

# WATER AND WASTEWATER BILLING EXEMPTION STUDY – PEER MUNICIPAL COMPARATORS

Prepared by BMA Management Consulting Inc.

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## Executive Summary

## Executive Summary

BMA Management Consulting Inc. was engaged by the City of Guelph to review and summarize policies and practices with respect to water and wastewater rates across 16 peer municipalities, including the City of Guelph, with a focus on providing general information about each system as well as programs directed at supporting affordability and sewer abatement. This research is being conducted in advance of a full rate structure review and the findings will be considered for future rate structure deliberations.

Two other consulting groups were involved in other aspects of the larger study including Metroline Research Group (Metroline) and DFA Infrastructure International Inc. (DFA) that were responsible for consultation with the community. Metroline Research Group was engaged to conduct a residential engagement study regarding water/wastewater billing exemptions. In a separate report, the results of the residential engagement study were summarized using the feedback from four focus groups and a random telephone survey with 450 Guelph residents. DFA was responsible for the completion of an engagement study of commercial, industrial and institutional customers in Guelph, with a focus primarily on sewer abatement options. A separate report prepared by DFA is also available. These two reports have been referenced to integrate community feedback into the process.

The report includes a summary of rate structures across the peer municipal comparator group, an overview of the water/wastewater systems, a cost of service comparison, an overview of the affordability of water/wastewater services, programs available with respect to water billing exemptions and recommendations for future programs that the City may wish to consider. This includes recommendations for the continuation of a number of existing programs to support affordability in the residential class including equal billing plans and temporary payment plans as well as consideration of lifeline rate structure and a water leak forgiveness program. Further, the report includes a recommendation for the introduction of a sewer rebate program based on leading practice research to support fairness and equity.

# 1 Introduction

### ***Study Scope and Objectives***

BMA Management Consulting Inc. was engaged by the City of Guelph to review and summarize policies and practices with respect to water and wastewater rates across 16 peer municipalities, including the City of Guelph, with a focus on providing general information about each system as well as programs directed at supporting affordability and sewer abatement. This research is being conducted in advance of a full rate structure review and the findings will be considered for future rate structure deliberations. Further, upon completion of this review, public consultation has been undertaken to receive feedback from the community. Specifically, the study includes the following:

1. General community metric benchmarking: customers served, water and wastewater system type/complexity (i.e. surface water versus groundwater, centralized vs. many decentralized systems, treatment and conveyance vs. treatment or conveyance only), average age of systems and replacement value, annual operating and capital budgets, reserve policies/structures.
2. Summary of appropriateness/feasibility of high bill customer forgiveness policies, social assistance subsidies for customers where service affordability is a challenge and sewer cost exemptions for water consumed in a product, evaporated or other end use actions.
3. Quantification of customer sector support for policy alternatives of various types (as part of community engagement program).
4. Analysis of anticipated revenue loss and/or operational impacts by policy alternative as well as potential impacts to other customer groups should revenue needs persist and be transitioned between customer groups as a result.

Note that two other consulting groups were involved in other aspects of the larger study including Metroline Research Group (Metroline) and DFA Infrastructure International Inc. (DFA) that were responsible for consultation with the community. Metroline Research Group was engaged to conduct a residential engagement study regarding water and wastewater and billing exemptions. In a separate

report, the results of the residential engagement study were summarized using the feedback from four focus groups and a random telephone survey with 450 Guelph residents. DFA was responsible for the completion of an engagement study of commercial, industrial and institutional customers in Guelph, with a focus primarily on sewer abatement options. These reviews have been referenced in this report.

**Peer Municipalities**

Figure 1 summarizes the municipalities that were included as part of the review process:

**Figure 1 – Peer Municipalities Surveyed**

Municipality	
Barrie	Kingston
Cambridge	Kitchener
Centre Wellington	Orangeville
Chatham-Kent	Durham Region
Greater Sudbury	Halton Region
Guelph	Peel Region
Guelph-Eramosa	Stratford
Hamilton	Waterloo

Every effort was made to gather the most current data available. Information was gathered using internet research, reviewing staff reports to Council, emails and discussions with staff in the peer municipal comparator group. Understandably, some of the requested information is not tracked or readily available by each of the peer municipalities and therefore has not been included in the summaries.

## **2 General System Information**

### ***General System Overview***

This section of the report provides a high level overview of the peer municipalities included in the comparator analysis. Figure 2 provides a summary of the number of customers served, type of service provided by each municipality, the estimated replacement cost of the water and wastewater assets and the 2017 rate revenue requirements. The following provides key findings and observations:

- The number of customers served across the peer municipalities surveyed ranged from 1,900 in Guelph-Eromosa to 326,000 in Peel Region which also supplies water to portions of York Region. Guelph has approximately 42,300 customers (Source: 2017 Guelph Rate Model).
- As will be discussed later in the report, each system varies considerably in terms of assets, policies, capacity, cost of service and age of infrastructure.
- For the most part peer municipalities, similar to the City of Guelph, are responsible for water distribution, wastewater collection, supply of water and treatment of wastewater services, with the exception of the Waterloo Regional municipalities (Cambridge, Kitchener, Waterloo) whereby the systems are operated through a two-tier municipal structure. Waterloo municipalities are responsible for the distribution of water and the collection of wastewater and the Region is responsible for the supply of water and treatment of wastewater. In some cases, direct comparison of data is a challenge from a cost and capacity perspective as a result of this difference.
- Over the past several years, municipalities across Ontario have been undertaking asset management plans and are at various stages of implementation. Asset replacement costs have been included where information was available as well as when the replacement costs were established (ranging from 2011 to 2016). The system replacement costs ranged from \$25 million to \$11.9 billion in water and \$39 million to \$8.6 billion in wastewater operations across the peer municipal comparator group. Guelph's asset funding requirements continue to increase as existing infrastructure and equipment ages and new infrastructure is constructed. As of 2016, the estimated replacement cost for Guelph's water assets is \$615 million and \$560 million in wastewater operations.

**Figure 2 – General Peer Municipal Comparator Overview**

Municipality	# of Customers Served	System Type Collection/ Distribution vs Treatment	Replacement Value (Millions)			2017 Rate Revenues (Millions)	
			Water	WW	Year of Calculated Replacement Value	Water	WW
Barrie	46,000	All	\$ 625.0	\$ 850.0	2011	\$ 26.2	\$ 34.1
Cambridge	40,000	Coll./Distrib.	\$ 337.8	\$ 354.5	2013	\$ 32.7	\$ 29.7
Centre Wellington	6,600	All	\$ 114.1	\$ 117.0	2016	\$ 4.6	\$ 1.8
Chatham-Kent	40,000	All	\$ 556.1	\$ 482.0	2012	\$ 20.9	\$ 16.1
Durham Region	172,400	All	\$ 3,457.0	\$ 4,148.0	2014	\$ 101.5	\$ 97.9
Greater Sudbury	51,000	All	\$ 1,020.6	\$ 1,329.4	2011	\$ 34.3	\$ 36.1
Guelph	42,300	All	\$ 615.4	\$ 559.7	2016	\$ 27.4	\$ 30.9
Guelph-Eramosa	1,900	All	\$ 25.3	\$ 39.1	2012	\$ 0.8	\$ 1.2
Halton Region	161,000	All	\$ 3,300.0	\$ 3,400.0	2014	\$ 87.7	\$ 101.0
Hamilton	149,000	All	\$ 2,771.0	\$ 4,419.0	2013	\$ 96.3	\$ 101.9
Kingston	38,000	All				\$ 25.6	\$ 29.4
Kitchener	64,000	Coll./Distrib.	\$ 147.6	\$ 184.5	2012	\$ 42.0	\$ 48.7
Orangeville	9,000	All	\$ 296.9	\$ 77.4	2015	\$ 6.1	\$ 5.9
Peel Region	326,000	All	\$ 11,900.0	\$ 8,600.0	2016	\$ 220.6	\$ 147.1
Stratford	12,900	All	\$ 76.5	\$ 185.1	2013	\$ 4.2	\$ 6.2
Waterloo	30,200	Coll./Distrib.	\$ 215.0	\$ 261.0	2016	\$ 19.4	\$ 23.2

Note: Hamilton wastewater rate revenue requirements also includes storm. Peel Region includes York billing revenue for services provided. Chatham-Kent revenues 2015 FIR.

## **3 Summary of Rate Structures**

### ***Summary of the Rate Structures***

It is important that water and wastewater rates be based on sound policies and principles and that they are defensible by staff and Council. As stated by CWWA and AWWA, despite industry trends in rate setting, there is, and always will be, a lot of variation in rate setting practices given that there is no single rate setting approach or rate structure. Municipalities have different objectives in setting rates including, but not limited to:

- Conservation
- Revenue Stability
- Fairness & Equity
- Economic Development

- Financial Sufficiency
- Affordability
- Ease of Implementation
- Transparency

### ***Key Components of a Water/WW Rate Structure***

As stated by the CWWA, at the heart of the methodology for setting water rates is the concept of a two-part rate structure; ***a volumetric charge and a fixed charge***. The volumetric charge is based on the volume of water used by a customer. The fixed monthly charge is paid by each customer, regardless of the amount of water consumed.

The purpose of this report is to provide an overview of the rate structures in Guelph as well as the peer municipalities surveyed to identify the impact that the rate structure may have on the customer cost of service and to identify potential opportunities to improve affordability and support other objectives such as fairness and equity and revenue stability. This section of the report, along with the cost of service section will illustrate the key rate structure implications and how these may impact other policy decisions.

### **Volumetric Rate Structure**

The volumetric or variable charge is based on the volume of water used by a customer. There are a number of different volumetric rate structures used by municipalities. The volume used by different customers can be subdivided into sections referred to as blocks. Block rates are determined to reflect the different customer types. Employing an inclining or declining block rate structure involves decisions to be made as to where to establish thresholds for changes in rates and the extent to which a premium or discount will be provided. These decisions will have an impact on the cost of service to customers, depending on their consumption. It should be noted that in setting rates and establishing the fee structure, the revenues to be recovered remain the same, however, changes to rate structures have an impact on each customer class and within a customer class depending on the amount of water consumed. The following summarizes the types of volumetric rate structures:

- Uniform Rate Structure (U in the table)—The most common rate structure is the uniform rate for water and wastewater services. A uniform rate structure means that the price per unit remains constant despite consumption and despite the customer class. The cost is calculated by dividing the total cost of

the service by the total volume of water consumed. This is the type of rate structure employed in 11 of the 16 municipalities in the peer municipal comparator group, including the City of Guelph.

- Declining Block Rate Structure (D in the table) — In a declining block rate structure, the unit price of water decreases as the volume consumed increases. This structure charges low volume users the highest rate, which are often residential consumers. This rate structure may be used to promote the objective of economic development however this approach does not encourage conservation. Two of the municipalities in the peer group have a declining rate structure (Chatham-Kent, Stratford), with considerably different approaches to establishing the thresholds and the amount of discount:
  - Chatham-Kent has a significant discount for large volume consumption customers (consuming over 2,010 m<sup>3</sup> monthly). This approach appears to be designed to support economic development objectives.
  - Stratford's declining rate structure, with a threshold of 3 m<sup>3</sup> per month appears to be designed to ensure that all customers are contributing toward the fixed monthly costs as opposed to being established for economic development purposes.
- Inclining Rate Structure (I in the table) — The main objective of an increasing block structure is to encourage conservation. The rates in an inclining rate structure increase as consumption increases by establishing thresholds or blocks at which the rate would change. For inclining block rate structures, the block (quantity) shift points are generally based upon the unique demand characteristics of each user class and are focused on user demand points to enhance water usage awareness. Customer awareness, combined with price incentives are critical elements in modifying consumption behavior. Challenges exist in identifying a fair approach for establishing thresholds as average consumption will vary based on family size. Typically, block rate thresholds for residential properties try to establish the first block to reflect indoor water use and the second block to reflect outdoor use. Inclining rate structures are also established to support affordability for low volume customers. Three of the municipalities in the peer group have an inclining rate structure (Barrie, Hamilton and Kingston) with

considerably different approaches to establishing the thresholds and the amount of premium:

- Barrie has a four block model for residential customers with the first threshold to represent the approximate amount that a typical residential customer would consume (15 m<sup>3</sup> monthly), with incremental increases in each block to encourage conservation in the residential class. The premiums are significant. The Non-Residential class of customers has only two block rates. The rates are set below those in the Residential class to support economic development and an inclining rate structure supports water conservation.
- Hamilton's rate structure, which will be further described later in the report, supports affordability (to meet basic customer needs). The first block, set at 10 m<sup>3</sup> monthly is at a rate of 50% of consumptions above 10 m<sup>3</sup> monthly.
- Kingston's inclining rate structure is for residential customers only with a block rate increase for customers consuming over 25 m<sup>3</sup> monthly being charged a 25% premium. This appears to support water conservation.
- Humpback Rate Structure — A humpback rate structure uses a combination of increasing and decreasing block rates: rates first increase, then decrease in steps as consumption increases. This approach targets high volume users, and then provides lower rates for high volume users. No municipalities in the peer survey have a humpback rate structure. None on the municipalities in the peer survey have a humpback rate structure.
- Seasonal Rate Structure - A seasonal rate structure applies a higher volume charge on all water used during the peak water demand period. This structure involves two charges, one for the peak season (i.e. summer) and another for the remaining time of the year. None on the municipalities in the peer survey have a seasonal rate structure.

### Fixed Costs

Municipalities must determine whether to separately charge a fixed cost regardless of the amount of water used to its customers and to determine the types of costs that are to be recovered from a monthly charge. Decisions on how much to incorporate in the fixed charge should be based on the priority policy objectives of the municipality. For example, a high allocation to the fixed charge does not support conservation and can create affordability issues for low volume customers. A high allocation of costs to the volumetric rate will promote water conservation however revenue instability is increased and may create fairness and equity challenges.

As shown in figure 3:

- All but two municipalities surveyed have a fixed monthly fee (Kitchener and Peel Region). The City of Waterloo has a fixed monthly charge for water only, with no fixed cost for wastewater.
- Similar to the majority of municipalities surveyed and, consistent with CWWA/AWWA recommended practices, Guelph currently charges customers different monthly rates based on the size of the service (meter and pipe size) which is referred to a meter equivalency factor. Meter Equivalent (ME) ratios for the meters and services are based on representative metering costs for installing, maintaining and replacing customer meters. Costs increase with the size of the service and the corresponding equivalent meter ratio is calculated based on the increased costs relative to a 5/8" residential meter. Equivalent meter ratios for the meters and services are based on representative metering costs using 5/8" meter as a base. Stratford uses a meter equivalency factor for Water but not WW.
- Information on the amount of total water and wastewater recovered from the fixed and volumetric fee was not available for all municipalities surveyed; however, costs to be recovered from fixed and volumetric charges were calculated using a typical residential customer (180 m<sup>3</sup> annual consumption which is Guelph's average). As shown in figure 3, the amount recovered from the fixed portion of the bill varied from 0% to 61%. Guelph's fixed costs at 25% are between the peer average and the median.

**Figure 3 – Peer Municipal Comparator Fee Structure Summary**

	Fixed	ME	Typical Residential 180 m <sup>3</sup> Fixed %	Rate Structure
Barrie	☑	☑	45%	I
Cambridge	☑	☑	20%	U
Centre Wellington	☑	☑	24%	U
Chatham-Kent	☑	☑	56%	D
Durham Region	☑	☑	37%	U
Greater Sudbury	☑	☑	46%	U
Guelph	☑	☑	25%	U
Guelph-Eramosa	☑	☑	21%	U
Halton Region	☑	☑	45%	U
Hamilton	☑	☑	40%	I
Kingston	☑	☑	61%	I
Kitchener	☒	☒	0%	U
Orangeville	☑	☑	21%	U
Peel Region	☒	☒	0%	U
Stratford	☑	☑☒	10%	D
Waterloo	☑☒	☑☒	5%	U
Average			29%	
Median			24%	

## **4 Customer Cost of Service**

**Residential Customer Cost of Service**

Figure 4 provides a comparison of the 2017 customer cost of service for water and wastewater across the peer municipalities for residential customers consuming at different levels.

**Figure 4 – Residential Customer Cost of Service**

Annual Consumption	Residential			% fixed residential customer (180 m <sup>3</sup> )
	72 m <sup>3</sup>	120 m <sup>3</sup>	180 m <sup>3</sup>	
Barrie	\$ 525	\$ 640	\$ 784	45%
Cambridge	\$ 488	\$ 683	\$ 927	20%
Centre Wellington	\$ 591	\$ 812	\$ 1,088	24%
Chatham-Kent	\$ 699	\$ 809	\$ 946	56%
Durham Region	\$ 490	\$ 622	\$ 788	37%
Greater Sudbury	\$ 698	\$ 849	\$ 1,037	46%
Guelph	\$ 459	\$ 625	\$ 833	25%
Guelph-Eramosa	\$ 609	\$ 852	\$ 1,156	21%
Halton Region	\$ 511	\$ 624	\$ 765	45%
Hamilton	\$ 348	\$ 420	\$ 598	40%
Kingston	\$ 795	\$ 902	\$ 1,036	61%
Kitchener	\$ 352	\$ 586	\$ 879	0%
Orangeville	\$ 488	\$ 683	\$ 927	21%
Peel Region	\$ 156	\$ 259	\$ 389	0%
Stratford	\$ 402	\$ 530	\$ 690	10%
Waterloo	\$ 323	\$ 514	\$ 753	5%
Average	\$ 496	\$ 651	\$ 850	29%
Median	\$ 489	\$ 633	\$ 856	24%
Average	-8%	-4%	-2%	
Guelph Position	Lower	Lower	Lower	

- An analysis was undertaken of low to mid volume consumption residential customers to compare the cost of service across the peer municipal comparators.
- The consumption threshold based on research for **lifeline pricing** which is expected to cover a customer’s basic water needs was included in the comparison (72 m<sup>3</sup> – 120 m<sup>3</sup> annually).
- This analysis also included comparison of a typical Guelph residential customer consuming 180 m<sup>3</sup> annually (15 m<sup>3</sup> per month).

- The cost of service in Guelph for residential consumers for basic water needs and for average Guelph residential customers is lower than the survey average and survey median in all cases.
- A determining factor impacting residential rates is the proportion of the bill related to fixed costs. A lower proportion of fixed costs benefits low consumption customers. Kitchener has been used for illustrative purposes as Kitchener has no costs recovered from a fixed monthly charge. As shown in figure 5, the cost of water and wastewater for a customer consuming 72 m<sup>3</sup> annually in Guelph is 30% higher than in Kitchener. However, the cost of water and wastewater for a customer consuming 180 m<sup>3</sup> annually in Guelph, which is an average residential customer, is 5% lower than Kitchener. This analysis has been included for illustrative purposes to help understand the impact of the rate structure, among other factors on the customer cost of service and to help understand the need for other affordability programs.

**Figure 5 – Illustration of the Impact of Fixed Costs**

Annual Consumption	72 m <sup>3</sup>	84 m <sup>3</sup>	120 m <sup>3</sup>	180 m <sup>3</sup>
Guelph	\$ 459	\$ 500	\$ 625	\$ 833
Kitchener	\$ 352	\$ 410	\$ 586	\$ 879
Guelph Difference to Kitchener	30%	22%	7%	-5%

### **Non-Residential Customer Cost of Service**

Figure 6 summarizes the cost of service for Non-Residential customers in Guelph in relation to the peer municipalities surveyed for a number of different customer levels of consumption.

**Figure 6 Non-Residential Customer Cost of Service**

ICI	10,000 m <sup>3</sup> 2"	30,000 m <sup>3</sup> 3"	100,000 m <sup>3</sup> 4"	500,000 m <sup>3</sup> 6"	Rate Structure
Barrie	\$ 37,635	\$ 111,038	\$ 360,648	\$ 1,773,283	I
Cambridge	\$ 42,254	\$ 125,520	\$ 412,993	\$ 2,048,242	U
Centre Wellington	\$ 46,968	\$ 139,248	\$ 461,712	\$ 2,303,499	U
Chatham-Kent	\$ 24,358	\$ 64,892	\$ 154,392	\$ 663,718	D
Durham Region	\$ 26,205	\$ 75,617	\$ 232,315	\$ 1,071,025	U
Greater Sudbury	\$ 35,134	\$ 101,622	\$ 325,352	\$ 1,591,323	U
Guelph	\$ 36,529	\$ 107,873	\$ 353,653	\$ 1,747,488	U
Guelph-Eramosa	\$ 50,960	\$ 152,160	\$ 506,360	\$ 2,530,360	U
Halton Region	\$ 27,445	\$ 77,479	\$ 246,720	\$ 1,203,697	U
Hamilton	\$ 31,630	\$ 92,959	\$ 303,030	\$ 1,497,060	I
Kingston	\$ 22,884	\$ 65,225	\$ 208,902	\$ 1,022,354	I
Kitchener	\$ 48,846	\$ 146,538	\$ 488,460	\$ 2,442,300	U
Orangeville	\$ 41,188	\$ 122,485	\$ 406,979	\$ 2,030,979	U
Peel Region	\$ 23,086	\$ 69,257	\$ 230,858	\$ 1,154,290	U
Stratford	\$ 26,933	\$ 80,208	\$ 266,503	\$ 1,330,819	D
Waterloo	\$ 39,970	\$ 119,754	\$ 398,774	\$ 1,991,137	U
Average	\$ 35,126	\$ 103,242	\$ 334,853	\$ 1,650,098	
Median	\$ 35,831	\$ 104,747	\$ 339,503	\$ 1,669,406	
Average	4%	4%	6%	6%	
Guelph Position	Higher	Higher	Higher	Higher	

- The differential to the average in Guelph for non-residential customers is 4-6% higher than the survey average. For example, large volume customers (consuming 0.5 million m<sup>3</sup>) in Guelph pay approximately 6% more than the peer average. As shown previously, a typical residential customer pays approximately 2% lower than peer average. The differentials are driven by the overall cost of service as well as the rate structure.

### ***Factors Impacting the Cost of Service***

There are a number of characteristics and features of water/wastewater to consider with respect to the cost of service. Multiple sources of data were used to complete this section of the report including, but not limited to, 2015 Financial Information Returns (most current), year-end reports required under O. Reg. 170/03, Sch. 22; O. Reg. 249/03, s. 24; O. Reg. 253/05, s. 18, internet research, asset management plans and budget documents. It should be noted that, in some cases, there are different descriptions of the systems in a municipality using various sources of reports available and every effort has been made to accurately reflect the systems and costs. This section has been included to provide a general overview of the cost drivers and key differences in the systems to help understand controllable versus uncontrollable drivers. Some of the principal cost drivers include:

- ***Size of the Service Area and Density*** – Water and wastewater collection and distribution networks are a major investment and a service with relatively low consumption results in higher collection/distribution costs per m<sup>3</sup>.
- ***Physical Operating Environment*** – Geology and topography can have an impact on transportation costs.
- ***Complexity and Cost of the System*** - Water and wastewater consist of treatment facilities and network pipelines which are very capital intensive and costly. The fixed costs of water and wastewater systems are also very high (most research estimates the fixed costs to be over 90% of the total system costs). This is a significant factor to consider when comparing costs. Complexity considerations include the number of plants, size and complexity of the plants. A summary of the various municipal systems has been provided in figure 7 & 8.
- ***Source of Water Supply*** – Municipalities rely on different sources of water which impacts costs. Across the peer municipal comparators, there is surface water which is found above the earth's surface and includes lakes, streams, reservoirs, wetlands. Groundwater is another source of water found below the surface of the water. Groundwater is naturally filtered and generally requires less treatment than

surface water supplies. A summary of the systems has been provided in figures 7 & 8. This reflects different sources of water used across the peer municipal survey.

- ***Type of Wastewater Treatment*** – The type of treatment impacts the cost of service. This includes primary, secondary and tertiary treatment with tertiary being the most costly.

Appendix A provides a summary of the additional system descriptions of the systems in each peer municipality.

**Figure 7 – Water System Overview**

	Water ML Treated Millions	Water km	Distribution vs Treatment	Ground	Surface	Comments Source of Water	Ground	Wells	Surface	Booster Stations	Storage Facilities	Reservoirs
Barrie	13.5	626	Both	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Approx 50/50	0	12	1	7	6	0
Cambridge	15.9	581	Distribution	See Region								
Centre Wellington	2.0	108	Both	<input checked="" type="checkbox"/>		Groundwater	0	9	0	0	4	0
Chatham-Kent	14.6	1,710	Both	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Primarily Surface	2	0	4	0	0	0
Durham Region	63.9	2,470	Both	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Primarily Surface	0	22	6	18	22	0
Greater Sudbury	21.4	873	Both	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Primarily Surface	0	21	2	0	10	0
Guelph	17.1	551	Both	<input checked="" type="checkbox"/>		Two sources, groundwater and GUDI		21	0	0	3	5
Guelph-Eramosa	0.3	32	Both	<input checked="" type="checkbox"/>		Groundwater	0	5	0	0	1	0
Halton Region	65.8	2,220	Both		<input checked="" type="checkbox"/>	Primarily Surface	9	19	3	15	0	22
Hamilton	82.6	2,060	Both		<input checked="" type="checkbox"/>	Primarily Surface	0	8	1	25	21	0
Kingston	24.1	600	Both	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Primarily Surface	1	0	2	3	10	0
Kitchener	21.9	871	Distribution	See Region								
Orangeville	3.4	110	Both	<input checked="" type="checkbox"/>		Groundwater 9 GUDI	0	12	0	0	2	0
Peel Region	217.0	4,552	Both	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Primarily Surface	0	15	2	13	23	0
Stratford	3.6	184	Both	<input checked="" type="checkbox"/>		Groundwater	0	11	0	6	2	0
Waterloo	12.3	431	Distribution	See Region								
Waterloo Region	54.0	443	Treatment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Primarily Ground (80%)	20	110	1	11	16	0

**Figure 8 – Wastewater System Overview**

	WW ML Treated Millions	WW km	Collection vs Treatment	Transfer Station	Treatment Plants	Pumping Stations	Biosolids Handling Facility	Lagoon System	Overflow/CSO Tanks
Barrie	20	537	Both		1	6			
Cambridge	18	522	Collection		0	0			
Centre Wellington	2	101	Both		2	7			
Chatham-Kent	14	533	Both		8	0		2	
Durham Region	73	2,122	Both		11	52			
Greater Sudbury	28	793	Both		10	68		4	
Guelph	19	520	Both		1	6			
Guelph-Eramosa	0	33	Collection	1		4			
Halton Region	83	1,984	Both		7	88			
Hamilton	105	1,786	Both		1	72			9
Kingston	29	490	Both		3	33			9
Kitchener		824	Collection		0	23			
Orangeville	4	119	Both		1	4			
Peel Region	221	3,560	Both		4	32			
Stratford	6	160	Both		1	11			
Waterloo		461	Collection		0	6			
Waterloo Region		409	Treatment		13	6	1		

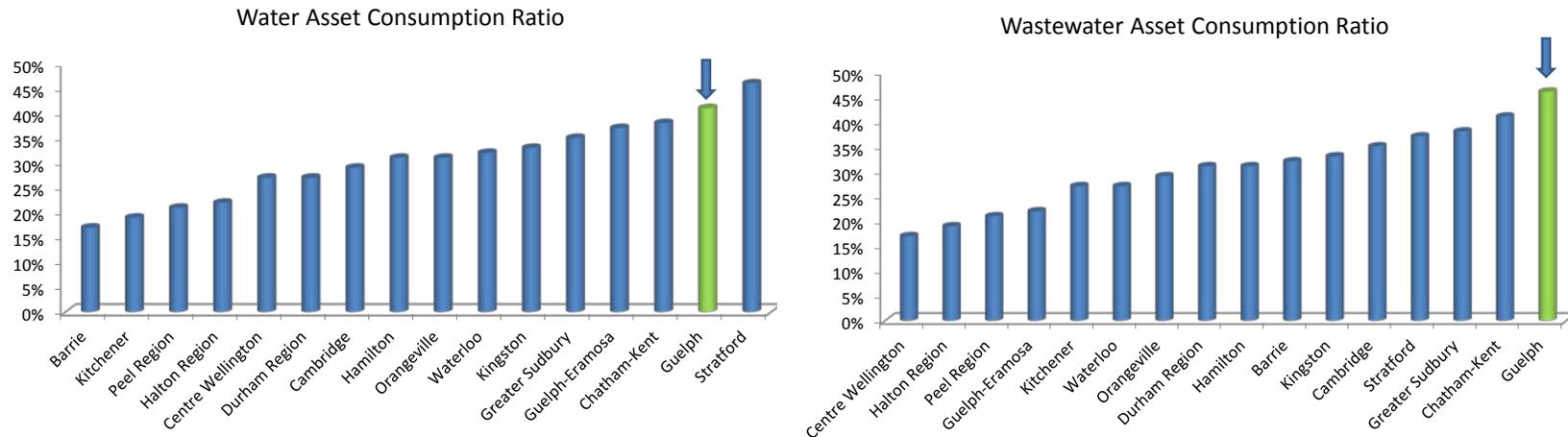
- System Capacity** - The ability to raise revenues to support the system costs differ across the survey, depending on whether the facilities are at or below capacity or whether plants have been expanded or new plants added to support future growth. The stage that each municipality is at in its growth cycle varies and will contribute to differences in the cost per ML. With a high level of costs that are fixed, systems operating with higher flows in relation to the number of customers and km of watermains have a larger base upon which to raise revenues. Peel has the highest ML of water treated in relation to the number of kms of watermains and has the lowest operating costs per ML. This reduces the cost of service for customers serviced in Peel. Conversely, Guelph-Eromosa, with one of the lowest ML of water per km has the highest system cost per ML treated. Figure 9 provides a summary of the peer municipal range of ML of water treated per km of watermains and the water rate revenue requirements per ML treated.

**Figure 9 – System Capacity**

Peer Municipalities	Water ML Treated Per Km	2017 Water Operating Budget Rate Revenues/ML Treated
Average	26,780	\$ 1.65
Median	26,636	\$ 1.60
Min	8,512	\$ 0.98
Max	47,671	\$ 2.56
Guelph	31,050	\$ 1.60

- Asset Life Cycles** – New systems have lower requirements for asset maintenance and replacement compared to older systems. The asset consumption ratio indicator provides an estimate of the useful life left in the municipality’s capital assets. Municipalities are facing significant infrastructure challenges; therefore, it is important to keep informed of the age and condition of its capital assets to ensure that a municipality is making timely and appropriate investments. The analysis is based on Schedule 51 of the 2015 Financial Information Return. As shown in figure 10, the asset consumption ratio in Guelph is the second highest in water and the highest in wastewater in relation to the peer municipalities surveyed, reflecting a relatively older system. A higher ratio indicates higher replacement needs.

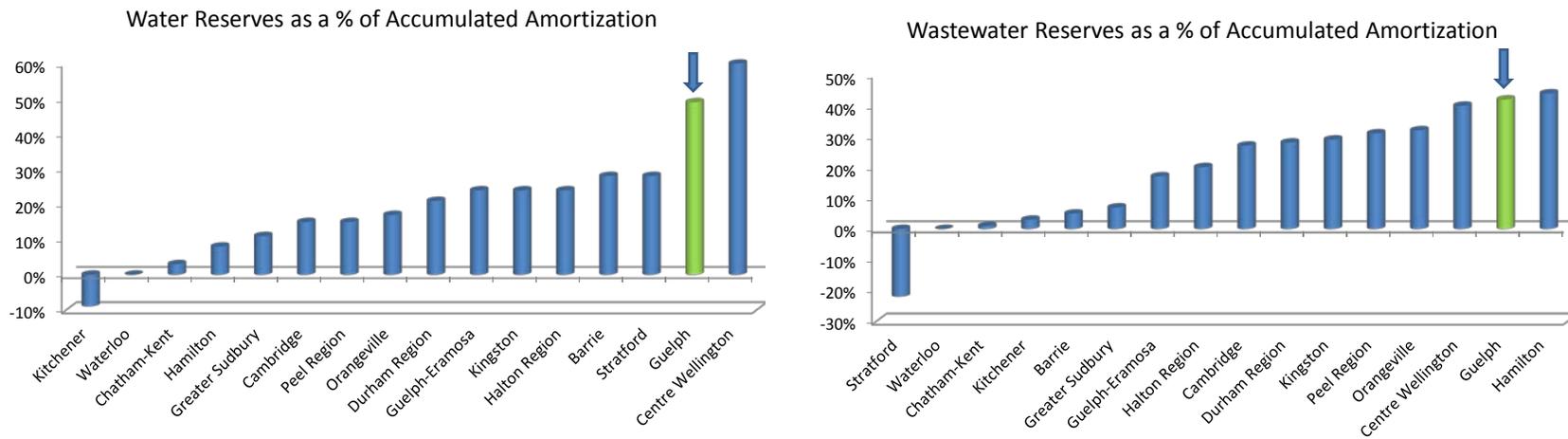
**Figure 10 – Water and WW Asset Consumption Ratio**



Further, the extent to which a municipality has maintained their respective assets and has set aside funds for future replacement of assets will impact the cost of service.

- A common financial indicator used to determine the adequacy of reserves that support infrastructure, is to compare the infrastructure reserve balances in relation to the accumulated amortization of the infrastructure (Infrastructure Sustainability Ratio). Amortization is based on the historical costs of assets and replacement costs are significantly higher, therefore, ideally, this ratio should be greater than 100%, meaning that the amount available in reserves is greater than the accumulated amortization. This is based on the principle that municipalities should set aside funds, on a regular and planned basis, to support infrastructure renewal.
- While the asset consumption ratio in Guelph is amongst the highest in the survey of peer municipalities, as shown in figure 11, so too is the reserve position in relation to the accumulated amortization, reflecting prudent financial management to set aside funds for replacement of assets. Appendix B provides a summary of the peer municipal water/ww reserves and associated policies.

**Figure 11 – Infrastructure Sustainability Ratio**



## 5 Affordability

### ***Affordability Introduction***

- Water affordability is a central element to water access. When the cost of service makes water unaffordable, there is the potential for health and safety concerns. When setting water/ww rates and rate structure, municipalities must balance competing goals and objectives, including financial sustainability, revenue stability and affordability.
- As stated in a report published by the Canadian Council of Ministers of the Environment, Municipal Wastewater Effluent Development Committee, the most prevalent method of assessing household affordability involves determining the annual amount spent on services as a percentage of household income.
- An affordability threshold value, which is expressed as a percent, is applied to a measure of income to determine the point at which the cost of water/wastewater becomes a financial burden. There is no one standard threshold percentage established in the industry. Depending on the source used, the affordability threshold range typically is from 1.5%-3.0% of household income.
- Based on our review of municipal water/ww operating budgets, rate increases have, for the most part, increased at a rate greater than inflation. This is driven by repairing and replacing aging infrastructure, complying with regulatory requirements, rising operating costs such as chemicals and hydro and the need to address historical infrastructure deficits. As such, it is important to review, on an ongoing basis, affordability metrics. Based on long range financial plans and operating budgets, the annual rate increases in 2018-2019 are estimated to range from 1.8%-10.8% across the peer municipalities surveyed. In general, the vast majority exceeded the anticipated rate of inflation.

**Figure 12 - Residential Affordability Metric – Costs as a % of Household Income**

	Water/WW Costs as a % of Income
Caledon	0.3%
Mississauga	0.4%
Brampton	0.4%
Oakville	0.5%
Halton Hills	0.6%
Milton	0.6%
Whitby	0.6%
Burlington	0.7%
Waterloo	0.7%
Hamilton	0.7%
Clarington	0.7%
Stratford	0.8%
Barrie	0.9%
Guelph	0.9%
Guelph-Eramosa	0.9%
Brock	0.9%
Orangeville	1.0%
Centre Wellington	1.0%
Kitchener	1.0%
Cambridge	1.0%
Greater Sudbury	1.1%
Kingston	1.2%
Chatham-Kent	1.3%
Average	0.8%
Median	0.8%

- The analysis is based on an average residential customer in Guelph that consumes 180 m<sup>3</sup> of water annually. The analysis also uses the 2016 average household income (source: Manifold Data Mining).
- As shown in the analysis, the cost of water/ww as a percentage of average household income in Guelph is 0.9%; slightly above the survey average and survey median.
- The affordability metric across the peer survey ranged from 0.3% to 1.3% in Chatham-Kent. All municipalities in the peer review are below the affordability threshold of 1.5%-3.0%.
- It is recognized that the analysis addresses community affordability and the situation differs on a customer by customer basis.

### Affordability Strategies

AWWA states in its Financing, Accounting & Rates Policy that “non-cost of service rate setting practices that achieve public policy goals and utility objectives may be appropriate in some situations.” Based on research into programs that support residential affordability beyond the rate structure which has already been addressed, a number of strategies were identified, as shown in figure 13 for each peer municipality.

**Figure 13 – Affordability Strategies**

	Equal Billing Plan	Early Payment Discounts	Temporary Payment Plans	Lifeline Rates	Low/No Fixed Monthly Fee	Social Assistance Relief Program/ Credit	Water Leak Forgiveness
Barrie	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cambridge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Centre Wellington	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chatham-Kent	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Durham Region	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Greater Sudbury	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guelph	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guelph-Eramosa	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Halton Region	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hamilton	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Kingston	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kitchener	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orangeville	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peel Region	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stratford	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waterloo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b># with Program</b>	<b>11</b>	<b>0</b>	<b>16</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>

There are a number of strategies that can be employed to provide assistance to support affordability. However, based on our research of the peer municipal comparators, there is limited use of a number of these strategies. As such, additional examples of municipal programs have been included in the report from municipalities outside the peer group.

As identified in the Metroline residential engagement report, the majority of residents surveyed feel that residential assistance programs are important.

### ***Equal Billing Plan***

Equalized billing for a calendar year takes the estimated prior year annual consumption and spreads this equally over the next 12 months of bills to create a predictable monthly bill. Budget billing removes uncertainty by averaging the bill over the year, thereby eliminating seasonal fluctuations. While this does not reduce the total cost of water over the course of the year, it can improve affordability in the summer months when water use typically increases. Of the peer municipalities surveyed, 11 municipalities provide this service, including the City of Guelph. The majority of those municipalities that offer this program are billed by a utility (hydro) service provider.

- Recommendation: That Guelph continue to offer an equal billing plan.

### ***Early Payment Discounts***

Some municipalities provide percentage discount for early payment (e.g. 2% discount before payment date). Within the peer municipal comparator group, no early payment discounts were identified. Examples existing in other Ontario jurisdictions include the Town of Georgina, the Town of Richmond Hill and the City of Toronto.

### ***Temporary Payment Plans***

It is a common practice for municipalities to provide an option to establish a payment plan for arrears or high water bills as a result of a leak, bill timing adjustments (e.g. to align with pension timing), and to provide a short-term or one-time program for households facing unexpected hardships. All peer municipalities, including Guelph, offer this program. Of the residents surveyed, 63% support the use of temporary payment plans.

- Recommendation: That Guelph continue to offer a temporary payment plan.

### ***Lifeline Rates***

A lifeline pricing strategy provides affordable water services to meet a customer's basic water needs. Lifeline rates are targeted subsidies based on the consumption level of households, i.e. subsidized rates for a first block of consumption, which is typically set to cover basic needs. Lifeline rates are a way of improving the design of increasing block rates since only the first block, covering basic needs, is subsidized. Anything above this threshold would be charged at the full rate. Defining the lower threshold for water consumption to meet basic needs is required. Based on our research across Ontario municipalities, the definition varies (from 5-15 m<sup>3</sup>). Some of the advantages of a lifeline rate approach include:

- Providing basic levels of service to all customers consuming at or below the threshold;
- Providing predictable support for customers that consume water within the first block of water consumption; and
- Being relatively easy to implement.

However, there are some challenges:

- Quantity-based consumption subsidies are primarily in place to assist low volume customers and will offer limited assistance to large, low income families whereby the basic need threshold may exceed the threshold established;
- It creates price distortions in term of marginal costing in that any discount offered for the first block must be recovered from the remaining rates. In effect, the rest of the customer base is required to offset the subsidy provided; and
- It is available to all customers, regardless of income and will be paid for by the general rate base consuming at higher levels, including low income families with higher consumptions.

Two examples in the peer municipal comparator have a lifeline rate structure:

- Hamilton has a two block rate structure whereby the first block, set at 10 m<sup>3</sup> per month is 50% lower than the second block. The first block offered at a reduced rate is generally regarded as a sufficient amount to meet essential water requirements. Hamilton refers to this as a lifeline rate structure to support affordability. This approach was implemented in 2014.
- Barrie has a two block rate structure whereby the first block, set at 15 m<sup>3</sup> per month is 50% lower than the second block. However, this rate structure was primarily implemented to support conservation goals and objectives as the threshold is aligned with the average usage as opposed to the minimum water required to meet basic needs.

Additional examples were identified in other Ontario municipalities including the following:

- The approach undertaken by the City of London is to include the first 7 m<sup>3</sup> in the fixed monthly fee. As such, for the first 7 m<sup>3</sup> monthly of water consumed, there is no volumetric rate but there is a fixed monthly fee for all customers. This approach was undertaken to support lifeline pricing and was implemented in 2013. This strategy was undertaken at the same time that the allocation of costs to be

recovered from fixed increased to support revenue stability and to better reflect that much of the system costs are fixed.

- The Blue Mountains has a block rate structure (set at 5 m<sup>3</sup> monthly) whereby for the first 5 m<sup>3</sup> there is no volumetric rate plus a fixed monthly fee.
- Town of Brockville has a block rate structure (set at 9 m<sup>3</sup> monthly) whereby for the first 9 m<sup>3</sup> there is no volumetric rate) plus a fixed monthly fee.
- Municipality of Middlesex Centre has a block rate structure (set at 8 m<sup>3</sup> monthly) whereby for the first 8 m<sup>3</sup> there is no volumetric rate) plus a fixed monthly fee.
- Municipality of Strathroy-Caradoc has a block rate structure (set at 11 m<sup>3</sup> monthly) whereby for the first 11 m<sup>3</sup> there is no volumetric rate) plus a fixed monthly fee.

The Residential Engagement Study, undertaken by Metroline reflects support in the community for a lifeline rate structure, with 64% of those surveyed by phone indicating that a lifeline structure is a fair option.

- Recommendation: That a lifeline rate structure be considered by the City during the next phase of the engagement (rate structure review).

### ***Low/No Fixed Monthly Fee***

Another way to support lifeline pricing through water and wastewater rates is to establish no fixed monthly fee or a very low monthly fixed fee. This approach allows customers to only pay for water that they consume. One of the challenges with this approach is that low volume customers may not be contributing to the full cost of sustaining the operations. For the purposes of this analysis, low/no fixed monthly fee was set at 10% of lower for a typical Residential customer (180 m<sup>3</sup>). Within the peer municipal group, the following municipalities provide this form of rate structure:

- Kitchener - 0% fixed
- Peel Region – 0% fixed
- Stratford – 10% fixed
- Waterloo – 5% fixed

A low cost recovery from the fixed portion of the bill supports **affordability** for low consumption customers but it may pose some challenges in terms **of fairness and equity** and **revenue stability** as the majority of the costs of the water and wastewater operations are fixed. A balanced approach in establishing the rate structure therefore must be considered.

### ***Targeted Social Assistance Relief Programs***

A Social Assistance Relief Program may be established for low income seniors and/or persons with disabilities to support affordability. None of the municipalities in the peer comparator group have a specific program in place for water/ww services but examples were identified in other Ontario municipalities including the City of Toronto, the City of St. Catharines, the Town of Newmarket, the City of London and the City of Thunder Bay. The following provides a high level summary of the key elements of these programs:

- Typically, these programs apply to seniors and persons with disabilities that are low income and is tied to receipt of Guaranteed Income Supplement and/or assistance under the Ontario Disability Support Program;
- Typically requires that it be the persons principal residence;

- A cap on the credit is in place for three of the five municipal programs ranging from \$100-\$288 per year which helps a municipality plan for the program costs;
- In one case, there is a requirement that the customer consume less than 400 m<sup>3</sup> annually (Toronto); and
- In one case (London, there is a set amount of funds available (\$100,000) annually on a first come first serve basis) and is primarily available for high bill leaks.
- Recommendation: Water and wastewater rates should not be used for income redistribution and therefore a Social Assistance Relief Program is not recommended.

Appendix C provides additional detail on each of the programs.

### ***Water Leak Billing Forgiveness***

There are two main types of water leaks; unmetered water leaks that occur within the system (typically caused by broken pipes) and metered water leaks that occur within a customer's property (typically caused by broken pipes or faulty plumbing). The focus of this section is related to water leaks that occur within a customer's property, resulting in a high consumption bill. While not a common practice in the peer municipal comparator group, four municipalities have programs which will be highlighted in this section of the report.

Based on research undertaken, the following policy components were reviewed in other jurisdictions:

- Eligibility criteria: Outlines specific requirements that need to be met for a customer's water leak to be eligible for consideration for an adjustment. This may include identification of the excess amount of water usage to qualify for a leak adjustment (for example, the water usage must exceed twice the monthly average).
- Eligible leaks: Describes the specific types of leaks that are eligible for an adjustment.
- Eligible accounts: Outlines the specific billing account types that are eligible for an adjustment.
- Adjustment period: Describes the number of billing periods that can be adjusted and the requirements to take corrective action. This typically establishes a maximum number of billing periods that may be adjusted due to the leak.
- Adjustment frequency: Describes how often an account can be considered for an adjustment.
- Adjustment calculations: Describes how billing credits are calculated.
- Proof of Repair: Describes what is required in terms of providing proof that the repair has been corrected.

Of the 16 municipalities surveyed, surveyed, four have an approved High Water Bill Leak Forgiveness Policy. The following provides a brief overview of the programs available:

- **City of Hamilton** - The City of Hamilton's policy was implemented in 2007 with updates to the policy being undertaken in 2011. It is a comprehensive policy with all the key parameters, eligibility criteria, proof of repair, timelines, minimums and maximums clearly defined. Hamilton's program is available for Residential, Not-for-Profits and Institutional customers. Key features include a minimum consumption increase of two times the average consumption, a 50% forgiveness adjustment with no cap for residential customers (cap of \$5,000 of Not-for-Profits), limit of once every year and 2 adjustments in a 10 year period. The policy also includes a number of exclusions and a requirement for repairs to be undertaken within 120 days.
- **City of Cambridge** - The City of Cambridge implemented a similar policy to Hamilton's in 2015 based on research and a desire to provide financial forgiveness for customers with one-time leaks that created affordability issues. Cambridge's program is available for Residential, Rental Residential, Condominium Corporations and Not-for-Profits. Cambridge's policy is similar to Hamilton with a few notable differences; there is a cap of \$1,000 per customer and a shorter timeframe where repairs must be made (90 days).
- **Municipality of Chatham-Kent** - Chatham-Kent's program has a higher threshold to qualify, requiring 10 times the average use and provides a rebate of 50% of the usage over the customer's highest bill in the last 12 months.
- **Durham Region** - Durham Region provides a 50% rebate of the leakage.

Approximately 75% of residents surveyed by Metroline strongly or somewhat support a water leak forgiveness program.

- Recommendation: That the City institute a water leak forgiveness program for residential customers, not-for-profits and institutional customers. The following key features of the proposed program include:
  - minimum consumption increase of two times the average consumption
  - a 50% forgiveness adjustment
  - no cap for residential customers (cap of \$5,000 of Not-for-Profits)
  - limit of once every year and 2 adjustments in a 10 year period.

Appendix D provides additional program details for each municipality noted above.

## 6 Sewer Abatement Program

### ***Sewer Abatement Program – Introduction***

To encourage water conservation of the City's groundwater resources and ensure that adequate financial resources are available for the operational and capital costs of the water and wastewater system, the City has traditionally set rates based on the principles of full cost recovery. Further, to support the City's commitment to water conservation, Guelph, offers a capacity buyback program which provides ICI customers financial assistance for water use facility audits and potential one-time financial incentives up to a maximum of \$10,000 for the implementation of capital retrofits to permanently reduce water use.

As described earlier, Guelph currently charges for water services based on a fixed monthly charge and a per meter charge for volumes of water consumed based on the water meter reading and wastewater is applied based on the volume of water used. This is a standard practice across municipalities whereby wastewater charges are based on water consumed, irrespective of whether the water enters the system for treatment. However, there are exceptions to this calculation, on an application basis, that have been implemented across some Ontario municipalities where the customer, through the production or evaporative process, result in a considerable level of water abated from wastewater treatment and, as such, is provided a rebate. These are typically referred to as sewer abatement or rebate programs. As will be described in this section of the report, the terms, conditions and parameters vary considerably from municipality to municipality as does the uptake and interest in the program.

Currently there is no provision in Guelph for adjustments to the wastewater bill for water volumes consumed in a product, evaporated as a result of a process, or other end use actions. Interest has been expressed by some businesses and industries in Guelph for the City to consider implementing a sewer rebate program, similar to programs available in some of the peer municipal comparator municipalities whereby exemptions to sewer rates may be provided to business for measured quantities of wastewater consumed via private processes and not entering the sanitary sewer for treatment.

### ***Sewer Cost Exemption Programs – Peer Municipal Comparators***

A review of the policies and practices across the peer municipal comparator group was undertaken. This included a review of related by-laws, discussions with staff in peer municipalities and leading practice research. A summary of policy and current programming of other comparator peer municipalities possessing sewer surcharge rebates was undertaken to gain insight into scope and format of programming, customer eligibility requirements, program uptake and potential rebates which would need to be funded from the general ratepayer base. The focus on the peer municipal review included details (as available) in the following areas:

- Qualifications – classes of eligible customers;
- Application process and requirements (process schematics);
- Annual renewal process;
- Ongoing abatement monitoring;
- Length of time the program has been in place;
- Minimum monthly usage, minimum diversion limits;
- Requirement for sewer meter, maintenance and calibration;
- Treatment of irrigation water usage;
- Number of customers; and
- Impact on revenues.

**Figure 14 - Sewer Abatement**

	Sewer Abatement Rebate
Barrie	<input checked="" type="checkbox"/>
Cambridge	<input checked="" type="checkbox"/>
Centre Wellington	<input checked="" type="checkbox"/>
Chatham-Kent	<input checked="" type="checkbox"/>
Durham Region	<input checked="" type="checkbox"/>
Greater Sudbury	<input checked="" type="checkbox"/>
Guelph	<input checked="" type="checkbox"/>
Guelph-Eramosa	<input checked="" type="checkbox"/>
Halton Region	<input checked="" type="checkbox"/>
Hamilton	<input checked="" type="checkbox"/>
Kingston	<input checked="" type="checkbox"/>
Kitchener	<input checked="" type="checkbox"/>
Orangeville	<input checked="" type="checkbox"/>
Peel Region	<input checked="" type="checkbox"/>
Stratford	Under Review
Waterloo	Informal

**General Findings – Peer Municipal Comparator Group**

- Of the 16 municipalities surveyed, 9 have formal sewer abatement policies/procedures and one has an informal practice.
- The vast majority of municipalities offer the program to Commercial and Industrial customers only.
- 5 municipalities have a minimum level of diversion in order to qualify for the program; 20%-25% or greater must be diverted from the wastewater system and, in one municipality, there is a requirement to divert 100 m<sup>3</sup> monthly or more.
- 2 municipalities have a cap on the amount of rebate related to the amount diverted; both at 75%.
- 2 municipalities make an adjustment to the rebate to take into consideration the impact of inflow and infiltration (I&I); 25% and 33% adjustment.
- All municipalities surveyed exclude water irrigation from the rebate programs.
- 4 municipalities charge an application fee.
- Most municipalities require a separate meter to be installed to measure sewage, however, a few municipalities allow for a consultant review to estimate the % diverted or other alternative methods.
- The number of customers participating in the program varies considerably across the peer municipalities and is impacted by the program criteria and the customer base.

Figure 15 - Peer Municipal Sewer Rebate Program Summary

	Customer Class Eligibility	Min Diversion Criteria	Cap	Sewer Meter Requirements	Rebate %	Application Fee	# of customers	Annual Program Cost
Barrie	MR (single Meter), ICI	Greater than 100 m <sup>3</sup> per month diverted	No	Yes and/or other measuring devices	Meter Differential	\$ 349.24	2	Not available
Cambridge	Commercial & Industrial	No	No	Yes, but exceptions	Meter Differential or Alternate Method	None	13	\$ 280,000
Durham Region	ICI and Res plumbing	Greater than 20% diverted	No	Technical Report required, meter optional	50% Residential, ICI Meter Differential Adjusted 25% I&I	\$650, one time	30	Not available
Greater Sudbury	ICI	No	No	Yes	Meter Differential	None	3	\$ 10,000
Halton Region	Commercial & Industrial	Greater than 25% diverted	75%	Not Required, Consultant Analysis	Consultant % Analysis	\$1,058.87 every 5 years	40	\$ 625,000
Hamilton	Commercial & Industrial	Greater than 25% diverted	75%	Not Required, Consultant Analysis	Adjusted 33% I&I, or Consultant %	\$578.80	9	\$ 790,000
Kingston	Commercial & Industrial	No	No	Yes	Meter Differential			Not available
Kitchener	Commercial & Industrial	No	No	Yes	Meter Differential	None	45	\$ 550,000
Peel Region	Industrial	Greater than 20% diverted	No	Yes	Meter Differential or Alternate Method			Not available
Waterloo	Commercial & Industrial	No	No	No	Consultant % Analysis	None		Not available

Appendix E provides additional detail on the programs in each of the area municipalities.

### ***Sewer Abatement Consultation***

Consultation with the ICI sector was undertaken by DFA. Approximately 23 stakeholders were contacted by telephone and/or email to indicate our interest in and purpose for meeting with them to discuss their operations. These included nineteen (19) industrial, one (1) commercial and three (3) institutional customers. Seven participated in the process and provided feedback. One of the responding stakeholders was a parent company in the auto manufacturing industry representing twenty four (24) high consumption customer accounts.

There was considerable support for the implementation of a sewer abatement program by those industries that participated in the consultation process. However, residents surveyed by Metroline are less supportive of a business program such as a Wastewater Volume Reduction program. Approximately 49% of residents surveyed either strongly support or might support a sewer rebate program.

DFA undertook a high level estimate of the volume of water that is diverted and may qualify for rebates under a sewage rebate program by first identifying customers who would potentially participate and secondly estimating the percentage of water that is diverted. Assumptions were made by DFA using the available data and feedback from the interviews. The following assumptions were made:

- Only the high volume customers that consistently divert a significant portion of water would participate. These would be mainly high volume manufacturing and food and beverage customers;
- Customers who have already been communicating with the City about cost exemptions (regardless of water consumption levels), would be interested in participating; and
- The sewage rebate program would apply mainly to industrial customers which is a common feature of most programs in use in other jurisdictions.

### ***Sewer Abatement Program Recommendations***

- Recommendation: That a sewer abatement program be implemented in the City of Guelph. The following summarizes the proposed parameters of the program:
  - Available for Commercial, Industrial and Institutional customers
  - Requirement for a permanent flow meter installation for sewer outflows to be installed and a requirement for continuous flow measurement be undertaken. Alternatively, an independent engineering consultant to be hired by the customer to prepare a report outlining the degree of water flows discharged into the system to define the discount factor.
  - A 25% minimum level of water diverted to be eligible for the program
  - Outdoor irrigation is excluded from the rebate program.
  - Water abated must come from a City source.
  - An administrative fee will be charged for program participation.
  - The maximum amount of diversion eligible for a refund is 75%.
  - A 25% I&I percentage to be added back to the actual sewage discharge volume to ensure that all customers contribute to I&I. Municipalities need to account for inflow and infiltration entering the sanitary sewer (i.e. groundwater flowing through pipe joints and cracks) which is delivered to the wastewater treatment plants. The inflow and infiltration flow must be treated with the wastewater and can cause high peak flows in older systems which are highly influenced during heavy rainfall events. These high peak flows can cause partially treated wastewater to enter the environment where the collection system and plant are unable to process higher than normal flows.

- Recommendation: That a transition plan be considered to help fully understand the implications of the program on rate revenues. This is required because the cost of the system is largely fixed and any reduction in the revenues that are currently recovered would have to instead be recovered from other customer groups.

### ***Sewer Abatement Cost Analysis***

An analysis of the potential cost of the program using the recommended policy noted above and using the assumptions included in the DFA report with respect to customer water and diversion rates was undertaken. The anticipated annual cost of the program is approximately \$720,000. Note that this analysis excluded commercial properties as the DFA report was based on the largest industrial and institutional customers. If implemented, the rebates would need to be funded from the entire customer base. This is equivalent to an increase of 1.2% on the water/wastewater rates. On a residential customer consuming 180 m<sup>3</sup> annually, this is equivalent to an increase of \$10.

*Appendix A – System Descriptions – Peer Municipal Comparators*

**City of Barrie**

Water System	WW
<ul style="list-style-type: none"> <li>• 1 Surface Water Treatment Plant (SWTP) and associated low lift pumping station (LLPS)</li> <li>• 12 groundwater wells</li> <li>• 7 booster stations</li> <li>• 3 in-ground storage facilities</li> <li>• 3 elevated storage towers</li> <li>• 626 of water mains</li> <li>• Treatment at the SWTP consists of primary screening, flocculation, membrane filtration, granular activated carbon contactors (for taste and odor control), and disinfection with chlorine gas.</li> </ul>	<ul style="list-style-type: none"> <li>• Tertiary Treatment</li> <li>• 1 WW Treatment Facility - tertiary treatment plant that uses ultra violet disinfection to treat all sewage before sending it into Lake Simcoe. The facility receives domestic, commercial and industrial wastewater and provides a level of treatment to meet the water quality standards of Lake Simcoe</li> <li>• 6 major pumping stations</li> <li>• 537 km of sewer mains</li> </ul>

*City of Cambridge*

Water System	WW
<ul style="list-style-type: none"> <li>• Two-tier system, Cambridge is responsible for distribution system. Distribution system is divided into five individual pressure zones based on the water supply components and the varying elevations throughout the City</li> <li>• There are 38,990 service connections</li> <li>• 3,388 hydrants providing fire protection</li> <li>• 5,137 valves of various sizes for controlling water flow</li> <li>• 581 kilometres of watermains located within Cambridge, of which Cambridge owns 487 kilometres, the Region of Waterloo owns 62 kilometres, and there are 32 kilometres of dual-use mains</li> </ul>	<ul style="list-style-type: none"> <li>• Two Tier system, Cambridge is responsible for collection system</li> <li>• 522 km of sewer mains</li> </ul>

***Municipality of Centre Wellington***

Water System	WW
<ul style="list-style-type: none"> <li>• 9 groundwater well sources</li> <li>• Distribution system covers the village of Elora and the Town of Fergus and is connected by a booster station</li> <li>• 4 elevated storage towers</li> <li>• Watermain valves, service valves, fire hydrants, and water meters</li> <li>• 108 km of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• Tertiary treatment</li> <li>• Wastewater is treated at two plants and effluent is discharged into the Grand River</li> <li>• 7 pumping stations</li> <li>• 101 km of ww sewer mains</li> </ul>

***Municipality of Chatham-Kent***

Water System	WW
<ul style="list-style-type: none"> <li>• Chatham-Kent draws from both surface and groundwater                             <ul style="list-style-type: none"> <li>○ 6 drinking water systems                                     <ul style="list-style-type: none"> <li>▪ 4 surface water</li> <li>▪ 2 ground water facilities</li> </ul> </li> </ul> </li> <li>• Standalone distribution system</li> <li>• 3,321 hydrants</li> <li>• 1,710 km water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 11 Wastewater plants                             <ul style="list-style-type: none"> <li>• 3 Treatment/water Pollution Plants</li> <li>• 3 Lagoon Systems</li> <li>• Mitchell’s Bay Sewage Lagoon System</li> </ul> </li> <li>• 533 km of sewer mains</li> </ul>

*Durham Region*

Water System	WW
<ul style="list-style-type: none"> <li>• 3 sources: Lake Ontario, Lake Simcoe and groundwater</li> <li>• 6 surface water treatment plants</li> <li>• 22 water storage facilities</li> <li>• 18 pumping stations</li> <li>• 22 groundwater wells</li> <li>• 2,470 km water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 11 Sewage Treatment Plants – each plant undergoes primary and secondary treatment to clean the water prior to release back into the Lake. Sludge from the system is treated using anaerobic digestion and sent for land application or to incineration</li> <li>• 52 Sewage Pumping Stations</li> <li>• 2,122 km of sewer mains</li> </ul>

**Greater Sudbury**

Water System	WW
<ul style="list-style-type: none"> <li>• 6 water systems</li> <li>• 2 surface water treatment plants</li> <li>• 2 fluoridation facilities</li> <li>• 21 deep wells</li> <li>• 10 treated water storage facilities</li> <li>• 873 km of watermains</li> </ul>	<ul style="list-style-type: none"> <li>• 14 wastewater treatment facilities                             <ul style="list-style-type: none"> <li>○ 10 wastewater treatment plants</li> <li>○ 4 sewage treatment lagoons</li> </ul> </li> <li>• 68 lift stations</li> <li>• Biosolids management facility at the Sudbury WWTP</li> <li>• Rick tunnels to the Sudbury WWTP</li> <li>• 793 km of sewer mains</li> </ul>

*City of Guelph*

Water System	WW
<ul style="list-style-type: none"> <li>• Two main sources of water; groundwater and groundwater under the direct influence of surface water with effective in-situ filtration (GUDI-WEF)</li> <li>• 21 operational groundwater wells and a shallow groundwater collector system</li> <li>• 6.38 kilometres of 900-1,050 mm diameter water supply aqueduct</li> <li>• 5 underground storage reservoirs with a combined approximate capacity of 48,000 cubic metres (48 million litres)</li> <li>• 3 water towers with a combined approximate capacity of 11,200 cubic metres (11.2 million litres)</li> <li>• 4,184 watermain valves</li> <li>• 2,763 fire hydrants</li> <li>• 551 kms of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 6 pumping stations</li> <li>• Tertiary treatment facility, having rated treatment capacity of 64 million litres (ML) of wastewater per day</li> <li>• 520 km of sewer mains</li> </ul>

**Guelph-Eromosa**

Water System	WW
<ul style="list-style-type: none"> <li>• Hamilton Drive Water Supply System – 2 groundwater wells (Huntington and Cross Creek) each with its own pumphouse and grade-level reservoir</li> <li>• Rockwood Water Supply System – 3 municipal groundwater wells</li> <li>• 1 water tower</li> <li>• 32 km of water mains</li> <li>• Gazer Mooney operated by the City of Guelph (71 users)</li> </ul>	<ul style="list-style-type: none"> <li>• 4 pumping stations</li> <li>• 1 transfer station</li> <li>• 33 km of sewer mains</li> </ul>

**Halton Region**

Water System	WW
<ul style="list-style-type: none"> <li>• 12 Treatment Plants</li> <li>• 3 surface (Burlington, Burloak, Oakville)</li> <li>• 9 groundwater (well source)</li> <li>• 19 municipal wells</li> <li>• 22 water reservoirs</li> <li>• 15 booster stations</li> <li>• 13,500 hydrants</li> <li>• 20,500 valves</li> <li>• 2,220 km of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• WWTP's                             <ul style="list-style-type: none"> <li>○ 3 secondary</li> <li>○ 4 tertiary plants</li> </ul> </li> <li>• 88 pumping stations</li> <li>• 1,984 kms of sewer mains</li> </ul>

*City of Hamilton*

Water System	WW
<ul style="list-style-type: none"> <li>• 1 treatment plant</li> <li>• 25 pumping stations</li> <li>• 21 storage facilities</li> <li>• 8 wells</li> <li>• 2 surge tanks</li> <li>• 2,060 kms of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 2 WW Treatment plants</li> <li>• CSO tanks</li> <li>• 72 pumping stations</li> <li>• 20 ww control gates</li> <li>• 1,786 kms of sewer mains</li> </ul>

**City of Kingston**

Water System	WW
<ul style="list-style-type: none"> <li>• 2 water treatment plants with water supplied from Lake Ontario for the majority of the City and 1 smaller scale treatment plant.</li> <li>• 3 combined reservoir and booster stations</li> <li>• 10 water storage facilities</li> <li>• 600 kms of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 3 treatment plants.</li> <li>• 33 pumping stations</li> <li>• 9 combined overflow tanks</li> <li>• 490 kms of sewer mains</li> </ul>

**City of Kitchener**

Water System	WW
<ul style="list-style-type: none"> <li>• Distribution system only, Region of Waterloo provides treatment</li> <li>• 871 km of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 23 pumping stations</li> <li>• 824 km of sewer mains</li> </ul>

*Town of Orangeville*

Water System	WW
<ul style="list-style-type: none"> <li>• Water Pollution Control Plant</li> <li>• 12 wells                             <ul style="list-style-type: none"> <li>○ 9 well fields</li> <li>○ 3 classified as groundwater wells</li> <li>○ 9 classified as groundwater under the direct influence of surface water</li> </ul> </li> <li>• 4 water storage and high lift stations</li> <li>• 110 kms of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• WW Pollution Control Plant</li> <li>• 4 pumping stations</li> <li>• 1,448 manholes</li> <li>• 175 kms of sewer mains</li> </ul>

*Peel Region*

Water System	WW
<ul style="list-style-type: none"> <li>• Water sourced from Lake Ontario, a Regionally owned well and a private well</li> <li>• 2 lake based treatment plants</li> <li>• 15 wells</li> <li>• 13 pumping stations</li> <li>• 23 storage facilities</li> <li>• 31,529 hydrants</li> <li>• 4,552 kms of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 2 lake base treatment plants</li> <li>• 1 wastewater communal treatment plant</li> <li>• 1 groundwater water treatment plant</li> <li>• 32 sewage pumping stations</li> <li>• One odour control facility</li> <li>• 52,332 manholes</li> <li>• 3,560 km of sanitary sewers mains</li> </ul>

**City of Stratford**

Water System	WW
<ul style="list-style-type: none"> <li>• 2 elevated towers</li> <li>• 11 wells with 6 pumping stations</li> <li>• 887 fire hydrants</li> <li>• 184 km of watermains</li> </ul>	<ul style="list-style-type: none"> <li>• Water Pollution Control Plant</li> <li>• 11 pumping stations</li> <li>• 2,000 manholes</li> <li>• 160 kms of sewer mains</li> </ul>

**City of Waterloo**

Water System	WW
<ul style="list-style-type: none"> <li>• Distribution system only, Region of Waterloo provides treatment</li> <li>• 431 kms of water mains</li> </ul>	<ul style="list-style-type: none"> <li>• 6 sewage pumping stations</li> <li>• 409 km sewer mains</li> </ul>

*Waterloo Region*

Water System	WW
<ul style="list-style-type: none"> <li>• Responsible for the Region’s water supply; the system includes 20 ground water supply systems</li> <li>• 110 water supply wells</li> <li>• 1 surface water treatment plant and North Dumfries and Wellesley distribution systems, (annually supplying 54 million cubic meters).</li> <li>• 443 kms water mains</li> <li>• 4 pumping stations</li> <li>• 3 storage facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Tertiary</li> <li>• Responsible for the Region’s wastewater treatment (which treats 66 million cubic meters annually)</li> <li>• 13 wastewater treatment plants</li> <li>• 1 biosolids processing facility</li> <li>• 6 pumping stations and two collection systems (in North Dumfries and Wellesley).</li> <li>• 409 kms wastewater pipes</li> </ul>

***Appendix B – Reserve Summary– Peer Municipal  
Comparators***

**Reserve Summary – Peer Municipal Comparators**

	Consolidated Reserve Year End Balance 2015 Millions		Policy/Target
	Water	Wastewater	
	Barrie	\$ 18.77	
Cambridge	\$ 3.60	\$ 10.45	Stabilization up to 5% of operating budget in water and 10% in wastewater. Capital Reserves funded through annual contributions which are increasing to address backlog and future renewal needs. City also has a meter reserve to support timely replacement of meters.
Centre Wellington	\$ 8.04	\$ 6.59	To provide a source of funding for user-pay planned and unplanned capital projects. There is also a meter replacement reserve and a grinder pump replacement reserve.
Chatham-Kent	\$ 3.27	\$ 0.99	Reserves for the full cost of replacement or rehabilitation of major assets will be funded from ongoing operations at a rate which reflects the consumption of that asset by current ratepayers. Contributions to these reserves will commence in the fiscal year that the asset is acquired or put into service and will be based on an estimate of the useful life of the underlying asset.
Durham Region	\$ 76.05	\$ 138.27	Durham Region's financial policies (pay as you go financing, use of reserves, commitment that growth-pays-for growth, and minimal debt issuance). Gradual increase in reserve contributions.

	Consolidated Reserve Year End Balance 2015 Millions		Policy/Target
	Water	Wastewater	
Greater Sudbury	\$ 14.64	\$ 16.19	Capital Reserve contributions gradually being increased until such time as capital contributions equal 2% of infrastructure replacement value. Any net surplus generated from water and wastewater in any year shall be contributed to the Capital Reserve fund.
Guelph	\$ 48.75	\$ 59.61	Stabilization - recommended target of 8%-10% of gross operating revenues. Capital - 100% or greater of annual depreciation expense.
Guelph-Eramosa	\$ 1.11	\$ 0.87	To fund replacement of assets.
Halton Region	\$ 98.24	\$ 89.07	Stabilization target is 15% of gross expenditures. Capital Reserves are based on capital program with a pay-as-you go strategy to maintain assets in a state of good repair.
Hamilton	\$ 23.95	\$ 194.36	Capital Reserves funded through contributions from Operating for replacement of assets. Year end surpluses are also transferred to the capital reserves. Target Level: 0.5 - 2% of asset value replacement <ul style="list-style-type: none"> <li>• Water Reserve: \$13 million - \$53 million</li> <li>• Wastewater Reserve: \$21 million - \$87 million</li> </ul>
Kingston	\$ 28.06	\$ 36.51	

	Consolidated Reserve Year End Balance 2015 Millions		Policy/Target
	Water	Wastewater	
Kitchener	\$ (1.59)	\$ 1.39	Capital Reserve: Closing balance should not be less than \$4.5 million in water and \$6.8 million in wastewater. Rationale: 50% of the average annual balance of approved expenditures in the 10 year capital forecast which provides for unanticipated overruns. Maximum: Closing balance should not exceed 1.5 times the average annual approved capital expenditures. Rationale: allows for funding required to address backlog of infrastructure work and provides flexibility for funding of projects as needed. Stabilization Reserve: Closing balance should not be less than 10% of the Utility revenues Rationale: Based on best practices as determined by the Government Finance Officers ' Association (GFOA) Provides contingency for the fluctuations in revenues from year to year and unforeseen events Maximum: Closing balance should not exceed 15% of the Utility revenues
Orangeville	\$ 2.86	\$ 4.12	No established policies.
Peel Region	\$ 160.82	\$ 317.09	State of Good Repair (SOGR) reserve is for future repairs and replacements on the existing infrastructure, which is sourced from contributions through the annual operating budget and recovered through water retail rate. The types of capital projects supported by these reserves include replacement of
Stratford	\$ 3.47	\$ (4.23)	No established targets at this stage.

Consolidated Reserve Year End Balance 2015 Millions			Policy/Target
	Water	Wastewater	
Waterloo	\$ -	\$ -	Currently the water and sanitary sewer utilities are operating under the parameters of one combined reserve which is intended to cover all costs including both operating and capital and any annual year-end deficits incurred. The current Council approved minimum target reserve level for the consolidated utilities reserve is \$4,000,000 (comprised of: \$1.5M for water, \$1.5M for sanitary sewer and \$1M for stormwater). This approved target level does not provide adequate coverage for all the funding needs and risk associated with operating the water and sanitary sewer utilities. Rate Report in 2016 recommended the following Capital: Preference for a minimum capital reserve balance of 1% of asset replacement value. Stabilization: Preference for a minimum reserve balance of 5% of annual rate revenue.
Waterloo Region	\$ 36.07	\$ 13.88	Recently reviewed policies and internal targets. Targeted stabilization reserve balance of 20% of gross expenditures. Capital Reserves are based on a review of the 10 year capital requirements to ensure that the Region can support the replacement of assets.

***Appendix C – Social Assistance Relief Program – Ontario  
Examples***

### *City of Toronto Water Rebate Program*

A rebate program is available for low-income seniors and low-income persons with a disability. The following summarizes the key parameters:

- Available for principal residence only;
- Must provide SIN and an unaltered Notice of Assessment;
- Customer must consume less than 400 m<sup>3</sup> annually;
- Have a combined income of \$50,000 or less;
- Must be 65 years of age or older; OR
- Be 60-64 years of age and in receipt of a Guarantee Income Supplement under the Old Age Security Act; if widowed, be in receipt of the Spouse's Allowance under the Old Age Security Act; OR
- Be 50 years of age or older and be receiving either a pension or a pension annually resulting from a pension plan under the Income Tax Act; OR
- Be a person with a disability and be in receipt of disability benefits
- Rebate is calculated as a product of the percentage reduction in the Block 2 rate over the Block 1 rate times the flat rate bill for accounts paid on or before the due date for the year in which the water rebate is being sought to a maximum water rebate that an eligible metered customer would be entitled to receive for a consumption of 400 m<sup>3</sup>.

### *City of St. Catharines*

For residents 65 years of age and older, the City of St. Catharines offers a maximum \$100 annual credit on water/ww fees. A homeowner may submit an application if:

- The annual amount of the water/wastewater bill exceeds the \$100 maximum credit allowance.
- Applicants must own and occupy the property as their principal residence.
- The water/wastewater account must be for a residential, single family dwelling to be eligible.
- Applicants must be receiving benefits from the Guaranteed Income Supplement program to be eligible. Proof of receipt of benefits must be submitted with the application.
- One credit per individual account billed will be granted. Tax and water/wastewater accounts must be in good standing.
- Approved credits are applied to the water/wastewater account in January of the next year. It will appear on the first bill issued after the adjustment is applied to the account.
- No cash refunds and the credits are non-transferable. Owners are required to pay their bills as they come due.
- For those using monthly pre-authorized payments, the credit will be taken into consideration in the annual equalization of the account.
- Applications must be submitted to the City of St. Catharines each year between Oct. 1 and Nov. 30. No deadline exceptions will be made.

### ***Town of Newmarket – Water Rebate Program***

The Water and Wastewater Rate Rebate for qualified applicants is \$288 per year. To apply for this rebate, residents must provide proof annually to the Town of Newmarket to demonstrate eligibility for program and complete an application form. The program that is available to any property owner paying a Newmarket resident water bill for their property and qualifying for any of the following:

- The Guaranteed Income Supplement under the Old Age Security Act
- Support under the Ontario Disability Support Program
- Ontario Works Assistance
- A similar federal or provincial income support program

### ***City of Thunder Bay – Water Credit Program for Low-Income Seniors and Low-Income Persons with Disabilities***

If a customer qualifies, there is a \$100 credit available. Key elements include:

- Occupy residential property in the City of Thunder Bay and have been assessed as Owner of such property for at least one year immediately preceding the date of this application.
- Property is principal residence.
- The program is available to Low-Income Person with a Disability (Please attach proof of receipt of assistance paid under the Ontario Disability Support Program Act or proof of receipt of assistance paid under the Canada Pension Plan and
- Low-Income Senior (Please attach proof of age and receipt of an increment paid under the Guaranteed Income Supplement (GIS)).

### *City of London*

The City has a 25-cent fixed fee that is applied to each monthly bill for all single family residential water customers in London. These funds are collected over the year and applied to the customer assistance program. If the money from these funds has been used-up at any point in the calendar year, then the program will be suspended until January 1st of the following year when the funds are topped up again. The charge contributes to a special reserve fund and will be drawn against for:

- Helping low-income Londoners deal with crisis situations on their monthly water bills using existing programs managed and delivered through partnerships with London Hydro, the Salvation Army, and the City. An annual fund of \$100,000 will be kept and topped up each year to help those in need;
- Helping low-income Londoners make changes to the fixtures in their homes to help lower their monthly water use. On average 40% of home water use is from the toilet; and
- Helping London's water customers pay for water and wastewater charges **one time** that have occurred as a result of a plumbing failure in their homes.
- Maximum of 3 months usage of water credited to bill and an application must be completed within 2 months of detecting the issues
- Eligibility:
  - The volume must be at least three times the average use
  - Cannot be as a result of pool or hot tub filling, irrigation, car washing, or other discretionary water uses
  - There must be proof of a repair
  - One time relief of the issue
  - A single family home paying the customer assistance rate

*Appendix D – High Water Leak Forgiveness Program – Peer  
Municipal Comparators*

*City of Cambridge*

Policy	2015 - Corpserv/15-32, High Water Leak Adjustment Policy
Customer's Eligible	Residential, Rental Residential, Condominium, Corporations and Not-for-Profits
Min Consumption	Increase must be greater than 2x average consumption
Eligible Adjustment Amount	Adjustments will be based on 50% of the difference between the actual water consumption that the high water bill was based on and the customer's average consumption.
Proof of Repair Requirements	Proof of repair must be provided which may include pictures, receipts, and/or invoices from a licensed plumber. Public works may be required to visit the property to ensure that the leak has been repaired and must be granted access to the property for this purpose within 2 weeks of the request to gain access
Timing Limitations	Adjustment request must be received no later than 90 days following the issuance of a high bill. The Bill Issue Date indicated on the high bill will be used to determine if the submission date of an application is compliant with this requirement
Cap of Financial Adjustment	Adjustment amounts will be capped at a maximum of \$1,000.
Limit on # of Adjustments	Once every 12 consecutive months. 2 adjustments in any 10 year period
Exclusions	The property cannot be vacant or have been unattended during the timeframe when the leak occurred.
	High water bill cannot be a result of a "catch-up" bill where an actual reading was obtained following a minimum of 2 consecutive estimated bills. Customers are advised on their water bill if their bill was based on an ESTIMATE or ACTUAL read.
	Cannot be a result of filling a pool or hot tub, watering lawns/gardens, washing cars, or other outdoor or discretionary water uses
	Water loss due to theft, vandalism, or construction damage is not eligible for an adjustment.
Applicability	Applies to both the water and wastewater volumetric portion of the bill

**City of Hamilton**

Policy	2007 original policy, amended in 2011 - Water Leak Adjustment Policy PP-0005
Customer's Eligible	Residential, Not-for-Profits/Institutional
Min Consumption	Increase must be greater than 2x average consumption
Eligible Adjustment Amount	Adjustments will be based on 50% of the water consumption amount exceeding the AVERAGE of the similar period from the previous year.
Proof of Repair Requirements	An adjustment may occur only after all leaks have been repaired and verified with an actual water meter read by the City's agent
Timing Limitations	Must complete in full the Request Form and provide documentation of repairs made prior to being approved for an adjustment within 120 calendar days after the date of final repair(s)
Interim Arrangements	Customers are advised to pay the entire amount due with the normal payment period or enter into payment arrangements for the excessive amount in order to remain in good standing on all current billings. Reimbursements will only occur when an adjustment request is granted
Cap of Financial Adjustment	No cap on Residential, cap of \$5,000 on Not-For-Profit
Limit on # of Adjustments	Once every 12 consecutive months. 2 adjustments in any 10 year period
Exclusions	Excluded if properties are vacant more than 72 hours
	Excluding adjustments where high water usage is identified from a "catch-up" billing following a minimum of 2 consecutively estimated billings. Actual meter readings are necessary for bills to reflect actual higher water usage to trigger leak awareness that will drive the associated leak detection and subsequent leak repairs.
	Cannot be if usage above the customer's average monthly consumption is due to seasonal usage such as watering of sod, gardening, filling swimming pools or whirlpools, washing vehicles, etc.

	Water loss is due to theft, vandalism or construction damage as the responsibility to resolve these issues lies with the customer
	Leak was caused by a third party from whom the customer is able to recover their costs
Applicability to Water/WW	Applies to both the water and wastewater volumetric portion of the bill
Annual Estimated Cost of Program	\$50,000
Approximate # of customers	165

***Municipality of Chatham-Kent***

Policy	Original policy 1998, revised in 2011
Customer's Eligible	Residential
Min Consumption	Must be greater than 10 times average customer's consumption for accidental malfunction of a water fixture
Eligible Adjustment Amount	The rebate will be equal to one half (1/2) of the usage over the customer's highest bill in the last twelve (12)
Cap of Financial Adjustment	None stated
Limit on # of Adjustments	Only allowed once to the customer at that residence
Exclusions	N/A
Applicability to Water/WW	Where staff has confirmed that the excessive water did not flow into the sanitary sewer system, the customer will also qualify for a rebate of the sanitary sewage charge.

***Durham Region***

Policy	By-law 90-2003 Section 14(8-9)
Customer's Eligible	Residential
Min Consumption Increase Criteria	Residential Consumers who receive metered Regional Water may appeal for relief from the Sewer Surcharge Rates related to metered water not entering the Regional Water Pollution Control System, due to plumbing problems. There shall be no other basis for residential sewer appeals.
Eligible Adjustment Amount	Rebates of up to 50% of the estimated volume of metered water not entering the Regional Water Pollution Control System due to plumbing problems and the amount of such rebates shall be subsequently reported to Regional Council.

*Appendix F – Sewer Abatement Program – Peer Municipal Comparators*

*City of Barrie*

By-law/Procedure	By-law 2016-115, section 9.10
Qualification – classes	Multi-Residential with a single water meter, Commercial, Institutional and Industrial customers
Application process requirements	Application to be submitted to City by customer including schematics of process water use and metering information. This application is reviewed and approved by City's Operations Dept. Program ends when change of ownership or change related to the approved plumbing schematic. Must reapply for the exemption prior to the Approved Certification expiration in order to continue to be eligible
Monitoring	At the City's discretion
Program Inception	Unknown
Caps on rebates	None specified
Minimum/Maximum monthly diversion	Must divert more than 100 m <sup>2</sup> per month away from the wastewater system due to evaporative losses in HVAC, water consumed in product and through cooling system
Sewer meter requirements	A sewer meter must be supplied and maintained at the sole expense of the customer. Meter type must be approved by City. Must get a meter permit from the City. Applicant responsible for maintaining meter.
Treatment of irrigation	Not eligible
Calculation	Meter Differential
# of customers	2
Impact on revenues	Not available
Application Fees	\$349.24

*City of Cambridge*

By-law/Procedure	Procedure TPW – 70-030
Qualification – classes	Commercial and industrial customers eligible for wastewater rate forgiveness for volumes diverted from sanitary sewer
Application process requirements	Process schematics required to support application.
Monitoring	Ongoing monitoring to ensure that the meters continue to operate accurately.
Program Inception	2007 (City assumed responsibility from the Region)
Caps on rebates	No cap identified
Minimum/Maximum monthly diversion	No diversion eligibility thresholds defined.
Sewer meter requirements	It is the responsibility of the proponent to install all required rebate meters in the location and manner defined by Public Works, including installation of all remote reading wiring and equipment. It is responsibility of the owner to repair/replace any faulty wiring for the remote reader. The proponent must monitor all rebate water meters throughout the year to verify they are operational. If a failure occurs estimations shall only be accepted at the City's discretion, and may require additional supporting documentation. Meter type and meter location to be approved by City with any meters over 1.5" to be purchased and installed at sole cost of customer. Meters to external touch pad to allow for ongoing readings, with monthly service costs for all meters to apply. Processes that cannot utilize meters may not be approved for rebate purposes. Public Works may, at their discretion approve such processes and may attach additional stipulations. Any such volumes relating to specific rebate must be forwarded to City staff, by the proponent, within 30 days of the new calendar year. Any change in site contact information is to be forwarded to City staff.
Treatment of irrigation	Not eligible
# of customers	13
Impact on revenues	\$280,000. Most rebates are issued once at the beginning of each year.
Application Fees	None

**Durham Region**

By-law/Procedure	By-law 90-2003 as amended section 14 (1)-(8)
Qualification – classes	Commercial, Industrial, Institutional. More than 20% of the water does not enter the pollution control system. Residential may apply only when there is problem due to plumbing whereby the water does not enter the pollution control system.
Application process requirements	Application
Monitoring	
Program Inception	2003 or earlier
Caps on rebates	Residential customers 50% of the estimated amount not entering the pollution control system. No cap on ICI
Minimum/Maximum monthly diversion	An infiltration allowance of 25% is added back to the amount that they discharge to account for normal flow differential experienced by most customers. The sanitary sewer bill shall be calculated on the basis of their total or actual direct discharge volume to the Regional Water Pollution Control System plus the infiltration allowance volume.
Sewer meter requirements	Private meter which is the sole responsibility of the customer to install, test, repair and replace. Note that it is not a requirement to have a meter. A technical report is submitted by the customer and reviewed and inspected by the Region.
Treatment of irrigation	Not eligible
Calculation	Meter Differential + 25% infiltration added back
# of customers	30
Impact on revenues	
Application Fees	Non-refundable application fee (\$650 + applicable taxes). One-time fee which is place until there is a change in process or a change in ownership.

**Greater Sudbury**

By-law/Procedure	By-law 2017-6, section 24 (1-2)
Qualification – classes	Non-Residential Properties upon application
Application process requirements	Application which will include proof that the majority of water is used in the production of a product. Based on feedback from staff, it is up to the discretion of the meter shop manager
Monitoring	At the discretion of City
Program Inception	Prior to 2000
Caps on rebates	No cap
Minimum/Maximum monthly diversion	Majority of the water used by the private property is utilized in the production of a product. Up to the discretion of Public Works
Sewer meter requirements	Private meter is required to be installed by the property owner to measure the water used in the production of the product in addition to the meter that measures water consumed.
Treatment of irrigation	Not applicable
Calculation	Based on the meter read differential, a reduction will be made at the time of billing
Number of customers	3
Impact on revenues	\$10,000
Application Fees	None

**Halton Region**

By-law/Procedure	By-law 184-95 section 37,38 and By-law 127-15
Qualification – classes	Commercial and Industrial customers only
Application process requirements	Customer must submit application for relief and pay an application fee. A site visit is held upon receipt of the application. The site visit would be attended by the engineering consultant retained by the Region and a representative from the Region’s Public Works staff
Monitoring	Region hires independent consultant to visit site and conduct evaluation of wastewater diversion in comparison to metered water use at property. The engineering consultant prepares a report outlining the degree of water flows discharged into the Regional sanitary sewer system which will determine the discount factor.
Program Inception	1985 or earlier
Caps on rebates	75% maximum diversion
Minimum/Maximum monthly diversion	Must be greater than 25% diversion Maximum amount of diversion 75% eligible for rebate
Sewer meter requirements	Not required, Consultant analysis by third party service provider to estimate the % diverted
Treatment of irrigation	Water used for grounds maintenance/lawn watering will not be considered eligible for inclusion in such calculations.
Calculation	Based on the flow differential between metered consumption and the volume of effluent discharged into the wastewater system as determined in a manner satisfactory to the Commissioner
# of customers	40 applications
Impact on revenues	\$625,000
Application Fee	\$1,058.87 initial application and then an update every 5 years

**City of Hamilton**

By-law/Procedure	By-law 03-272 Section 26
Qualification – classes	Commercial and Industrial customers
Application process requirements	Application 5 year term
Monitoring	Consumer shall permit the City to conduct an inspection at any reasonable time. Consumer must submit annually verification of flow differential
Program Inception	2003
Caps on rebates	75% maximum diversion and adjusted for I&I of 133%
Minimum/Maximum monthly diversion	Must be greater than 25% diversion Maximum amount of diversion 75% eligible for rebate
Sewer meter requirements	It is not mandatory for participating program customers to install an effluent meter. In some cases, customer needs to engage a consultant (Wastewater has a roster list of acceptable firms) to conduct a “water balance study” whereby an engineering documents the water flows in and out of the customer’s premise.
Treatment of irrigation	Not permitted
Calculation	The abatement factor for each approved customer is applied to their monthly billing. In determining whether a Consumer appears to qualify for an Abatement under section 10 of this By-law, the Abatement shall be calculated in accordance with the following formula, based on data from the calendar year prior to the year of application for the Abatement: A = annual volume (m3) of water supplied to the property from the potable water supply B = annual volume of water that was sourced from the potable water supply and diverted from the City’s sanitary sewage works (if B is less than 25% of A, the Consumer is not eligible for the Abatement; if B is greater than 75% of A, insert a value equal to 75% of A) C = annual wastewater discharged to the City’s sanitary sewer and combined sewer system (C = A – B) or C=actual measured value using sewer flow monitoring if required by the Director D = infiltration and inflow add back (D = C x 133%: add back adjustment of 33% to the volumetric charge so that all ratepayers continue to pay an equal portion of the treatment costs associated with inflow and infiltration) E% = wastewater Abatement in percentage

	<p>Step 1: <math>A - B = C</math>; or <math>C = \text{actual measured value using sewer flow monitoring if required by the Director}</math>                  Step 2: <math>D = C \times 133\%</math>                  Step 3: <math>E\% = (A - D) \times 100/A</math></p> <p>If an Abatement is authorized for a Consumer in accordance with this Bylaw, the Abatement will be applied quarterly each year in accordance with the following formula:  <math>F = \text{actual volume (m3) of potable water supplied to the property by the City during the previous quarter}</math>  <math>G = \text{volume (m3) of water eligible for the Abatement during the previous quarter}</math>  <math>H = \text{wastewater/storm treatment charge (see Schedule "A" to this Bylaw)}</math>  <math>\\$I = \text{dollar amount of Abatement for the billing period}</math>                  Step 4: <math>F \times E\% = G</math>                  Step 5: <math>G \times H = \\$I</math></p>
Number of customers	9
Impact on revenues	\$790,000 (2016)
Application Fees	\$578.80 administrative fee annually if the abatement is greater than \$500 Application Processing Fee \$374.50 and full cost recovery for peer review

*City of Kingston*

By-law/Procedure	By-law 2015-27, section 2
Qualification – classes	Commercial/Industrial properties Program is currently under review
Application process requirements	Application but must meet the following criteria <ul style="list-style-type: none"> <li>• the wastewater exempt water is metered separately (at the customer’s expense);</li> <li>• there are no physical connections, beyond the metering point, between exempt and non-exempt systems;</li> <li>• the exempt water system is verified by Utilities Kingston staff; and</li> <li>• the wastewater exemption does not result in increased concentrations of waste.</li> </ul>
Monitoring	Utilities Engineering staff
Program Inception	Not known
Caps on rebates	None stated
Minimum/Maximum monthly diversion	Not stated but a business case must be prepared
Sewer meter requirements	Required at the owners expense
Treatment of irrigation	Not eligible
Calculation	Meter differentials
# of customers	Not available
Impact on revenues	Not available
Application Fee	None

*City of Kitchener*

By-law/Procedure	Policy 1-785
Qualification – classes	Program is currently under review
Application process requirements	Customers may also need to submit process schematics and/or other process operation and production information to City to qualify. Annual sewer surcharge rebate is available if the following cases: <ul style="list-style-type: none"> <li>o Industrial process water</li> <li>o Evaporation losses – cooling, humidification</li> <li>o Ice making (arenas and outdoor rinks)</li> <li>o Snow making and further</li> </ul>
Monitoring	
Program Inception	1993
Caps on rebates	No cap
Minimum/Maximum monthly diversion	Exemption not provided in cases where the value exceeds \$100 in any given year
Sewer meter requirements	Customer must install internal meters for sewage flows at own expense with meter readings required to be submitted to City
Treatment of irrigation	Rebates are not available for public and private swimming pools and lawn watering
Calculation	Exemption defined and granted based on calculation by City, informed through supported information stated above.
# of customers	45
Impact on revenues	\$500,000-\$550,000
Application Fee	No application fee

*Peel Region*

By-law/Procedure	By-law 53-201, Part 20
Qualification – classes	Industrial. Residential appeals are not allowed. Wastewater charges for residential customers are based on 85% of water consumption.
Application process requirements	Written notice of appeal is launched by the Industrial customer and submit a certified notice from a professional engineer of the differential which must be at least 20% or greater that is being diverted from the sanitary sewer system
Monitoring	Annually must submit a full year of forms and materials to provide evidence of prior year inflow/outflow differential
Program Inception	2010 or prior
Caps on rebates	None
Minimum/Maximum monthly diversion	20% minimum differential between inflow and outflow
Sewer meter requirements	Required at the expense of the customer or an Approved Alternate Method of calculation
Treatment of irrigation	Not specified
Calculation	Inflow/Outflow Differential
# of Customers	Not available
Impact on revenues	Not available
Application Fee	

*City of Waterloo*

By-law/Procedure	Internal Process
Qualification – classes	Commercial and Industrial
Application process requirements	Internal process. Specific information required that will allow staff to determine level of diverted water
Monitoring	
Program Inception	
Caps on rebates	
Minimum/Maximum monthly diversion	None specified
Sewer meter requirements	Not required
Treatment of irrigation	Not eligible
Calculation	
# of customers	Not available
Impact on revenues	Not available
Application Fee	None