50	324,335	70	-
20015	150 mm - PVC	Erin - Lorne St.	134	150	1985	75	2060	586.50	78,298	50	-
20000	150 mm - PVC	Erin - Main St.	294	150	1975	75	2050	586.50	172,138	40	-
20000	250 mm - PVC	Erin - Main St.	3,306	250	2002	75	2077	622.20	2,056,682	67	-
07300	150 mm - Ductile Iron	Erin - May St.	104	150	1985	50	2035	586.50	60,996	25	-
01630	150 mm - PVC	Erin - McCullogh Dr.	596	150	2005	75	2080	586.50	349,554	70	-
01631	150 mm - PVC	Erin - McCullogh Dr.	9	150	2005	75	2080	586.50	5,279	70	-
05500	150 mm - PVC	Erin - Millwood Rd.	403	150	2005	75	2080	586.50	236,066	70	-
07000	150 mm - Cast iron	Erin - Pine St.	121	150	1965	60	2025	586.50	70,967	15	-
07010	150 mm - Ductile Iron	Erin - Pine St.	110	150	1985	50	2035	586.50	64,515	25	-
07200	150 mm - Cast iron	Erin - Ross St.	174	150	1965	56	2021	586.50	102,051	11	-
06200	100 mm - PVC	Erin - Scotch St.	127	100	1985	75	2060	586.50	74,192	50	-
06210	150 mm - Cast iron	Erin - Scotch St.	118	150	1975	50	2025	586.50	69,207	15	-
06220	150 mm - Cast iron	Erin - Scotch St.	310	150	1975	50	2025	586.50	181,522	15	-
06230	150 mm - Cast iron	Erin - Scotch St./Erinlea Cresc.	82	150	1975	50	2025	586.50	48,093	15	-
06100	200 mm - Cast iron	Erin - Spring St.	112	200	1955	66	2021	606.90	67,973	11	-
03100	100 mm - Cast iron	Erin - Sunnyside Dr.	269	100	1965	60	2025	586.50	157,769	15	-
07520	200 mm - PVC	Erin - Thompson Cresc.	732	200	1985	75	2060	606.90	444,251	50	-
06800	150 mm - Cast iron	Erin - Tomwell Cresc.	274	150	1975	50	2025	586.50	160,701	15	-
20020	150 mm - PVC	Erin - Trailer Park Service	18	150	1995	75	2070	586.50	10,557	60	-
01550	150 mm - PVC	Erin - Treelong Cres.	458	150	2005	75	2080	586.50	268,324	70	-
05200	150 mm - Cast iron	Erin - Water St.	157	150	1965	56	2021	586.50	92,081	11	-
05620	150 mm - Cast iron	Erin - Water St./Waterford Dr.	341	150	1965	60	2025	586.50	199,997	15	-
05600	150 mm - Cast iron	Erin - Waterford Dr.	277	150	1965	60	2025	586.50	162,167	15	-
05610	150 mm - Cast iron	Erin - Waterford Dr.	146	150	1965	56	2021	586.50	85,629	11	-
05610	150 mm - PVC	Erin - Waterford Dr.	251	150	1995	75	2070	586.50	147,212	60	-
04100	200 mm - Ductile Iron	Erin - Wesley Cresc.	304	200	1975	50	2025	606.90	184,498	15	-
06420	150 mm - PVC	Erin - Wheelock St	120	150	1985	75	2060	586.50	70,380	50	-

Table B-5
Town of Erin
Watermains

Section Number	Item Description	Name of Street	Length (m)	Diameter (mm)	Year Installed	Estimated Life	Replacement Year	Replacement Cost / m	Total Main Replacement Costs	Years until Replacement	Amount to be included in 10 year Forecast
04200	150 mm - Ductile Iron	Erin - William Rex Cresc.	439	150	1975	50	2025	586.50	257,474	15	-
01377	150 mm - Ductile Iron	Hillsburgh - Alice Gt.	73	150	1975	50	2025	586.50	42,815	15	-
09000	200 mm - PVC	Hillsburgh - Barbour Dr.	100	200	1995	75	2070	606.90	60,690	60	-
09000	150 mm - PVC	Hillsburgh - Barbour Dr.	680	150	1995	75	2070	586.50	398,820	60	-
30000	200 mm - PVC	Hillsburgh - Barbour Walkway	110	200	1995	75	2070	606.90	66,759	60	-
00252	200 mm - PVC	Hillsburgh - Barker St	175	200	1995	75	2070	606.90	106,208	60	-
01382	200 mm - PVC	Hillsburgh - Church St.	155	200	2005	75	2080	606.90	94,070	70	-
01384	200 mm - PVC	Hillsburgh - Church St.	40	200	2005	75	2080	606.90	24,276	70	-
01385	150 mm - Ductile Iron	Hillsburgh - Church St.	213	150	1975	50	2025	586.50	124,925	15	-
01485	150 mm - PVC (TW)	Hillsburgh - Curry Rd.	115	150	1975	50	2025	586.50	67,448	15	-
01480	150 mm - PVC (TW)	Hillsburgh - Douglas Cr.	1,150	150	1975	50	2025	586.50	674,475	15	-
01370	150 mm - Ductile Iron	Hillsburgh - Eilan Cr.	550	150	1975	50	2025	586.50	322,575	15	-
09020	250 mm - PVC	Hillsburgh - Hill St.	120	250	1995	75	2070	622.20	74,664	60	-
09020	200 mm - PVC	Hillsburgh - Hill St.	335	200	1995	75	2070	606.90	203,312	60	-
09030	150 mm - PVC	Hillsburgh - Howe St.	300	150	1995	75	2070	586.50	175,950	60	-
01407	150 mm - PVC	Hillsburgh - Leader Court	390	150	2005	75	2080	586.50	228,735	70	-
01409	150 mm - PVC	Hillsburgh - McMurphy Lane	90	150	2005	75	2080	586.50	52,785	70	-
01360	150 mm - Ductile Iron	Hillsburgh - Mill St.	436	150	1975	50	2025	586.50	255,714	15	-
01402	150 mm - Ductile Iron	Hillsburgh - Mill St.	82	150	1975	50	2025	586.50	48,093	15	-
00255	150 mm - Ductile Iron	Hillsburgh - Orengville St.	100	150	1975	50	2025	586.50	58,650	15	-
00255	150 mm - PVC	Hillsburgh - Orengville St.	108	150	1995	75	2070	586.50	63,342	60	-
01395	150 mm - PVC (TW)	Hillsburgh - Spruce St.	282	150	1975	50	2025	586.50	165,393	15	-
01405	150 mm - PVC	Hillsburgh - Upper Canada Dr.	755	150	2005	75	2080	586.50	442,808	70	-
09010	150 mm - PVC	Hillsburgh - Wallace Ave.	185	150	1995	75	2070	586.50	108,503	60	-
01487	200 mm - Ductile Iron	Hillsburgh - Water St.	60	200	1975	50	2025	606.90	36,414	15	-
01487	200 mm - PVC (TW)	Hillsburgh - Water St.	60	200	1995	50	2045	606.90	36,414	35	-
Total			31,592						18,913,427		529,780

APPENDIX C
DETAILED WATER RATE CALCULATIONS
100% Sustainability Option 1

Table C-1
Town of Erin
Water Service
Capital Budget Forecast
Uninflated \$

Description	Actual 2009	Total	Forecast							DC %				
			2010	2011	2012	2013	2014	2015	2016		2017	2018	2019	
Capital Expenditures														
Hillsburgh Pumping Station	1,107	980,574	226,666	376,954	376,954									
Upgrade Hydro Building Window	5,022													
Pioneer Drive Watermain Project	8,793	125,316	125,316											
Test Wells & Monitoring - Wells 7 & 8	21,981													
Pumphouse Upgrades	23,573													
Mill Street - Main Street Watermain	-	23,334	23,334											
Water Tower Painting	-	25,000	25,000											
C of A Upgrades	-	25,000	25,000											
Hydro Bldg Shop - Replace HVAC (shared with GCL)	-	7,500	7,500											
Emergency Radio System	-	11,500		11,500										
Mountainview Hydrant Installations	-	80,000	40,000	40,000										
Water Tower Road Realignment	-	80,000	40,000	40,000										
Works Excavac Roll-off	-	37,500		37,500										
GIS Mapping	-	50,000		50,000										
Meter Replacement Program	-	300,000							60,000	60,000	60,000	60,000	60,000	60,000
Radio Meter Reading Device	-	50,000							50,000					
Well House Betterments	-	150,000						150,000						
Well House Betterments	-	400,000										400,000		
SCADA System	-	100,000										100,000		
SCADA System - possible extra costs	-													
Studies														
Technical Studies - Modelling, Monitoring	16,843	30,000	30,000											
Water Rate/Financial Plan Study	-													
Water Supply & Distribution Strategy Report	-	10,000		10,000										100%
Bel-Erin Well "Options" Report	-	5,000		5,000										100%
Infrastructure Replacement														
Vehicle Replacement	-	59,750	30,000							29,750				
Replacement Well House	-	1,500,000											1,500,000	33%
Well House PLC replacement	-	125,000												
Watermain Replacements	-	529,780			264,890									
Water Service Connections Replacements	-	65,897			32,949									
Total Capital Expenditures	77,319	4,771,151	572,816	468,454	727,293	472,839	179,750	110,000	60,000	60,000	60,000	560,000	1,560,000	

Table C-2
Town of Erin
Water Service
Capital Budget Forecast
 Inflated \$

Description	Actual 2009	Total	Forecast										DC %				
			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019					
Capital Expenditures																	
Hillsburgh Pumping Station	1,107	1,003,342	226,666	384,493	392,183												
Upgrade Hydro Building Window	5,022																
Pioneer Drive Watermain Project	8,793	125,316	125,316														
Test Wells & Monitoring - Wells 7 & 8	21,981																
Pumphouse Upgrades	23,573																
Mill Street - Main Street Watermain	-	23,334	23,334														
Water Tower Painting	-	25,000	25,000														
C of A Upgrades	-	25,000	25,000														
Hydro Bldg Shop - Replace HVAC (shared with GCL)	-	7,500	7,500														
Emergency Radio System	-	11,730	11,730														
Mountainview Hydrant Installations	-	80,800	40,000	40,800													
Water Tower Road Realignment	-	80,800	40,000	40,800													
Works Excavac Roll-off	-	39,015	39,015														
GIS Mapping	-	53,060	53,060														
Meter Replacement Program	-	344,742				53,060											
Radio Meter Reading Device	-	55,204															
Well House Betterments	-	162,365						162,365									
SCADA System	-	468,664															
SCADA System - possible extra costs	-	117,166															
Studies																	
Technical Studies - Modelling, Monitoring	16,843	30,000	30,000														
Water Rate/Financial Plan Study	-																
Water Supply & Distribution Strategy Report	-	10,404			10,404												100%
Bel-Erin Well "Options" Report	-	5,202			5,202												100%
Infrastructure Replacement																	
Vehicle Replacement	-	62,202	30,000														
Replacement Well House	-	1,792,639								32,202							33%
Well House PLC replacement	-	132,651				132,651											
Watermain Replacements	-	556,695			275,592	281,103											
Water Service Connections Replacements	-	69,245			34,280	34,965											
Total Capital Expenditures	77,319.22	5,282,076	572,816	477,823	756,676	501,779		194,567		121,449	67,570	68,921	656,130	1,864,345			
Capital Financing																	
Govt Grants - ORI	1,106.96	1,003,342	226,666	384,493	392,183												
Govt Grants - OSTAR Final Claim Adjustment	(7,272.34)																
Grants		172,371															
Loan Proceeds	52,826.65	46,769	46,769														
Land Sales Proceeds	-	80,000	80,000														
Development Charges	-	607,177			15,606												
Development Contributions	8,793.26	125,316	125,316														
Non-Growth Related Debenture Requirements	-	1,456,892			348,887	365,000											
Growth Related Debenture Requirements	-																
Operating Contributions		1,440,450				136,779											
Lifecycle Reserve		349,760	94,065	93,330													
Reserves and Reserve Funds	21,864.69																
Total Capital Financing	77,319.22	5,282,076	572,816	477,823	756,676	501,779		194,567		121,449	67,570	68,921	656,130	1,864,345			

Table C-3
Water Service
Schedule of Non-Growth Related Debenture Repayments
 (new debt incurred in 10 year forecast)

Debenture Year	Principal (Inflated)	Forecast												
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			
2010														
2011	348,887				45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182
2012	365,000				47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269
2013														
2014														
2015	33,785													
2016	34,461													
2017	620,980													
2018	53,779													
2019														
Total Annual Debt Charges	1,456,892				45,182	92,452	92,452	92,452	92,452	96,827	101,290	101,290	181,709	

Table C-4
Town of Erin
Water Service
Water Reserves/ Reserve Funds Continuity

Description	Inflated \$										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	816,458	721,589	497,148	333,399	286,890	239,002	78,936	81,304	83,743	86,255	88,843
Transfer from Operating											
Transfer to Capital	21,865	94,065	93,330			162,365					
Transfer to Operating	118,865	144,856	80,130	54,865	54,850						
Closing Balance	675,728	482,668	323,688	278,534	232,040	76,637	78,936	81,304	83,743	86,255	88,843
Interest	45,861	14,480	9,711	8,356	6,961	2,299	2,368	2,439	2,512	2,588	2,665

Table C-5
Town of Erin
Water Service
Water Development Charges Reserve Fund Continuity

Description	Inflated \$										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	\$153,384	\$153,969	\$204,429	\$239,307	\$259,734	\$297,432	\$336,859	\$378,078	\$441,765	\$508,412	\$578,128
Development Charge Proceeds	\$586	\$44,506	\$27,908	\$28,467	\$29,036	\$29,616	\$30,207	\$50,820	\$51,839	\$52,877	\$53,936
Transfer to Capital				\$15,606							\$591,571
Transfer to Operating											
Closing Balance	\$153,969	\$198,475	\$232,337	\$252,168	\$288,769	\$327,048	\$367,066	\$428,898	\$493,604	\$561,289	\$40,493
Interest		\$5,954	\$6,970	\$7,565	\$8,663	\$9,811	\$11,012	\$12,867	\$14,808	\$16,839	\$1,215
Required from Development Charges				\$15,606							\$591,571

Table C-6
Town of Erin
Water Service
Water Lifecycle Reserve Fund Continuity

Description	Inflated \$										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	179,516	13,518	63,869	116,645	234,801	322,826	528,476	809,893	1,335,836	2,096,097	3,059,770
Transfer from Operating	48,735	48,491	49,379	111,317	215,401	222,460	346,154	487,036	699,210	874,553	1,048,716
Transfer to Capital					136,779	32,202	88,327				1,183,142
Transfer to Operating	214,733										
Closing Balance	13,518	62,009	113,248	227,963	313,423	513,084	786,304	1,296,928	2,035,046	2,970,650	2,925,344
Interest		1,860	3,397	6,839	9,403	15,393	23,589	38,908	61,051	89,120	87,760

Table C-7
Town of Erin
Water Services - Operating Budget Forecast
 Inflated \$

Description	Forecast									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Operating Costs										
Wages/Salaries	380,142	391,970	399,810	407,810	415,970	424,290	432,780	441,440	450,270	459,280
Payroll Benefits	97,926	99,880	101,880	103,920	106,000	108,120	110,280	112,490	114,740	117,030
Office Supplies	7,953	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380
Training/Education/Safety	7,821	5,100	5,200	5,300	5,410	5,520	5,630	5,740	5,850	5,970
Memberships/Associate Fees	5,081	1,530	1,560	1,590	1,620	1,650	1,680	1,710	1,740	1,770
Uniforms/Clothing	1,793	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380
Water Billing Costs	948	4,080	4,160	4,240	4,320	4,410	4,500	4,590	4,680	4,770
Insurance	10,517	11,270	11,500	11,730	11,960	12,200	12,440	12,690	12,940	13,200
Misc Expense	558	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180
Small Tools/Equipment	6,343	14,280	14,570	14,860	15,160	15,460	15,770	16,090	16,410	16,740
Shop Overhead/Housing Expense	11,550	9,180	9,360	9,550	9,740	9,930	10,130	10,330	10,540	10,750
Hydro	87,636	91,800	93,640	95,510	97,420	99,370	101,360	103,390	105,460	107,570
Property Tax Payment in Lieu	11,479	11,940	12,180	12,420	12,670	12,920	13,180	13,440	13,710	13,980
Small Systems-Supplies & Maintenance	98	510	520	530	550	560	570	580	590	590
Telephone/Telemetering/Cells/Pagers	10,769	11,220	11,440	11,670	11,900	12,140	12,380	12,630	12,880	13,140
Vehicle Maintenance/Fuel/Licenses	17,790	12,240	12,990	13,250	14,030	14,310	14,600	14,890	15,190	15,490
Technical Studies - Consulting Expense	28,519	30,600	31,210	31,830	32,470	33,120	33,780	34,460	35,150	35,850
Consulting Services	5,592	3,060	3,120	3,180	3,240	3,300	3,370	3,440	3,510	3,580
Contracted Equipment/Services	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180
Well House Supplies/Maintenance	37,542	40,800	41,620	42,450	43,300	44,170	45,050	45,950	46,870	47,810
Tower Supplies/Maintenance	6,117	6,000	6,240	6,360	6,490	6,620	6,750	6,890	7,030	7,170
Distribution Supplies/Maintenance	51,216	63,940	65,220	66,520	67,850	69,210	70,590	72,000	73,440	74,910
Water Testing/Sampling	18,449	20,400	20,810	21,230	21,650	22,080	22,520	22,970	23,430	23,900
Additional IT Support/Licenses				10,200	10,400	10,610	10,820	11,040	11,260	11,490
HST Impact		2,515								
Sub Total Operating	805,839	836,040	853,270	880,510	898,620	916,580	934,890	953,590	972,660	992,110
Capital-Related										
Existing Debt Servicing Costs Principal	122,719	131,603	136,305	50,024	51,761	53,517	55,092	56,995	59,235	61,517
Existing Debt Servicing Costs Interest	26,778	19,309	13,160	6,742	5,125	3,425	1,650	69,995	76,235	129,417
New Debt (Principal) - Non-Growth Related				27,738	58,144	61,051	64,104	68,332	72,555	76,882
New Debt (Interest) - Non-Growth Related				17,444	34,307	31,400	28,348	26,832	25,055	23,292
Sub Total Capital Related	149,497	150,911	149,465	101,949	149,338	149,393	149,194	96,827	101,290	181,709
Total Expenditures	955,336	986,951	1,002,735	982,459	1,047,958	1,065,973	1,084,084	1,050,417	1,073,950	1,173,819
Revenues										
Base Rate Revenue	161,170	169,199	210,956	234,610	260,916	290,171	323,012	359,909	401,014	457,680
Fiat Rate Revenue	2,002	2,247	2,495	2,769	3,074	3,412	3,787	4,204	4,666	5,305
Penalties & Interest	2,304	2,350	2,400	2,450	2,500	2,550	2,600	2,650	2,700	2,750
Connection/Installation Fee	8,567	5,100	5,200	5,300	5,410	5,520	5,630	5,740	5,850	5,970
Water Meters Sold/Replaced	225	1,000	1,020	1,060	1,080	1,100	1,120	1,140	1,160	1,180
Small System Cost Recovery	2,832	3,060	3,120	3,180	3,240	3,300	3,370	3,440	3,510	3,580
Misc Revenues	225	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180
Govt Grants - OSWAP	30,721	30,721	30,721							
Previous Year's Surplus (Deficit)	(177,519)									
Contributions from Reserves / Reserve Funds	333,598	144,856	54,865	54,850						
Total Operating Revenue	364,125	359,082	311,836	305,279	277,300	307,153	340,639	378,222	420,060	477,646
Water Billing Recovery - Operating	591,211	671,618	690,899	677,180	770,658	758,820	743,444	672,195	653,890	696,174
Transfer to Life Cycle Reserves	48,735	49,379	111,317	215,401	222,460	346,154	487,036	699,210	874,553	1,048,716
Water Billing Recovery - Total	639,946	628,795	802,216	892,580	993,118	1,104,974	1,230,480	1,371,404	1,528,443	1,744,890

**Table C-8
Town of Erin
Water Services
Water Rate Forecast
Inflated \$**

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Water Billing Recovery	639,946	628,795	720,996	802,216	892,580	993,118	1,104,974	1,230,480	1,371,404	1,528,443	1,744,890
Total Consumption (m ³)	267,370	343,575	326,775	327,555	328,335	329,115	329,895	330,960	332,310	333,660	335,010
Constant Rate (commencing 2011)			\$2.21	\$2.45	\$2.72	\$3.02	\$3.35	\$3.72	\$4.13	\$4.58	\$5.21
% Increase (2011 increase is from 2010 Block 1 Rate)			12%	11%	11%	11%	11%	11%	11%	11%	14%

APPENDIX D
DETAILED WATER RATE CALCULATIONS
100% Sustainability Option 2

Table D-1
Town of Erin
Water Service
Capital Budget Forecast
Uninflated \$

Description	Actual 2009	Total	Forecast							DC %				
			2010	2011	2012	2013	2014	2015	2016		2017	2018	2019	
Capital Expenditures														
Hillsburgh Pumping Station	1,107	980,574	226,666	376,954	376,954									
Upgrade Hydro Building Window	5,022		125,316											
Pioneer Drive Watermain Project	8,793	125,316												
Test Wells & Monitoring - Wells 7 & 8	21,981													
Pumphouse Upgrades	23,573													
Mill Street - Main Street Watermain	-	23,334												
Water Tower Painting	-	25,000												
C of A Upgrades	-	25,000												
Hydro Bldg Shop - Replace HVAC (shared with GCL)	-	7,500		11,500										
Emergency Radio System	-	11,500		40,000										
Mountainview Hydrant Installations	-	80,000		40,000										
Water Tower Road Realignment	-	80,000		40,000										
Works Excavac Roll-off	-	37,500			37,500									
GIS Mapping	-	50,000			50,000									
Meter Replacement Program	-	300,000						150,000						
Radio Meter Reading Device	-	50,000												
Well House Betterments	-	150,000												
Well House Betterments	-	400,000												
SCADA System	-	100,000												
SCADA System - possible extra costs	-													
Studies														
Technical Studies - Modelling, Monitoring	16,843	30,000	30,000											
Water Rate/Financial Plan Study	-													
Water Supply & Distribution Strategy Report	-	10,000		10,000	10,000									
Bel-Erin Well "Options" Report	-	5,000		5,000	5,000									
Infrastructure Replacement														
Vehicle Replacement	-	59,750	30,000					29,750						
Replacement Well House	-	1,500,000											1,500,000	
Well House PLC replacement	-	125,000												
Watermain Replacements	-	529,780			264,890									
Water Service Connections Replacements	-	65,897			32,949									
Total Capital Expenditures	77,319	4,771,151	572,816	468,454	727,293	472,839	179,750	110,000	60,000	60,000	60,000	60,000	560,000	1,560,000

Table D-2
Town of Erin
Water Service
Capital Budget Forecast
 Inflated \$

Description	Actual 2009	Total	Forecast							DC %				
			2010	2011	2012	2013	2014	2015	2016		2017	2018	2019	
Capital Expenditures														
Hillsburgh Pumping Station	1,107	1,003,342	226,666	384,493	392,183									
Upgrade Hydro Building Window	5,022													
Pioneer Drive Watermain Project	8,793	125,316	125,316											
Test Wells & Monitoring - Wells 7 & 8	21,981													
Pumphouse Upgrades	23,573													
Mill Street - Main Street Watermain	-	23,334	23,334											
Water Tower Painting	-	25,000	25,000											
C of A Upgrades	-	25,000	25,000											
Hydro Bldg Shop - Replace HVAC (shared with GCL)	-	7,500	7,500											
Emergency Radio System	-	11,730	11,730											
Mountainview Hydrant Installations	-	80,800	40,000	40,800										
Water Tower Road Realignment	-	80,800	40,000	40,800										
Works Excavac Roll-off	-	39,015	40,000	40,800										
GIS Mapping	-	53,060	53,060											
Meter Replacement Program	-	344,742												
Radio Meter Reading Device	-	55,204												
Well House Betterments	-	162,365												
SCADA System	-	468,664												
SCADA System - possible extra costs	-	117,166			39,015	53,060								
Studies														
Technical Studies - Modelling, Monitoring	16,843	30,000	30,000											
Water Rate/Financial Plan Study	-													
Water Supply & Distribution Strategy Report	-	10,404			10,404									
Bel-Erin Well "Options" Report	-	5,202			5,202									
Infrastructure Replacement														
Vehicle Replacement	-	62,202	30,000											
Replacement Well House	-	1,792,639												
Well House PLC replacement	-	132,651				132,651								
Watermain Replacements	-	556,695			275,592	281,103								
Water Service Connections Replacements	-	69,245			34,280	34,965								
Total Capital Expenditures	77,319.22	5,282,076	572,816	477,823	756,676	501,779	194,567	121,449	67,570	68,921	656,130	1,864,345		
Capital Financing														
Govt Grants - ORII	1,106.96	1,003,342	226,666	384,493	392,183									
Govt Grants - OSTAR Final Claim Adjustment	(7,272.34)													
Grants		172,371												
Loan Proceeds	52,826.65	46,769	46,769											
Land Sales Proceeds	-	80,000	80,000											
Development Charges	-	607,177			15,606									
Non-Growth Related Debiture Requirements	8,793.26	125,316	125,316											
Growth Related Debiture Requirements	-	1,456,892			348,887	365,000								
Operating Contributions	-													
Lifecycle Reserve		1,440,450												
Reserves and Reserve Funds	21,864.69	349,760	94,065	93,330		136,779								
Total Capital Financing	77,319.22	5,282,076	572,816	477,823	756,676	501,779	194,567	121,449	67,570	68,921	656,130	1,864,345		

Table D-3
Water Service
Schedule of Non-Growth Related Debenture Repayments
 (new debt incurred in 10 year forecast)

Debenture Year	Principal (Inflated)	Forecast																		
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019									
2010																				
2011	348,887																			
2012	365,000																			
2013					45,182															
2014					45,182	47,269														
2015	33,785																			
2016	34,461																			
2017	620,980																			
2018	53,779																			
2019																				
Total Annual Debt Charges	1,456,892				45,182	92,452	92,452	92,452	92,452	96,827	101,290	181,709								

Table D-4
Town of Erin
Water Service
Water Reserves/ Reserve Funds Continuity

Description	Inflated \$										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	816,458	721,589	497,148	333,399	286,890	239,002	78,936	81,304	83,743	86,255	88,843
Transfer from Operating											
Transfer to Capital	21,865	94,065	93,330	54,865	54,850	162,365					
Transfer to Operating	118,865	144,856	80,130								
Closing Balance	675,728	482,668	323,688	278,534	232,040	76,637	78,936	81,304	83,743	86,255	88,843
Interest	45,861	14,480	9,711	8,356	6,961	2,299	2,368	2,439	2,512	2,588	2,665

Table D-5
Town of Erin
Water Service
Water Development Charges Reserve Fund Continuity

Description	Inflated \$										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	\$153,384	\$153,969	\$204,429	\$239,307	\$259,734	\$297,432	\$336,859	\$378,078	\$441,765	\$508,412	\$578,128
Development Charge Proceeds	\$586	\$44,506	\$27,908	\$28,467	\$29,036	\$29,616	\$30,207	\$50,820	\$51,839	\$52,877	\$53,936
Transfer to Capital				\$15,606							\$591,571
Transfer to Operating											
Closing Balance	\$153,969	\$198,475	\$232,337	\$252,168	\$288,769	\$327,048	\$367,066	\$428,898	\$493,604	\$561,289	\$640,493
Interest		\$5,954	\$6,970	\$7,565	\$8,663	\$9,811	\$11,012	\$12,867	\$14,808	\$16,839	\$1,215
Required from Development Charges				\$15,606							\$591,571

Table D-6
Town of Erin
Water Service
Water Lifecycle Reserve Fund Continuity

Description	Inflated \$										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	179,516	13,518	63,869	183,811	469,586	858,200	1,537,953	2,253,823	3,162,094	4,237,905	5,433,043
Transfer from Operating	48,735	48,491	114,588	272,098	500,396	667,160	738,551	816,171	952,377	1,036,894	1,048,716
Transfer to Capital					136,779	32,202	88,327				1,183,142
Transfer to Operating	214,733										
Closing Balance	13,518	62,009	178,457	455,909	833,204	1,493,158	2,188,177	3,069,994	4,114,471	5,274,799	5,298,616
Interest		1,860	5,354	13,677	24,996	44,795	65,645	92,100	123,434	158,244	158,958

Table D-7
Town of Erin
Water Services - Operating Budget Forecast
 Inflated \$

Description	Forecast											
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Operating Costs												
Wages/Salaries	380,142	384,285	391,970	399,810	407,810	415,970	424,290	432,780	441,440	450,270	459,280	
Payroll Benefits	97,926	97,925	99,880	101,880	103,920	106,000	108,120	110,280	112,490	114,740	117,030	
Office Supplies	7,953	2,000	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380	
Training/Education/Safety	7,821	5,000	5,100	5,200	5,300	5,410	5,520	5,630	5,740	5,850	5,970	
Memberships/Associate Fees	5,081	1,500	1,530	1,560	1,590	1,620	1,650	1,680	1,710	1,740	1,770	
Uniforms/Clothing	1,793	2,000	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380	
Water Billing Costs	948	4,000	4,080	4,160	4,240	4,320	4,410	4,500	4,590	4,680	4,770	
Insurance	10,517	11,045	11,270	11,500	11,730	11,960	12,200	12,440	12,690	12,940	13,200	
Misc Expense	558	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Small Tools/Equipment	6,343	14,000	14,280	14,570	14,860	15,160	15,460	15,770	16,090	16,410	16,740	
Shop Overhead/Housing Expense	11,550	9,000	9,180	9,360	9,550	9,740	9,930	10,130	10,330	10,540	10,750	
Hydro	87,636	90,000	91,800	93,640	95,510	97,420	99,370	101,360	103,390	105,460	107,570	
Property Tax Payment in Lieu	11,479	11,705	11,940	12,180	12,420	12,670	12,920	13,180	13,440	13,710	13,980	
Small Systems-Supplies & Maintenance	98	500	510	520	530	540	550	560	570	580	590	
Telephone/Telemetering/Cells/Pagers	10,769	11,000	11,220	11,440	11,670	11,900	12,140	12,380	12,630	12,880	13,140	
Vehicle Maintenance/Fuel/Licenses	17,790	12,000	12,240	12,990	13,250	14,030	14,310	14,600	14,890	15,190	15,490	
Technical Studies - Consulting Expense	28,519	30,000	30,600	31,210	31,830	32,470	33,120	33,780	34,460	35,150	35,850	
Consulting Services	5,592	3,000	3,060	3,120	3,180	3,240	3,300	3,370	3,440	3,510	3,580	
Contracted Equipment/Services		1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Well House Supplies/Maintenance	37,542	40,000	40,800	41,620	42,450	43,300	44,170	45,050	45,950	46,870	47,810	
Tower Supplies/Maintenance	6,117	6,000	6,120	6,240	6,360	6,490	6,620	6,750	6,890	7,030	7,170	
Distribution Supplies/Maintenance	51,216	30,000	63,940	65,220	66,520	67,850	69,210	70,590	72,000	73,440	74,910	
Water Testing/Sampling	18,449	20,000	20,400	20,810	21,230	21,650	22,080	22,520	22,970	23,430	23,900	
Additional IT Support/Licenses					10,200	10,400	10,610	10,820	11,040	11,260	11,490	
HST Impact		2,515										
Sub Total Operating	805,839	789,475	836,040	853,270	880,510	898,620	916,580	934,890	953,590	972,660	992,110	
Capital-Related												
Existing Debt Servicing Costs Principal	122,719	124,917	131,603	136,305	50,024	51,761	53,517	55,092				
Existing Debt Servicing Costs Interest	26,778	24,994	19,309	13,160	6,742	5,125	3,425	1,650				
New Debt (Principal) - Non-Growth Related					27,738	58,144	61,051	64,104	69,995	76,235	129,417	
New Debt (Interest) - Non-Growth Related					17,444	34,307	31,400	28,348	26,832	25,055	52,292	
Sub Total Capital Related	149,497	149,911	150,911	149,465	101,949	149,338	149,393	149,194	96,827	101,290	181,709	
Total Expenditures	955,336	939,386	986,951	1,002,735	982,459	1,047,958	1,065,973	1,084,084	1,050,417	1,073,950	1,173,819	

Table D-7
Town of Erin
Water Services - Operating Budget Forecast
Inflated \$

Description	Forecast											
	Actual 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Revenues												
Base Rate Revenue	161,170	169,199	203,234	244,350	293,783	353,215	371,585	391,282	412,410	434,673	457,680	
Fiat Rate Revenue	2,002	2,007	2,408	2,890	3,468	4,161	4,369	4,588	4,817	5,058	5,305	
Penalties & Interest	2,304	2,300	2,350	2,400	2,450	2,500	2,550	2,600	2,650	2,700	2,750	
Connection/Installation Fee	8,567	5,000	5,100	5,200	5,300	5,410	5,520	5,630	5,740	5,850	5,970	
Water Meters Sold/Replaced	225	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Small System Cost Recovery	2,832	3,000	3,060	3,120	3,180	3,240	3,300	3,370	3,440	3,510	3,580	
Misc Revenues	225	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180	
Govt Grants - OSWAP	30,721	30,721	30,721	30,721								
Previous Year's Surplus (Deficit)	(177,519)											
Contributions from Reserves / Reserve Funds	333,598	144,856	80,130	54,865	54,850							
Total Operating Revenue	364,125	359,082	329,043	345,625	365,150	370,686	389,524	409,709	431,337	454,111	477,646	
Water Billing Recovery - Operating	591,211	580,304	657,908	657,110	617,309	677,272	676,449	674,374	619,080	619,839	696,174	
Transfer to Life Cycle Reserves	48,735	48,491	114,588	272,098	500,396	667,160	738,551	816,171	952,377	1,036,894	1,048,716	
Water Billing Recovery - Total	639,946	628,795	772,496	929,208	1,117,705	1,344,432	1,414,999	1,490,546	1,571,457	1,656,733	1,744,890	

Table D-8
Town of Erin
Water Services
Water Rate Forecast

	Inflated \$										
Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Water Billing Recovery	639,946	628,795	772,496	929,208	1,117,705	1,344,432	1,414,999	1,490,546	1,571,457	1,656,733	1,744,890
Total Consumption (m ³)	267,370	343,575	326,775	327,555	328,335	329,115	329,895	330,960	332,310	333,660	335,010
Constant Rate (commencing 2011)			\$2.36	\$2.84	\$3.40	\$4.08	\$4.29	\$4.50	\$4.73	\$4.97	\$5.21
% Increase (2011 increase is from 2010 Block 1 Rate)			20%	20%	20%	20%	5%	5%	5%	5%	5%

APPENDIX E
DETAILED WATER RATE CALCULATIONS
50% Sustainability Option

Table E-1
Town of Erin
Water Service
Capital Budget Forecast
Uninflated \$

Description	Actual 2009	Total	Forecast							DC %				
			2010	2011	2012	2013	2014	2015	2016		2017	2018	2019	
Capital Expenditures														
Hillsburgh Pumping Station	1,107	980,574	226,666	376,954	376,954									
Upgrade Hydro Building Window	5,022		125,316											
Pioneer Drive Watermain Project	8,793	125,316												
Test Wells & Monitoring - Wells 7 & 8	21,981													
Pumphouse Upgrades	23,573													
Mill Street - Main Street Watermain	-	23,334												
Water Tower Painting	-	25,000												
C of A Upgrades	-	25,000												
Hydro Bldg Shop - Replace HVAC (shared with GCL)	-	7,500		11,500										
Emergency Radio System	-	11,500		40,000										
Mountainview Hydrant Installations	-	80,000		40,000										
Water Tower Road Realignment	-	80,000		40,000										
Works Excavac Roll-off	-	37,500			37,500									
GIS Mapping	-	50,000			50,000									
Meter Replacement Program	-	300,000						60,000	60,000	60,000	60,000	60,000	60,000	60,000
Radio Meter Reading Device	-	50,000						50,000						
Well House Betterments	-	150,000					150,000							
SCADA System	-	400,000											400,000	
SCADA System - possible extra costs	-	100,000											100,000	
Studies														
Technical Studies - Modelling, Monitoring	16,843	30,000	30,000											
Water Rate/Financial Plan Study	-													
Water Supply & Distribution Strategy Report	-	10,000			10,000									
Bel-Erin Well "Options" Report	-	5,000			5,000									
Infrastructure Replacement														
Vehicle Replacement	-	59,750	30,000					29,750						
Replacement Well House	-	1,500,000											1,500,000	
Well House PLC replacement	-	125,000					125,000							
Watermain Replacements	-	529,780			264,890		264,890							
Water Service Connections Replacements	-	65,897			32,949		32,949							
Total Capital Expenditures	77,319	4,771,151	572,816	468,454	727,293	472,839	179,750	110,000	60,000	60,000	60,000	560,000	1,560,000	

Table E-2
Town of Erin
Water Service
Capital Budget Forecast
Inflated \$

Description	Actual 2009	Total	Forecast										
			2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Capital Expenditures													
Hillsburgh Pumping Station	1,107	1,003,342	226,666	384,493	392,183								
Upgrade Hydro Building Window	5,022		125,316										
Pioneer Drive Watermain Project	8,793	125,316											
Test Wells & Monitoring - Wells 7 & 8	21,981												
Pumphouse Upgrades	23,573												
Mill Street - Main Street Watermain	-	23,334	23,334										
Water Tower Painting	-	25,000	25,000										
C of A Upgrades	-	25,000	25,000										
Hydro Bldg Shop - Replace HVAC (shared with GCL)	-	7,500	7,500										
Emergency Radio System	-	11,730	11,730										
Mountainview Hydrant Installations	-	80,800	40,000	40,800									
Water Tower Road Realignment	-	80,800	40,000	40,800									
Works Excavac Roll-off	-	39,015		39,015									
GIS Mapping	-	53,060		53,060									
Meter Replacement Program	-	344,742											
Radio Meter Reading Device	-	55,204											
Well House Betterments	-	162,365						162,365					
SCADA System	-	468,664											
SCADA System - possible extra costs	-	117,166											
Studies													
Technical Studies - Modelling, Monitoring	16,843	30,000	30,000										
Water Rate/Financial Plan Study	-												
Water Supply & Distribution Strategy Report	-	10,404			10,404								
Bel-Erin Well "Options" Report	-	5,202			5,202								
Infrastructure Replacement													
Vehicle Replacement	-	62,202	30,000										
Replacement Well House	-	1,792,639											1,792,639
Well House PLC replacement	-	132,651											
Watermain Replacements	-	556,695			275,592								
Water Service Connections Replacements	-	69,245			34,280								
Total Capital Expenditures	77,319.22	5,282,076	572,816	477,823	756,676	501,779	194,567	194,567	121,449	67,570	68,921	656,130	1,864,345
Capital Financing													
Govt Grants - ORII	1,106.96	1,003,342	226,666	384,493	392,183								
Govt Grants - OSTAR Final Claim Adjustment	(7,272.34)												
Loan Proceeds	52,826.65	46,769	46,769										
Land Sales Proceeds	-	80,000	80,000										
Development Charges	-	607,177											
Development Contributions	8,793.26	125,316	125,316										
Non-Growth Related Debenture Requirements	-	1,456,892											
Lifecycle Reserve	-	1,440,450											
Reserves and Reserve Funds	21,864.69	349,760	94,065	93,330	348,887	365,000							
Total Capital Financing	77,319.22	5,282,076	572,816	477,823	756,676	501,779	194,567	194,567	121,449	67,570	68,921	656,130	1,864,345

Table E-3
 Town of Erin
 Water Service
 Schedule of Non-Growth Related Debenture Repayments
 (new debt incurred in 10 year forecast)

Debenture Year	Principal (Inflated)	Forecast																		
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019									
2010																				
2011	348,887				45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182	45,182
2012	365,000				47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269	47,269
2013																				
2014																				
2015	33,785																			
2016	34,461																			
2017	620,980																			
2018	53,779																			
2019																				
Total Annual Debt Charges	1,456,892				45,182	92,452	92,452	92,452	92,452	92,452	92,452	92,452	96,827	101,290	181,709					

Inflated \$

Table E-4
Town of Erin
Water Service
Water Reserves/ Reserve Funds Continuity
 Inflated \$

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	816,458	721,589	497,148	333,399	286,890	239,002	78,936	81,304	83,743	86,255	88,843
Transfer from Operating											
Transfer to Capital	21,865	94,065	93,330			162,365					
Transfer to Operating	118,865	144,856	80,130	54,865	54,850						
Closing Balance	675,728	482,668	323,688	278,534	232,040	76,637	78,936	81,304	83,743	86,255	88,843
Interest	45,861	14,480	9,711	8,356	6,961	2,299	2,368	2,439	2,512	2,588	2,665

Table E-5
Town of Erin
Water Service
Water Development Charges Reserve Fund Continuity
 Inflated \$

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	\$153,384	\$153,969	\$204,429	\$239,307	\$259,734	\$297,432	\$336,859	\$378,078	\$441,765	\$508,412	\$578,128
Development Charge Proceeds	\$586	\$44,506	\$27,908	\$28,467	\$29,036	\$29,616	\$30,207	\$50,820	\$51,839	\$52,877	\$53,936
Transfer to Capital				\$15,606							\$591,571
Transfer to Operating											
Closing Balance	\$153,969	\$198,475	\$232,337	\$252,168	\$288,769	\$327,048	\$367,066	\$428,898	\$493,604	\$561,289	\$40,493
Interest	\$5,954	\$6,970	\$7,565	\$8,663	\$9,811	\$11,012	\$12,867	\$14,808	\$16,839	\$18,839	\$1,215
Required from Development Charges				\$15,606							\$591,571

Table E-6
Town of Erin
Water Service
Water Lifecycle Reserve Fund Continuity
 Inflated \$

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opening Balance	179,516	13,518	63,869	89,994	140,943	113,205	145,215	184,817	388,611	732,371	1,169,449
Transfer from Operating	48,735	48,491	23,503	46,845	105,744	59,983	122,545	192,476	322,429	403,016	433,503
Transfer to Capital					136,779	32,202	88,327				1,183,142
Transfer to Operating	214,733										
Closing Balance	13,518	62,009	87,372	136,838	109,908	140,986	179,434	377,293	711,040	1,135,387	419,810
Interest	1,860	1,860	2,621	4,105	3,297	4,230	5,383	11,319	21,331	34,062	12,594

Table E-7
Town of Erin
Water Services - Operating Budget Forecast
 Inflated \$

Description	Actual 2009	Forecast																		
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019									
Revenues																				
Base Rate Revenue	161,170	169,525	189,520	210,044	232,812	258,070	286,099	317,507	352,736	391,907	445,627									
Flat Rate Revenue	2,002	2,007	2,168	2,298	2,436	2,581	2,736	2,900	3,074	3,259	3,477									
Penalties & Interest	2,304	2,300	2,350	2,400	2,450	2,500	2,550	2,600	2,650	2,700	2,750									
Connection/Installation Fee	8,567	5,000	5,100	5,200	5,300	5,410	5,520	5,630	5,740	5,850	5,970									
Water Meters Sold/Replaced	225	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180									
Small System Cost Recovery	2,832	3,000	3,060	3,120	3,180	3,240	3,300	3,370	3,440	3,510	3,580									
Misc Revenues	225	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180									
Govt Grants - OSWAP	30,721	30,721	30,721	30,721																
Previous Year's Surplus (Deficit)	(177,519)																			
Contributions from Reserves / Reserve Funds	283,822	144,856	80,130	54,865	54,850															
Total Operating Revenue	314,349	359,408	315,089	310,727	303,147	273,961	302,405	334,247	369,921	409,546	463,764									
Water Billing Recovery - Operating	640,987	579,978	671,862	692,008	679,311	773,997	763,568	749,836	680,496	664,404	710,055									
Transfer to Life Cycle Reserves	48,735	48,491	23,503	46,845	105,744	59,983	122,545	192,476	322,429	403,016	433,503									
Water Billing Recovery - Total	689,722	628,469	695,366	738,853	785,055	833,979	886,113	942,312	1,002,925	1,067,420	1,143,558									

Table E-8
Town of Erin
Water Services
Water Rate Forecast
Inflated \$

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total Water Billing Recovery	689,722	628,469	695,366	738,853	785,055	833,979	886,113	942,312	1,002,925	1,067,420	1,143,558
Total Consumption (m ³)	323,483	343,575	326,775	327,555	328,335	329,115	329,895	330,960	332,310	333,660	335,010
Constant Rate (commencing 2011)			\$2.13	\$2.26	\$2.39	\$2.53	\$2.69	\$2.85	\$3.02	\$3.20	\$3.41
% Increase (2011 increase is from Block 1 Rate			8%	6%	6%	6%	6%	6%	6%	6%	7%

