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# Water Pricing in Ontario: Is the Price Right for Water?

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# Is the Price Right for Water?

**MPA Research Report**

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Executive Summary

The management of municipal water services in Ontario has undergone major regulatory changes since the Walkerton water contamination tragedy in May 2000. Seven people died and many others are still living with the impact of the water crisis. The price of water services has been historically inexpensive in Ontario and there are no regulatory pricing rules for municipalities. This research paper will examine if municipalities in a sample group of the large and medium urban areas have changed their water rate structure in order to raise additional revenue since Walkerton.

The provision of water services to customers is capital intensive and the performance is required every minute of everyday to ensure that healthy and sustainable communities thrive. Municipalities have had to adapt to a zero tolerance regulatory regime which has resulted in changes required in the planning, design, operation and investment of water infrastructure.

The pricing of water has evolved in many different ways in the sample municipalities through historical practices in order to price water for the immediate requirements.

As municipalities adapt to the needs of the post Walkerton water management industry in Ontario, there is a struggle in pricing water between achieving the i) environmental, ii) financial, iii) economic and iv) social water policy objectives and the opinion of industry professionals and political decision makers who are influenced by residential and non residential water customers.

In order to price water properly, municipalities will need to properly plan for the life cycle cost of water infrastructure. Industry professionals need to continue to plan and educate the public and the decision makers regarding the risks of not planning and investing for the long term needs in water services for future generations.

Full cost pricing for water has not been achieved to date based on the research of this paper however municipalities have made the necessary regulatory investments. The

province has attempted to legislate an economic regulator for water pricing however until the necessary consultation, policy framework and technical directives are completed, the “right price” for water will continue to evolve.

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## 1. Background

The 2012 World Economic Forum Survey of experts and industry leaders have identified "water supply crisis" within the top 5 global risks in terms of likelihood and impact for the first time in the past five years.[1] Based on the current global water risks emerging in various areas on earth, the province of Ontario, Canada is seen as an area which has an abundance of freshwater. Ontario is home to 17.8% of Canada's freshwater area including the Great Lakes Basin which provides water for a population of approximately 10 million.[2]

In Ontario, water services are provided for the most part by municipal governments either at the local level and or at the upper tier level. Over 80% of Ontarians are served by municipally owned water systems. There are currently 688 municipal residential water supply systems.[3] Ontario's municipal water supply industry is highly regulated by the province since the tragic events of Walkerton where seven people died and hundreds remain impacted from contamination within the municipal water supply system. Based on the Part 2 Report of the Walkerton Inquiry, the Honourable Justice O' Connor documented 93 recommendations related to the management of water supply systems in Ontario. With respect to municipal water providers, recommendation 48 states that "As a general principle, municipalities should raise adequate resources for their water systems from local revenue sources, barring exceptional circumstances."[4] It is important to note that for the purposes of this paper, water services provided by municipalities include both potable water supply and wastewater collection and treatment systems. Since the Walkerton tragedy, provincial legislation which has impacted municipal water supply systems includes, i) Safe Drinking Water Act, ii) Nutrient Management Act, iii)

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[1] Harvard Business Review, What Keeps Global Leaders Up at Night, April 2012, Volume 90, No. 4, p. 33
[2] Natural Resources Canada, website, www.nrcan.gc.ca, April 2012
[3] Ontario Ministry of the Environment, website, www.ene.gov.on.ca, April 2012
[4] Justice Dennis O'Conner, Report of the Walkerton Inquiry-Part 2, 2002, p.25

Clean Water Act, iv) Ontario Water Resources Act and the associated regulations. Other Acts related to municipal water supply systems which have been introduced into the legislation however, the detailed regulations have not been established to date include, i) Sustainable Water and Sewage Systems Act, and ii) Water Opportunities and Conservation Act. In addition, specific pieces of provincial legislation have been approved to improve the water environment related to regional watershed areas for example, the Lake Simcoe Protection Act which impacts wastewater services. In addition, federal level legislation related to Pollution Prevention Plans (P2) for wastewater plants has impacted disinfection requirements.

The provincial legislation quoted relates to supply issues and not cost recovery. Although the province regulates the water industry, there is currently no legislation governing user rates. Under the Safe Drinking Water Act, municipalities need to complete a financial plan to obtain a license for the MOE Drinking Water Quality Management System. The information from the financial plan can be used indirectly to guide user rates. Water user rates are approved by municipal councils, which determine both the format (water rate structure) and the quantum (cost recovery). Municipalities generally pay for water services through the establishment of specific user rates for those residents who utilize the water supply and wastewater systems. The methodology used to collect water user revenues is based on a user rate structure which can be structured in many different ways.

The main question for the proposed research paper is: Have municipalities in Ontario changed their water rate structure in order to meet the requirements of water legislation since the Walkerton tragedy in 2000? An additional question includes, what are the other factors which may influence a decision on how a water user rate structure is developed? The direction of provincial legislation and industry best practices is to move towards a “full cost” water pricing concept in order to properly plan, finance, build, operate and

maintain safe and dependable water systems. Another question is to determine if municipalities have adopted a “full cost” water pricing model. The definition of “full cost” water pricing will be explored through various industry practices. Although regulatory operational requirements play a major role in determining the amount of revenue required for a particular water system, water user rates and structures can be influenced by other local factors. Water conservation, economic development, social and environmental conditions and size and type of system are other factors that can influence the design of water user rate structures. Water rates are also influenced through local political direction as water rates are approved by local governments at municipal councils or utility commissions.

Water user rate structure information can be researched through publically available documents such as municipal budgets, studies and reports. The research will focus on water systems from municipalities which are members of the Regional Public Works Commissioners of Ontario and the Ontario Municipal Benchmarking Initiative Expert Panel on Water & Wastewater services. Interviews and questionnaires with industry practitioners have been used to provide other insights on water rate structures in Ontario. The analysis will require qualitative and quantitative description of how water rate structures vary and suggestions of potentially important relationships between structure and rates.

The structure of water user rates is important for local governments which deliver water services in order to properly plan sustainable and healthy communities. Regulatory requirements since Walkerton have required municipalities to make large investments into their water systems. Residents along with other commercial and industrial customers continue to pressure local governments to set water user rates as low as possible for various economic and personal reasons. Local politicians are torn between these two policy setting influences of upward pressure for adequate financing versus the

downward pressure by the public. During this current time of fiscal austerity, local governments need to properly plan for the financial management requirements and educate the water users on how and why water user rates are established. It is important to note that the delivery of water supply is the only utility in which public health requirements are paramount as experienced during the Walkerton tragedy.

## 2. Literature Review

The importance and value of water services to local governments in Ontario has been heightened since the Walkerton. There is a wide range of academic literature pertaining to user rates and pricing policy for water and wastewater infrastructure. The literature includes books, journal articles, industry association manuals, consultant reports, federal, provincial and local government reports. The major theme based on the literature review is that the price of water in Canada and in particular Ontario has been under valued. Academics and industry experts are advocating for full cost pricing for water services.

In Canada there has been plenty of research related to municipal water pricing. Steve Renzetti has noted that municipal water prices charged to residential and commercial users are only 37% of the estimated marginal cost of water. The average water price for residential customers in Canada is $0.32 per cubic meter ($m^3$) while the estimated marginal cost is $0.87 per $m^3$. For wastewater services, the estimated average price charged is only 66% of the estimated marginal cost of collection and treatment.[5]

One of Renzetti's policy paper's includes, "Wave of the Future: The Case for Smarter Water Policy" for the C.D. Howe Institute. Renzetti notes that municipal water providers have used pricing as a way to generate revenue and have ignored the role that pricing

[5] Steven Renzetti, Municipal Water Supply and Sewage Treatment: Costs, Prices and Distortions, Department of Economics, Brock University, p. 18

can play in addressing water scarcity, demonstrating the costs of providing water and encouraging the efficient use of water. Economic theory and empirical evidence show that in order to move towards the marginal cost of water, there are three policy directions which include i) use of meters, ii) moving towards a full cost accounting approach and iii) implementing seasonal surcharges.[6] If water is not priced properly then Renzetti notes the following consequences: i) excessive consumption, ii) over-extended infrastructure and iii) diminished water quality.

This policy paper provides a sound understanding of the potential challenges and risks associated with the way municipalities in Canada currently set water pricing. Although on the surface setting water user rates may appear to be simple, the complexity, regulatory and long term liability requirements have been researched. The day to day impact to customers can be far more reaching to the community at large than just paying higher user fees. Water is a basic necessity of life and there is no substitute for it therefore, the political reality of impacting low and fixed income earners and major community employers is a major hurdle in supporting the implementation of full cost pricing. Renzetti advocates the marginal cost pricing concept. This pricing concept can be defined as the price which reflects the cost of supplying one more unit of water. Marginal cost can be also defined as the cost of the additional unit based on when and where the extra unit of water is required. Although in theory the pricing calculations may be performed, the marginal pricing concept by Renzetti is not practical from a municipality's perspective. For example, water systems which draw water from Lake Ontario, and service their urban areas with multiple water pressure districts and kilometres from the water source would need to set multiple water user rates within one municipality due to the different costs of providing water service based on the pumping costs and the distance away from

[6]Steven Renzetti, Wave of the Future: A Case for Smarter Water Policy, C.D. Howe Institute, No. 281, February 2009, p. 16

the water source. In areas where regional governments own and operate different sizes and types of water systems, pricing water based on individual system characteristics would negate the economies of scale related with having one water price for the regional water service area. Smaller water systems within a region which may individually cost more to operate would not benefit from an area specific user rate charge. Although area specific water user fees are in place in a few cities such as Halifax and Cleveland, the political approval of such a scheme would be challenging considering that other utilities in the same service area would have a uniform rate. The areas which can be supported from Renzetti's paper include the use of water meters and applying seasonal surcharges. Water meters properly account for the volume of water consumed which can be one indication of the amount of benefit a customer has obtained. Seasonal surcharges can be applied to residential users due to the fact that peak demands are generated by this sector and that additional resources are required to build and operate the systems in order to meet the demand.

User fees for municipal services such as water supply services is discussed in an article by Donald Dewees, in the Canadian Tax Journal, entitled "Pricing Municipal Services: The Economics of User Fees." The article is written from the perspective of the economics discipline in terms of the design of user fees. An in depth analysis is found in the article of the theories applied in setting municipal user fees and then illustrating these principles with respect to water supply. Dewees notes that setting the prices of municipal services at marginal costs can lead to efficient production and consumption of the service and efficient allocation of the service when capacity limits are reached.[7] Water supply is a service he advocates that the price charged to users should be set at the marginal cost. The article states that marginal costs should never be lower than the

[7] Donald N. Dewees, Pricing Municipal Services: The Economics of User Fees, The Canadian Tax Journal 50.2, 2002, p. 1

operating costs and may need to be much higher in certain circumstances. The calculation of the marginal costs for water supply should include opportunity costs and environmental costs.

The utilization of water meters is the basic fundamental foundation of setting proper water user rates. The article notes that there is no technological or economic reason why all customers of a municipal water supply system cannot be metered. As noted previously, in theory marginal cost pricing can be implemented however, in practice, water utilities rarely use marginal cost pricing. There are currently some municipalities in Ontario which continue to operate water supply systems with no meters (i.e. Municipality of Goderich). The article notes four items which leads to the mispricing of water user rates in Canada which include: i) operating on a break even target for budgets, ii) seasonal pricing is not employed, iii) substantial price increases are required to reduce demand and iv) major increases in water user rates are resisted by customers.

Ontario is described in the article as having a great “endowment of water”. Based in 2002, Dewees does not see Ontario going to a seasonal or time of use system for water pricing. He does recommend that Ontario user rates should cover the full cost of the water system and opportunity costs. He concludes that user fees set in consideration of economic principles can constrain demand, allocate scarce services and signal when new investment is warranted.

The water industry guidance document related to water user rates is the American Water Works Association (AWWA), Water Rates, Manual M1. The M1 Manual provides the most detailed source for water professionals in order to set user rates. The manual has been published since 1954 and from an historical and technical perspective has been the most widely used in Ontario and Canada. The AWWA‘s approach to public utility user rate pricing is different from that advocated by the economic analysts presented above. The methodology recommends that the water supplier determines the revenue

requirements based on the operating, maintenance and capital costs for the water system in order to plan for a break even financial position. The manual does distinguish between public and privately owned water utilities. Privately owned utilities include depreciation and a rate of return on the capital investments made for the water infrastructure while publicly owned utilities exclude them. The M1 Manual notes this distinction based on the legislation for privately owned utilities in the United States. Water systems owned by municipalities in Ontario have historically used different legislation and guidelines in order to operate based on a break even financial position. The total estimated costs are allocated across the water services provided by the water utility and the water customer classes (i.e. residential, commercial and industrial). The user rate design typically has a fixed charge to recover costs common to all users, such as billing, meter reading, service connection and fire protection. In addition, a variable charge is part of the user rate based on the volume of water consumed. The volume rate charged for water and wastewater recovers all operating, maintenance and capital costs related to rehabilitation and replacement.

The Conference Board of Canada report, "Improving Infrastructure Management Municipal Investments in Water and Wastewater Infrastructure" provides a national perspective on investment in municipal water infrastructure. It reviews the broad revenue sources and financing methods available to municipal water providers. The report notes, "Although full cost recovery is notionally simple, it is complex in practice. One fundamental, yet challenging, question is, "Which costs are to be recovered?" [8] Aside from the costs mentioned previously from other readings for cost recovery, the report recommends including externality costs related to the environmental impacts onto water user rates. It is clearly noted that externality costs present an entirely different problem

[8] Len Coad, Improving Infrastructure Management: Municipal Investments in Water and Wastewater Infrastructure, The Conference Board of Canada, November 2009, p. 12

for both identification and for quantification. Regulatory requirements in Ontario for the construction and operation of water and wastewater infrastructure do take into account impacts to the environment. The provincial Drinking Water Quality Management System requires municipalities to obtain a license which for example limits the amount of water taking available and use of water to a level that does not harm ecosystems or impacts other water users. Wastewater plants which are being rehabilitated or expanded must meet new treatment standards in order to maintain or reduce nutrient loadings from treated effluent to receiving water bodies. Based on site specific settings, municipalities may assert that environmental and pollution costs have been included in their water and sewer user rates as their infrastructure costs need to meet the capital and operating investments required for provincial water management regulations. Water source protection costs related to Ontario's Clean Water Act are currently being developed as Source Protection Plans are being finalized across the province for 2012.

The report's summary finds that with respect to pricing, there is a gap between what is currently considered to be full cost recovery and what is required to ensure long term sustainability. In terms of setting the right price for water services, the barriers do not appear to be conceptual or analytical, but are likely social, political or cultural. An interesting documentation from the report notes that, "we found no evidence that cost-based rates when they have been implemented create financial hardship for water users. The challenge is to move toward full cost recovery while keeping water affordable for low-income consumers."[9]

As a continuation of the Walkerton Inquiry, the province commissioned a report from a Water Expert Panel named, "Watertight: The Case for Change in Ontario's Water and Wastewater Sector". The objective of the expert panel was to provide a strategic focus on Ontario's municipal water and wastewater industry. The panel traveled extensively

[9] Ibid, p. 23

soliciting the views of many stakeholders across the province with a focus on the long term issues including: i) organization, ii) investment and iii) revenue. The findings of the report reflect the main summary points from the literature above with respect to water funding and pricing related to the infrastructure investment gap in Ontario. One of the expert panel's recommendations calls for the establishment of an economic regulator for water user rates known as the Ontario Water Board. The report called for water business plans from municipal councils to be submitted by June 2007 with decisions from the Ontario Water Board by June 2008. The panel had recommended an ambitious time line for implementation which would require full cost pricing for all municipalities by the end of 2012. Obviously the proposed timeline for full cost pricing was not implemented.

## 3. Water Pricing

The water industry sector has generally documented that the price of water is low in relation based the amount of financial investment required to build, operate and maintain water and wastewater systems. Water systems invest significant financial capital in fixed assets relative to their annual operating revenues (a ratio of about 5 to 1).[10] The CWWA Manual notes water and wastewater capital investment per dollar of operating revenue varying between 4 to 9 as opposed to ratios of 3 to 1 for telephone utilities and 1 to 1 for airlines.[11] The fixed assets related to water infrastructure include treatment plants, distribution and collection systems, pumping stations and storage facilities. These facilities have long service lives and are intended to service multiple generations of customers.

[10] Janice Beecher, Primer On Water Pricing, Michigan State University, Institute of Public Utilities, November 2011, p. 3

[11] Mike Fortin, Peter Lawson, and Mike Loudon, CWWA Municipal Water and Wastewater Rate Manual, 1995, p. 17

In 1999 based on a survey by the Organization for Economic Cooperation & Development, OECD, Canada had one of the lowest prices of water in the world and based on Environment Canada's Municipal Water User and Pricing Survey noted that Ontario's water and wastewater prices is amongst the lowest in Canada which reflected conditions prior to Walkerton.

The model concept which has been advocated since Walkerton has been full cost pricing. A basic definition of full cost pricing includes all operating and capital costs associated with the provision of the service. The meaning of full cost pricing can be described differently based on which perspective one uses. A financial expert may want to include costs associated with depreciation. An engineer will want costs related to replacing old infrastructure. The environmentalist may want to include a value for the resource and pollution impacts related with operating water systems.

Full cost pricing (also referred to as full cost recovery) has been identified by the Canadian Water and Wastewater Association (CWWA) as a primary objective for water and sewage operations. The CWWA has identified the following key elements of a full-cost recovery policy:[12]

1) Funds of the operating authority are to be kept separate from general municipal funds; any surplus remains with the authority, and deficits are recovered from the authority's own revenue sources.
2) A break-even operation prevails; a surplus or deficit in one year is offset in subsequent years.
3) Full costs for water and sewage include an allocated portion of municipal costs for general services such as administration, finance and engineering.
4) All capital costs, including the initial investment outlay, the cost of financing that investment, and the costs of ongoing repairs and replacements.

[12] Ibid, p. 51

The CWWA description of full cost pricing as noted above does not include the indirect impacts of water and wastewater operations which can include i) environmental impact of water being taken from surface and groundwater sources, ii) environmental impact of treated wastewater to water bodies, iii) environmental impact of the management of wastewater solids (i.e. land application or incineration, landfill) and iv) the value of the water as a resource. The calculation related to the indirect impacts noted above is difficult and challenging for municipalities to undertake due to the number of unknowns and assumptions to determine a monetary quantum.

## 4. Water User Rate Structures

User fees have historically been used to charge customers receiving water and wastewater services by municipalities. The individual water quantity used by each customer allows user fees to be designed so that an efficient allocation of resources required to delivery the service can be made rather than using property taxes. Correctly designed user fees do not only improve the allocation of municipal resources; they are also fair on the basis of benefits received, since those who benefit from the service pay for it.[13] A review of the historical method used by municipalities for residential water rates in Table 6.2, Kitchen, p 131 from Environment Canada notes a number of ways municipalities have charged for water. Based on the 1996 data, approximately 50% of municipalities in the survey charged a flat rate for water, meaning that customers could use as much water as possible for a defined amount of dollars. The most recent data from Environment Canada data shows an increase of approximately 10% for residential water metering in Canada.[14]

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[13] Harry Kitchen, Municipal Revenue and Expenditure Issues in Canada, Canadian Tax Foundation, No. 107, p. 123

[14] Environment Canada, 2011 Municipal Water Use Report, December 2011, p. 7

Water and Sewer services can include two parts of the user fee, which includes a 1) a fixed charge and 2) a variable charge. A fixed charge can be designed that one fixed fee is charged to each customer regardless of the amount of water and sewer service being used. The cost of billing, collecting and metering are typical fixed charges related to municipal water user fees. The variable charge is based on the volume of water used by a customer. The volume used by different customers can be subdivided into sections referred to as 'blocks'. Block rates are determined to reflect the different customer type, such as residential versus heavy industrial and the different volumes used.

The following provides a summary of the different water user rate designs based on consumption:

i) Single Block Rate: the single block rate structure applies a constant volume charge for all water used during the billing period. All customers would pay the same amount for each unit of water used.

ii) Declining Block Structure: the declining rate structure applies a decreasing volume rate as the volume of water increases. The price per $m^3$ of water decreases as more water is used. The number of blocks within a declining block structure can range from three to five.

iii) Increasing Block Structure: the increasing rate structure applies an increasing volume rate as the volume of water increases. The price per $m^3$ of water increases as more water is used. Three to five blocks can be used within an increasing block structure.

iv) Humpback Block Structure: the humpback rate structure applies a higher volume rate to a determined water quantity to reflect peak usage rate. A peak rate charge is applied for the consumption block that captures most of the seasonal demand of residential customers.

v) 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.

vi) Excess-Use Rate Structure: an excess-use structure applies a high volume charge during the peak water demand season in excess of a certain consumption level. A peaking factor of 1.2 to 1.3 is applied to the off-season volume in order to calculate the seasonal or excess-use rate. This rate structure is similar to the seasonal rate design in terms of providing a large enough differential for customers to notice a difference and conserve water.

5. Sewer User Rates

User charges for wastewater services are typically designed by applying a surcharge on the metered water consumption. The actual amount of wastewater is not metered for the typical residential and commercial customers due to technical and operational constraints related to recording small flows. Based on the user pay concept, municipalities have moved from charging a flat fee for wastewater services from the property tax bills to charging a sewer use fee based on the amount of water consumed. Although not all water which is metered gets discharged to the sanitary sewer system (i.e. lawn watering), 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. Inflow and infiltration are not easily

measured but sewer surcharges on water use are required in order to pay for capital and operating costs related to the impacts of this flow.

## 6. Methodology

This research paper will determine whether major municipalities have changed their water rate structure in order to raise additional resources for their capital and operating requirements. The other factors which may influence a decision on how a water use rate structure is determined will be investigated. In addition, the water rate policy setting environment for municipalities and has there been a change since Walkerton?

Have municipalities adopted a “full cost” pricing model for water user rates since 2000?

What do municipalities require to facilitate “full cost” pricing? What are the potential regulatory changes required for example, an Ontario Water Board or are detailed regulations?

The sample group of municipalities in Ontario include medium and large urban areas. The sample group of municipalities represents members of the Regional Public Works Commissioners of Ontario. The seventeen member municipalities are listed below and represent approximately over 80% of Ontario’s population. Based on the geographic location and regional jurisdiction of the water systems, the municipalities own and operate a number of water system clusters ranging from large lake based systems servicing over a million people to small groundwater and wastewater lagoon systems servicing a population under 100.

Table 1: Municipalities within the Regional Public Works Commissioners of Ontario (Canada) Organization

| **Regional Public Works Commissioners of Ontario (Canada) Municipalities** |
|---|
| 1) Regional Municipality of Durham |
| 2) Regional Municipality of Halton |
| 3) Regional Municipality of Peel |
| 4) Regional Municipality of York |
| 5) Regional Municipality of Waterloo |
| 6) Regional Municipality of Niagara |
| 7) Regional District of Muskoka |
| 8) City of Kingston |
| 9) City of London |
| 10) City of Ottawa |
| 11) City of Toronto |
| 12) City of North Bay |
| 13) City of Sudbury |
| 14) City of Thunder Bay |
| 15) County of Halimond |
| 16) County of Norfolk |
| 17) City of Windsor |

The information from the sample group of municipalities noted above has been obtained through a questionnaire (Appendix A), interviews and municipal websites. The questionnaire was divided into three main areas for research information which includes: i) water rate structures, ii) water policy and iii) full cost pricing. Municipalities were asked

a series of general questions related to water pricing in their municipality since the Walkerton tragedy in 2000. The water rate section of the questionnaire asked questions related to water rate structure design and if the municipality had changed and/or reviewed the water rate in the past 12 years. In addition, respondents were asked about the regulatory impacts since Walkerton.

Water policy information researched includes whether a separate water and wastewater annual user rate report is prepared on an annual basis. In addition, the support of staff recommendations related to user rate increases was investigated.

The financial information related to municipal water and wastewater operations can be obtained from the Financial Information Return (FIR) in which each municipality submits to the Ministry of Municipal Affairs and Housing on an annual basis. The database for the FIRs can be obtained from the Municipal Information Data Analysis System (MIDAS) information system on the Association of Municipalities of Ontario website through a password provided by the administrator. The information from 2000 to 2010 for the group of municipalities for this research paper is available from MIDAS. One of the main challenges with the water and wastewater information submitted in the FIRs is that the format and schedules for the FIR has changed since 2000 therefore the information in certain cells for user revenue may not reflect the actual year end numbers. In addition, the FIR data does not reflect the actual annual budget information related the water and wastewater services. In Schedule 75, the information as submitted for water services summarizes expenses and revenues for a municipality. Upon closer review a large surplus may be shown in the schedule for these services. Based on further investigation, the schedule does not take into account how municipalities may have financed their budgets through other revenue such as development charges, dedicated reserves and debt financing, therefore the schedule does not show all the expenses and financing for water and sewer budgets. In addition, water services infrastructure built by developers is

shown as revenue when in reality the municipality is not receiving funds. The surplus shown is not reflective of actual numbers as municipalities must approve a balanced budget. The information used from MIDAS for this paper will include user rate revenue, grant funding and amortization.

## 7. Findings

The findings of this paper will be presented based on the information provided and obtained from the sample set of municipalities. Based on the responses to the questionnaire and information obtained on the water and wastewater systems, the paper will highlight the general commonalities and differences including individual examples of related issues. In addition, there will be reference made to literature from industry activity related to the issues presented.

### 7.1 Challenges with Water and Sewer User Rates

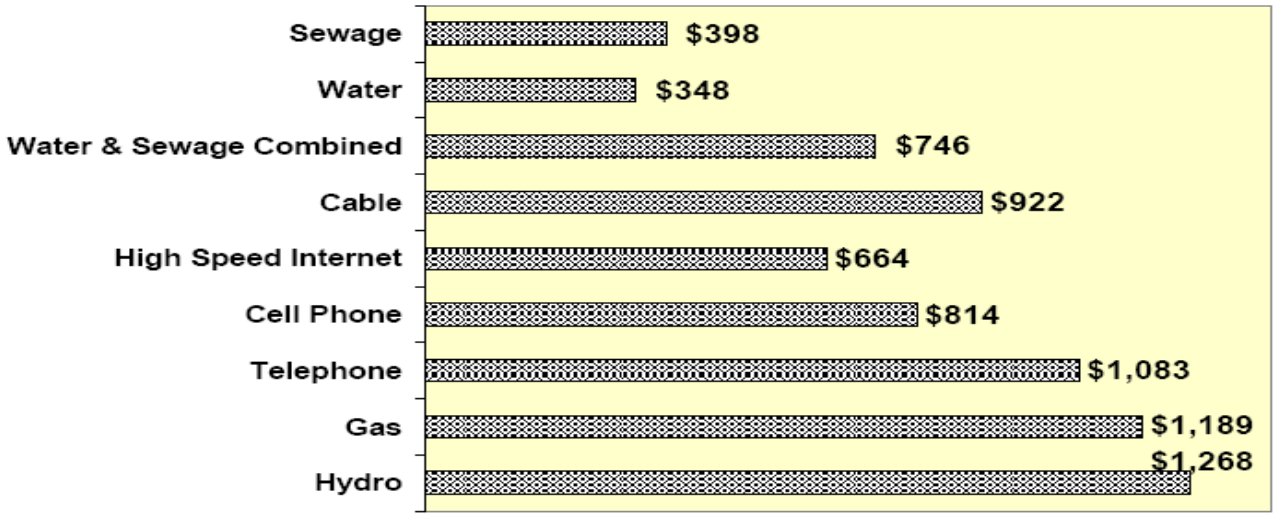
The municipalities in the sample group charge customers for water services based on user rates. The user rates are generally based on the metered water consumed and then a sewer charge is applied based on the volume of water used. The sample municipalities identified the following issues related to water and sewer user rates since the Walkerton tragedy:

1) regulatory compliance related to operations, capital upgrades, training and inspections
2) declining water consumption related to economic conditions in Ontario resulting in large end users being shut down or reducing water consumptions substantially
3) challenge between the rising cost of water services and the rates charged for the service

4) challenge of obtaining continual approval of water and sewer user rate increases on an annual basis
5) concern related to the age of critical water infrastructure which requires replacement
6) concern related to the risk of water infrastructure failure and performance

The sample municipalities identified that increasing water and sewer user rates is challenging as customers view water services as part of government services which should be inexpensive. The historical practice by the sample municipalities is to set the water and sewer rates in order to recover the short term costs related to operating the systems. The municipalities believe the rates charged for water services to their customers are inexpensive. One example from the Region of Durham shows that water and sewer annual charges are cheaper than other utilities currently paid by residents as shown below[15]:

Figure A: 2011 Typical Annual Durham Residential Utility Charges ($/year)




As noted earlier, these essential services have been very economically affordable to customers in Ontario. According to Environment Canada, the median expenditure per

[15] Regional Municipality of Durham, Recommended 2012 Water and Sanitary Sewer User Rates, Joint Finance & Administration and Works Committee Report No. 2011-J-56, December 1,2011, p. 31

household for water services in 2004 was $37.93 per month for 25 $m^3$ and $50.46 per month for 35 $m^3$. When this is compared to the 2005 median expenditure per household per month for basic utility costs of water, fuel and electricity for principal accommodation, which was $192.30 which represents 3.2% of total household expenditures. The data shows that water bills account for about 20-26% of the low basic utility costs.[16] The average 2012 water services charge for the municipalities sampled is $80.75 per month for 25 $m^3$. Although the relative price of water services is still inexpensive, municipalities have found it challenging to raise rates to plan large capital intensive projects since Walkerton.

The water infrastructure system which has been developed to service the population growth of the past century in the sample municipalities is aging and requires capital investment to meet new regulatory requirements, rehabilitation and replacement needs. The financial investment required by a municipality to maintain, rehabilitate and ultimately replace system is referred to as the infrastructure deficit. All the municipalities identified that since Walkerton, funding for investment in order to better plan and reduce the infrastructure deficit is required and is a major issue. As labelled by several water professionals and politicians, water services are generally “out of site and out of mind”, however customers have an expectation that the water services will be operating for 24 hours a day and 365 days of the year.[17] Municipalities identified a concern related to the risk of failure resulting from large watermain breaks in downtown areas which have occurred in Toronto, Hamilton and Ottawa. In addition, the performance of infrastructure is a concern related to surcharged sewers with high flows from rainstorms which cause basement flooding impacts in older portions of the service areas. Most of the

[16] Oliver M. Brandes, Steven Renzetti and Kirk Stinchcombe, Worth Every Penny: A Primer on Conservation- Oriented Water Pricing, University of Victoria, May 2010, p. 9

[17] This quote is taken from discussions with senior municipal management and politicians. To ensure anonymity and confidentiality, the quote is provided without attribution.

municipalities had experienced basement flooding impacts since Walkerton due to intense rainfall events. Large investments are required in order to reduce the risk of basement flooding in existing neighbourhoods. In Toronto four priority service areas out of the 31 service areas impacted by basement flooding will require approximately $192.6 million of capital upgrades. A spending limit of approximately $25,000 per household was identified to reduce the risk of basement flooding in service areas because there is not enough funding to resolve all the basement impacts experienced in Toronto in the past 10 years.[18]

In March of 2011, Ontario Premier Dalton McGuinty established the Commission on the Reform of Ontario's Public Services, chaired by Don Drummond. The report released in February 2012 notes that for municipal water and wastewater services, average capital investment "chronically lags what is actually needed by $1.5 billion per year." The commission recommends full-cost pricing for water and wastewater services. It is noted that the equivalent of about half the $72 billion in assets owned by municipalities will need to be renewed from 2005 through 2019.[19] The Drummond report continues to reiterate the message that municipalities will need to raise the necessary resources to properly plan and manage their water and wastewater systems in Ontario.

The sample municipalities identified that they have and will continue to lobby for assistance for higher levels of government to provide grant funding for infrastructure projects which include water and wastewater systems.

The provincial and federal government's financial involvement in water and wastewater systems is documented through a number of grant programs since Walkerton. The following provides as sample of grant programs since Walkerton: Provincial Water

[18] City of Toronto, Report to Executive Committee, Update on the Engineering Review Addressing Basement Flooding, August 18, 2008, p. 2

[19] Commission on the Reform of Ontario's Public Services, Public Services for Ontarians: A Path to Sustainability and Excellence, Government of Ontario, February 2012, p. 322

Protection Fund, Ontario Small Town Development Infrastructure Program, Green Municipal Fund, Municipal Investment Fund, Municipal Infrastructure Investment Initiative, Federal Gas Tax, Infrastructure Stimulus Funding, Building Canada Fund, and P3 Canada Fund. Based on the current austerity program at both the federal and provincial levels of government, municipalities believe that the grant programs of the past are likely not to be sustained through long term planning. The federal gas tax program is one revenue source which is now legislated and municipalities may choose to use it for water infrastructure projects.

Several of the current federal programs will expire by 2014. The concern about large deficits facing the federal and provincial governments has not led to the renewal of the current programs with the same magnitude of financial resources. Although the sample municipalities continue to lobby and advocate for funding to help with major investment required for water systems, grants may not be the answer to meet the future challenges as noted within the following documentation.

The Environmental Commissioner of Ontario called grants for wastewater systems unsustainable, explaining, "It is very difficult for municipalities to responsibly plan, finance, manage and conserve their wastewater assets, given the temptation of rare, unpredictable, but often large grants."[20]

The Ontario Expert Panel on Water and Wastewater Strategy identified the "sad reality" that "overly generous grants actually caused many problems in Ontario's water sector today." More than $25 billion had been spent prematurely or "to meet no real need whatsoever." The panel concluded that this indicated "a serious misallocation of public

[20] Environmental Commissioner of Ontario. Redefining Conservation: Annual Report 2009-2010, September 2010, Toronto, p. 85

money."[21] From a water industry perspective, the Ontario Municipal Water Association during the Walkerton hearings presented the need for accurate and comprehensive accounting systems for water supply systems and full cost accounting.[22] The water association representing municipalities noted their opinion on grants claimed in the past, "…government grants to public water authorities for the development or improvement of municipal water supplies have been inconsistent, and in some cases have been counterproductive by rewarding public water authorities regardless of their performance in long –term planning, the maintenance of their facilities, or their rate charges or accounting practices…"[23] A municipality which deferred maintenance and avoided user rate increases should not be rewarded with grants from higher levels of government.

In addition, there is an assertion that grants reduce accountability by creating uncertainty about who is responsible for water and wastewater infrastructure. A conflict of interest may develop within governments that both finance and regulate water systems. The regulatory department which oversees environmental performance may be reluctant to enforce stricter standards if it knows that it is forcing financial burden on a municipality which will likely obtain financial assistance through grants from the treasury department.[24]

The financial reality of senior levels of governments emerging and the issues noted above related to past grant programs, provides a challenge where there is an expectation from Ontario's municipalities that own and operate water systems.

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[21] Swain, Harry, Lazar, Fred and Pine, Jim, Expert Panel on Water and Wastewater Strategy, Watertight: The Case for Change in Ontario's Water and Wastewater Sector, Ontario Ministry of Public Infrastructure Renewal, Toronto, 2005, p. 50

[22] Andrew Sancton and Teresa Janik, Provincial-Local relations and Drinking Water in Ontario, The Walkerton Inquiry, Commissioned Paper 3, 2002, p. 22

[23] Ibid, p. 23

[24] Elizabeth Brubaker, C.D.Howe Institute Commentary No. 330, A Bridge Over Troubled Waters: Alternative Financing and Delivery of Water and Wastewater Services, May 2011, p. 5

Although the full cost pricing has been advocated since Walkerton within the regulatory government authorities, academia and industry, grant funding from higher levels of government continue to be used for water and wastewater services.

A review of the amount of grant funding used for water and wastewater services was conducted for the sample set of municipalities as shown in the summary table below:

Table 2: Grant Funding & User Rate Revenue for Sample Municipalities ($'000s)

| Year | Sewer Grant | Water Grant | Total Grant Funding | Total Sewer User Rate | Total Water User Rate | % of Sewer UR | % of Water UR |
|---|---|---|---|---|---|---|---|
| 2000 | $844 | $4,649 | $5,493 | $533,036 | $489,007 | 0.2% | 1.0% |
| 2001 | $1,542 | $3,581 | $5,123 | $646,534 | $585,487 | 0.2% | 0.6% |
| 2002 | $1,224 | $3,581 | $4,805 | $712,333 | $646,892 | 0.2% | 0.6% |
| 2003 | $2,205 | $16,538 | $18,743 | $748,952 | $655,861 | 0.3% | 2.5% |
| 2004 | $23,372 | $7,738 | $30,110 | $679,447 | $695,690 | 3.3% | 1.1% |
| 2005 | $21,816 | $13,697 | $35,514 | $854,130 | $736,281 | 2.6% | 1.9% |
| 2006 | $35,706 | $14,135 | $49,841 | $899,028 | $773,486 | 4.0% | 1.8% |
| 2007 | $26,584 | $20,715 | $47,299 | $983,152 | $841,098 | 2.7% | 2.5% |
| 2008 | $16,806 | $11,411 | $28,217 | $1,004,620 | $884,100 | 1.7% | 1.3% |
| 2009 | $45,800 | $23,798 | $69,597 | $1,050,790 | $962,126 | 4.4% | 2.5% |
| 2010 | $159,037 | $139,697 | $298,734 | $1,158,697 | $1,001,064 | 13.7% | 14.0% |
| Total | $334,936 | $259,539 | $593,476 | $9,270,720 | $8,271,093 | | |

Source: Calculated from data provided in the annual Financial Information Returns (FIR) for RPWCO municipalities in the database submitted to the Ministry of Municipal Affairs and Housing, Ontario

The sample group of municipalities have used approximately $593.5 million of grant funding for water and sewer infrastructure services since 2000.[25] It is important to note that if this grant funding was not available then municipalities would need to eventually

[25] Calculated from data provided in the annual Financial Information Returns (FIR), Ministry of Municipal Affairs and Housing, Ontario

plan to raise the revenue through user rates. The majority of this funding appears to be from the federal government's Infrastructure Stimulus Funding and Building Canada Fund programs. Municipalities in the sample group will continue to investigate any grant funding opportunity which can expedite priority water infrastructure projects in order to reduce the user rate burden on customers.

Recently at the Federation of Canadian Municipalities (FCM) conference on June 1, 2012, the Honourable Denis Lebel, Minister of Transport, Infrastructure and Communities announced the start of consultation to guide the development of a New Long-Term Federal Plan for Municipal Infrastructure Funding. He noted in his speech that Infrastructure Canada is committed to deliver the Building Canada Plan, make the Federal Gas Tax permanent and develop a new long term infrastructure plan in order to develop what is anticipated and expected from municipalities is another grant funding opportunity for infrastructure.[26] Although there are no details currently developed for the new plan, based on recent grant funding programs, municipalities will likely be able to choose where the funding should be spent based on their council's priorities. A recent council resolution passed on June 27th, 2012 notes the municipality's intent to use potential grant funding for wastewater plant projects as noted,

> "WHEREAS, The Building Canada Plan and a number of important federal-provincial transfer agreements vital to Canada's cities and communities will expire in March 2014;…AND WHEREAS, our community has continuing infrastructure needs, such as the bus rapid transit and sewage plant upgrades and expansions, that can only be met with through the kind of long-term planning and investment made possible by a national plan;…"[27]

[26] Government of Canada, Media Release-Government of Canada to Work with Partners on a New Long – Term Infrastructure Plan, June 1, 2012, website, www.infrastructure.gc.ca

[27] Regional Municipality of Durham, Council Meeting on June 28, 2012, Motion 164 - Development of a new long - term federal plan for municipal infrastructure funding

In addition, the recent announcement of new federal wastewater regulations has ignited FCM to issue a member board alert calling for grant funding from the federal government in order to comply with the new regulations as follows:

Federal Wastewater Regulations – Key Messages

> * The federal government must back up its new wastewater regulations with a funding plan that will protect the environment and property taxpayers. The federal government has worked with provinces, territories and municipalities to develop the regulations and now it must keep working with us to pay the more than $20 billion required to meet them.
>
> * Municipalities, which are responsible for more than 50 per cent of Canada's public infrastructure but collect just eight cents of every tax dollar, cannot meet the country's wastewater infrastructure needs on their own while also maintaining and repairing our roads, bridges, transit systems and other infrastructure vital to our economy and quality of life.
>
> * The federal government has taken an important step in the right direction by promising to work with all orders of government to develop a new, long-term infrastructure plan, and that plan must include a cost-shared funding strategy to implement the new wastewater regulations.
>
> * The federal government must now provide an updated cost estimate for the new wastewater regulations, and explain how it'll work with all orders of governments through the long-term infrastructure plan, to pay for the regulations.[28]

The new federal wastewater regulations are intended to end the release of raw sewage into Canadian watercourses. As noted earlier, it does not appear to be fair that municipalities who have not upgraded their plant to current industry standards in order to protect the environment should be provided grant funding from higher levels of government. The release of grant funding to municipalities does not lead to the goal of full cost pricing for water infrastructure.

The municipal decision to raise water user rates appropriately in order to manage the needs of water and wastewater services has been challenging based on the current social and economic activity in each community. A sample of historical water and sewer

[28] Federation of Canadian Municipalities, Member Board Alert-Federal Wastewater Regulations, July 11, 2012

user rate increases in Ontario during the 1990's clearly show that user rate increases were limited to zeros. In one case, the Region of Durham had six years of zero percent user rate increases.[29] Minor rate increases of 1 to 2% during this time, has resulted in a lost opportunity to generate additional revenue (i.e. approx. $3 to 6 million) for Durham Region. Based on discussion with staff and political representatives at the time, the working environment during the time was "laisse faire" compared to the regulatory requirements of today:

> "During the recessionary times in the 1990s, the number one concern was the economy and the number of jobs being lost in the community. The message was clear from the businesses and residents that tax increases were unacceptable. We thought our water and sewer systems were generally new and we did not have Walkerton to think about. We knew our systems had extra capacity to service growth so we could cut back on projects."[30]

The current environment of the water industry in Ontario is clearly different due to the regulatory impacts related to the Walkerton tragedy. A review of water user rate increases for municipalities show that zero rate increases were isolated to a few municipalities and not for a multi-year period like in the 1990s. For example, zero percent increases were approved by Halton in 2010, London 2011 and Windsor 2005 and 2006.

## 7.2 Water Rate Structures

Since Walkerton, municipalities have faced a number of new regulatory requirements for the management of water infrastructure. In terms of water rate structures, the findings of this paper have found that the most common amongst the sample municipalities is a Declining Block Rate structure which includes a residential rate and then a declining

[29] Regional Municipality of Durham, Joint Finance and Administration and Works Committee Report 98-J-28, 1999 Recommended Water & Sanitary Sewer User Rate, December 9, 1998, p. 31

[30] This quote is taken from a discussion with senior municipal management and a politician. To ensure anonymity and confidentiality, the quote is provided without attribution. May 2012

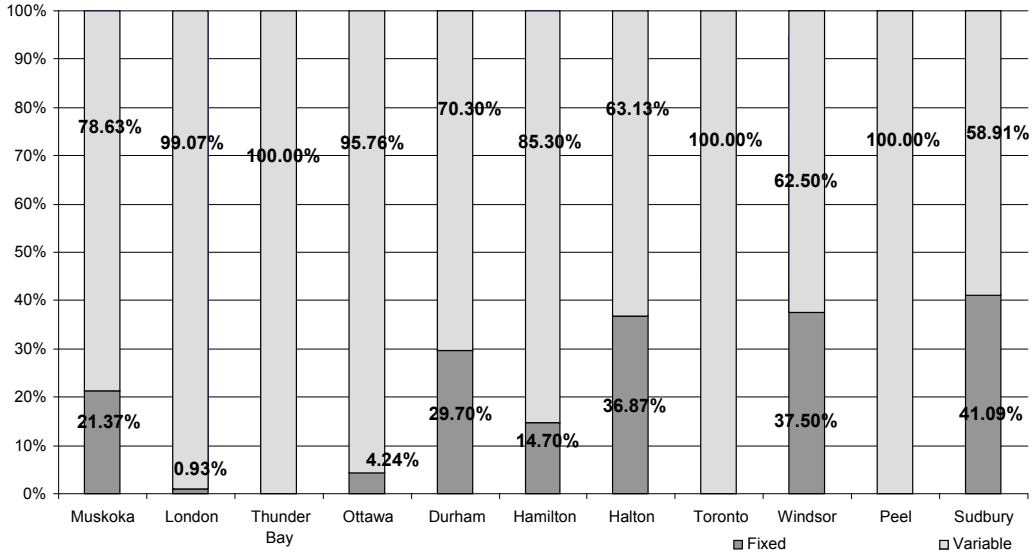
water rate based on the volume used for non-residential users. The residential customers pay the higher rate as they cause the peak demands in the summer while the larger water users use water more efficiently on a more consistent demand throughout the day. The majority of the municipalities have maintained their historical practice in order to maintain continuity amongst the major stakeholders of the community. The number of municipalities which have made major changes to their water rate structure since Walkerton is only two. In the City of Kingston, their water and wastewater rates were established based on the historical service areas within the municipality. Two of the three service rate areas were paying 33 to 38.5% higher rates in 2007 than the service area with the lowest rate.[31] The City of Kingston approved a harmonization of rates in order to address equity and capital requirements within all three service areas. In the City of Toronto their water rate structure was simplified by revising the number of block rates from seven to two based on consultation with the larger industrial users.

Almost every municipality in the sample group has undertaken a review of their rate structure through an internal staff or external consultant study. Several municipalities are planning future water user rate reviews. The main drivers for reviewing water rates since Walkerton has been the declining per capita and overall total consumption versus the increasing operational and capital costs related to the new regulatory regime in Ontario including service growth based on population growth in the Greater Toronto Area. As noted earlier, water and wastewater systems are very capital intensive. Most of the costs related to providing water services are fixed. Fixed costs are expenses that do not change or cannot be changed in the short term based on water production. Examples of fixed costs for a municipality providing water include labour, annual debt payments and facility costs regardless of how much water is used by customers. Fixed costs for

[31] Utilities Kingston, Harmonization of Water and Wastewater Rates, website www.utilitieskingston.com, July 2012

providing water services can account for 75 to 80% or greater of the total expenses required.[32] The variable costs are expenses that change with a change in water production volume such as chemical and energy required for treatment. Municipalities with a water user rate structure which involved a very high (i.e. 80 to 100%) variable water rate, have experienced a financial impact due to lower consumption rates. Lower consumption rates have resulted in lower water user rate revenue due the water efficient fixtures, appliances and customer behaviours related to water consumption. As shown in the Figure B below, there are several municipalities from the sample group with very high variable rate structures. Some municipalities have or are planning to increase the fixed portion of their water rate in order to decrease variability in revenues.

Figure B: Percentage of Fixed vs. Variable Water & Sewer Rate (2012) Based on Annual Consumption of 250 $m^3$




One example of a municipality with a 100% variable rate is in the Regional Municipality of Peel. In September 2011, Peel's council asked staff to conduct a review of their water rate structure due to the declining consumption trend and fluctuation in revenue. Peel's current water rate is equivalent to a Single Block Rate as the water is charged based on

[32] Oliver M. Brandes, Steven Renzetti and Kirk Stinchcombe, Worth Every Penny: A Primer on Conservation-Oriented Water Pricing, University of Victoria, May 2010, p. 23

100% volumetric rate with no fixed charges. In April 2012, Peel's rate review concluded that based on all the options, the end result, in each case shows residential customers will pay more than under the current rate structure. If Peel were to establish a 40% fixed cost plus a variable rate, it was estimated that the new rate design would result in 68% of the residential customers paying more. The staff information report to maintain the status quo was presented in June 28, 2012. The report concluded that, "Ultimately, a rate structure itself does not guarantee revenue stability and revenue volatility may be minimized via sound inputs to the utility rate calculation, regardless of the structure utilized."[33]

In Ottawa, the city's Auditor General identified a weakness in his 2008 Review of the Water Rate. He recommended that the city consider the adoption of "water rates based on a fixed meter charge plus consumption charge as this will…amore predictable and stable cash flow."[34] Staff recommended a new rate structure based on the AWWA M1 Manual as used in other municipalities in Ontario, however, the one councillor noted during the meeting, "…any problems the City has in terms of financing should be dealt with internally through preventative budgeting in the surplus years and should not become a burden of consumers who have made efforts and continue to conserve. He commented that just because other utilities and because other municipalities use the base plus volume system does not mean it is right for Ottawa." [35] The politicians are concerned about the short term impact to their voters and do not recognize the long term financial stability required for the water system. The recommended solution approved at the committee meeting included, "…a rate structure that would not effect no increase in

[33] Region of Peel, Committee Report to Council, Utility Rate Structure Review – Options and Findings, May 30, 2012, p. 6
[34] City of Ottawa, Report to Planning and Environment Committee and Agricultural and Rural Affairs Committee, Review of the Water, Sanitary and Stormwater Rate Structure April 6, 2010, p.5
[35] City of Ottawa, Minutes of Planning and Environment Committee and Agricultural and Rural Affairs Committee, April 13, 2010, p.36

costs (when comparing the existing and proposed rate structures using base year 2010) to those with an average consumption of less than 18 cubic meters per month and shift resulting impact to those with an average consumption higher than 18 cubic meters per month."[36]

As of 2012, Ottawa's water rate fixed portion of the water bill is only 4% based on an annual consumption of 250 $m^3$.

The Region of Durham reviewed their water rate structure in 2004 based on a council request to potentially convert to a single block rate versus the existing three block declining rate structure. There was a concern that industry was not paying their fair share due to the lower third block rate charge versus the higher residential charge in the first block rate. The report noted that a single block rate structure would impact customers in the second and third block rate users by increasing annual charges estimated to range from 13 to 31%.[37] The majority of these customers are non-residential customers which are major employers in the community. The report informed council that the current rate structure established in 1976 allocated the higher costs to the residential customers which cause the peak water demands in the summer for outdoor water use. The recommended action based on the water rate review was to "…continue to utilize the declining block rate structure that charges a full rate to the smaller /residential users as they are directly responsible for the peak demands in consumption which drive the capital and ongoing operating costs of the water and sewer systems."[38]

Based on the sample of the above noted review of water rate structures and responses to the questionnaire, the majority of municipalities have not changed their historical

[36] Ibid, p. 37
[37] Regional Municipality of Durham, Joint Finance & Administration and Works Committee Report No. 2004-J-46, December 8, 2004 p. 4
[38] Ibid, p. 12

practice of how water user rates are established. Although each community has different ways of charging for water services, municipal staff and councils have generally not recommended any major changes to water rate structures since the Walkerton tragedy in 2000 in order to raise appropriate resources.

## 7.3 Water Policy Environment

This research paper explored the water policy environment at the local government level in order to gain a sense of relative changes since 2000. The policy environment experienced by the municipal government water service providers from the sample group was to found to highlight the following four objectives in terms of sustainability, i) environmental, ii) economic development, iii) financial and iv) social. The majority of the municipalities identified these four water objectives during their review and discussion related to water rate structures.

The common environmental objectives related to water pricing include water conservation and water pollution control. All seventeen municipalities have established water conservation programs to encourage the efficient use of water since 2000. Water conservation is one of the common objectives municipalities consider when reviewing water rate structures in order to reduce summer peak demands by residential users. For example, one of the guiding principles of the Region of Halton's rate review included water use efficiency.[39] Water efficiency helps to better use existing infrastructure capacity which results in the potential deferment of capital expansion projects. Environmental objectives related to water pollution from wastewater treatment plants is taken into consideration as municipalities have had to upgrade and replace facilities since Walkerton in order to meet need regulatory requirements. Major water quality

[39] Regional Municipality of Halton, Administration & Finance Committee Report No.CS-47-08, Revised Water and Wastewater Rate Revenue Structure, August 28, 2008, p. 3

issues in the cities of Hamilton and Toronto have required wastewater user rate investments in order to improve discharges into the Hamilton Harbour Area and the Lake Ontario beaches area in Toronto related to combined sewer overflows. Combined sewer overflows occur in older sewer systems where wastewater is combined with stormwater related to rainfall events.

Economic development objectives play a key role in reviewing water rate structures as municipalities in this study were concerned about maintaining existing industrial users and the municipality's competitive advantage in attracting new companies into their community. Most municipalities noted that economic development is a large factor in maintaining water user rates competitive without large increases. The large end users of water located within the major urban centres such as manufacturing, paper mills, food and beverage and power generation facilities want to ensure the most competitive and fair water rate is charged for their respective industry. In 2007, the City of Toronto approved a new water rate structure in order to provide a more competitive rate for industrial consumers. One of the guiding principles adopted for the rate structure review was that rates should position the city competitively. At the time, the city's larger industrial employers would find costs to be as much as 20-25% lower in Peel, Durham, Vaughan and Hamilton and 35% lower in London. [40]

The financial objective related to water rate structures is ensuring that adequate user rate revenue is collected in order to properly manage water infrastructure. All municipalities in the sample group noted that financial sustainability is important in reviewing rate structures. As referenced above, water infrastructure is capital intensive and adequate operating funds are required. Municipal councils within the sample group were able to obtain increases in water user rates in order to address the regulatory

[40] City of Toronto, Report to Executive Committee, Water Rate Restructuring-Results of Public Consultation and Recommended Rate Structure, May 14, 2007, p. 1

requirements from Walkerton related to operating and capital upgrades. Since Walkerton, user rate revenue for the sample group has risen by 105% for water and 117% for wastewater up to 2010.[41] Financial sustainability for water systems requires municipalities to determine long term capital investments in order to properly manage the life cycle costs. Life cycle costs mean all the costs related to the planning, design, construction, operation, maintenance and decommission of infrastructure during the duration of its life.

In terms of setting water and sewer rates a number of municipalities in the sample group present a separate annual user rate report in order to obtain approval and forecast future capital and operating needs for a longer period from 5 to 10 years. Since Walkerton, there has been some indication by the sample municipalities of reviewing longer term needs related to water systems due to the capital intensive investment required to meet life cycle and regulatory needs. A number of municipalities have undertaken asset management plans in order to understand the water infrastructure owned and the long term costs associated with their systems. Based on the feedback of municipalities from the sample group, prior to Walkerton, data related to individual municipal water infrastructure was not available. Asset management plans consist of establishing i) an inventory of infrastructure, ii) the age and condition of the infrastructure, iii) the financial requirements to maintain, rehabilitate and/or replace infrastructure and iv) a priority of projects and schedule of investments required. Some examples of municipalities where asset management plans have been conducted and a longer term forecast of user rate requirements have been calculated include, the Cities of Toronto and Hamilton and the Regions of Durham and Peel. The forecast of future water user rates increases in the next 5 to 10 years range from 8 to 10% in order to maintain existing water infrastructure.

[41] Calculated from data provided in the annual Financial Information Returns (FIR) for RPWCO municipalities in the database submitted to the Ministry of Municipal Affairs and Housing, Ontario

In Durham, an annual Asset Management Report is presented to Regional Council in order to identify the priority infrastructure projects. In December 2004, Regional Council approved the establishment of an Asset Management Reserve Fund for priority rehabilitation and replacement of water and sanitary system capital needs. An annual reserve fund contribution from user rate revenue of $2.96 million for water and $2.47 million for sewer provides for some dedicated funding for asset replacement.[42] The creation of the annual reserve fund does not meet all of the needs required for the water and wastewater systems however; it provides a step forward that Regional council has recognized for dedicated funding required for replacement of infrastructure.

The research observed that most of the higher growth municipalities in the Greater Toronto Area are primarily influenced by development pressures within the urban area service boundaries. Major capital projects are within the capital budget forecast in order to continue to service the demand of proposed residential, commercial and industrial development. Growth related projects are funded primarily by residential development charges however user rates fund the remaining portion. The proportion of user rates used with development charges is dependent on the municipality's calculation with their individual development charges background study. Growth and development in the Greater Toronto Area provides economic activity in which the various communities rely on for general property tax assessment.

All the municipalities from the research indicated that the objective of social sustainability is influenced through various stakeholder pressures throughout the demographic make up of the individual community. The question of whether water is affordable for all sectors of the community is clearly a factor presented to municipal councils. In setting water rates by the sample municipalities there is a clear political struggle not to impact

[42] Regional Municipality of Durham, Joint Finance & Administration and Works Committee Report No. 2011-J-46, 2011 Asset Management Report, November 2011, p. 23

large end users and to ensure customers are treated fairly, in particular residents on fixed and low income households.

A change in political direction can clearly revise long term water investment plans. In London, after the new mayor was elected in 2010, the newly elected council voted to amend the previously approved water user rates of 7-8% to zero. Water projects related to upgrades and renewals including maintenance were deferred in order to meet the revised financial target of no new spending. In November 2011, London city council approved 2012 user rate increases of 7% for water and 8% for sewer. Mayor Fontana noted that, "This is not sustainable and urged to push the federal and provincial governments to help cover the costs of maintaining water pipes and sewers."[43] In support of the staff recommendation related to the committee report, Councillor Paul Hubert argued the 2012 rate increase can't ethically be cut to zero, considering city hall's obligation to meet provincial standards for water-system sustainability. He noted that, "Last year it was argued the individual taxpayers can't afford it. This year, it's the large industrial users who can't afford it." He is concerned that ongoing rate freezes will send the system into a "death spiral". The forecast of similar user rate increases are projected until 2018.[44] The decision to raise rates is challenging for municipal councils as they do not want to negatively impact any particular sector of the community. The reduction of investment in capital intensive water infrastructure which involves zero percent increases will inevitably result in larger financial requirements in order to address deferred maintenance and capital replacement. If one were to compare the cost of owning a water system with the cost of owning a car, one could determine that if you do not spend the proper money annually to maintain your vehicle properly then one day the owner will be faced with a large repair bill or the decision to replace it. The current regulatory

[43] Patrick Maloney, The London Free Press, Water, sewer rate hikes a tough loss for mayor, website www.lfpress.com, November 9, 2011
[44] Ibid

direction aims to ensure that there is a financial commitment to continue to renew infrastructure as it approaches the end of its useful life. The investments for water systems are required to minimize maintenance and repair costs, avoid a failure, avoid economic and social disruption, water loss and ensuring equity in sharing expenses between generations. Inter-generational equity amongst water users is important in order to avoid allocating large costs to future generations in order to benefit existing water users. This aspect is important in consideration of the funding for infrastructure replacement. If the cost of replacement is to be assessed against the rate payer who benefits from the replacement of the asset, should the past rate payer pay for this cost or should future rate payers be responsible for the replacement cost. If one assumes that the past user has consumed up the asset, then they should pay for the cost of replacement and an annual charge should be assessed through the life of the asset to have the funds available for infrastructure replacement. A different position is to have the future rate payer to assume the replacement cost and then debenturing and potential contribution from the operating budget can be used for replacement. If zero percent water user rate increases were to persist then inter-generational inequity would be developed for the water systems in question. Most of the municipalities in the sample have adopted a “pay as you go” policy for water infrastructure expenditures related to operating and maintenance life cycle costs.

Some municipalities have developed programs in order to assist certain water users who may have challenges paying for water and sewer charges. One program is available in the City of Toronto where a potential 20 to 30% rebate may be available for low income seniors and low income disabled persons, homeowners who meet the eligibility criteria under the City’s property tax relief programs.[45]

[45] City of Toronto, Report to Executive Committee, Water Rate Restructuring-Results of Public Consultation and Recommended Rate Structure, May 14, 2007, p. 22

## 7.4 Full Cost Pricing

One would expect that following the recommendations by Justice O'Connor regarding the importance of full cost pricing that some twelve years after the Walkerton water crisis, full cost pricing would be implemented by now. This is not what was found through the research of this paper.

The province introduced legislation which would definitely impact municipal water and wastewater user rates through the Sustainable Water and Sewage Systems Act. The Act was enacted in 2002; however, it has not been implemented as the approval of detailed regulations is still outstanding. The intent of the Act was to introduce the requirement to municipalities to undertake an assessment of the "full cost' of providing their water infrastructure services. Full costs for water service is defined in subsection 3(7) of the Act and includes " source protection costs, operating costs, renewal and replacement cost and improvement costs associated with extracting, treating or distributing water to the public and such other costs which may be specified by regulation." Under subsection 4(7), similar provisions are made for wastewater services with respect to, "…collecting, treating or discharging wastewater." [46] The Act would require the preparation of two reports, i) Full Cost of Services and ii) Cost Recovery Plan for submission to the Ministry of Environment or other provincial ministry for approval. Municipalities would have been expected to implement the report findings once approved by the province.

On August 16, 2007, the MOE passed Ontario Regulation 453/07 under the Safe Drinking Water Act which requires municipalities to prepare Financial Plans for only water supply systems. The Financial Plan is required in order for a municipality to obtain their Drinking Water License. Wastewater systems are not covered under this legislation. The Financial Plan must be developed for a six year period and must contain details of a system's financial position, financial operations and cash flow and be made available to

[46] Province of Ontario, Sustainable Water and Sewage Systems Act, 2002

the public. The regulation does not require provincial approval of the Financial Plan but plans must be submitted to the Ministry of Municipal Affairs and Housing.[47] It is important to note that the Financial Plans do not need to provide the necessary information regarding user rate pressures and potential shortfall in development charges funding required for an informed decision regarding user rate increases. The prescriptive requirements from the SWSSA are not required for the water Financial Plans.

In keeping with the recommendations within the Watertight report, on March 23, 2010, a private members Bill, (Bill 13) was given first reading. The Bill proposes to repeal the SWSSA and introduce a new Act entitled the Sustainable Water and Wastewater Systems Improvement and Maintenance Act. The purpose of the Bill is to ensure public ownership of water and wastewater services is maintained, promote full cost recovery and increase in scale and capacity the systems, improve transparency and to create an independent economic regulation. The establishment of the "Ontario Water Board" would monitor and approve all charges related to municipal water and wastewater services. Bill 13 was not enacted and no regulations were developed.

Municipalities in the sample were asked whether they had implemented full cost pricing reflecting the conceptual framework developed in the table below which is based on the theoretical review and legislative requirements. The three major components for full cost pricing would include i) supply and treatment cost, ii) resource cost and iii) environmental cost.

[47] Province of Ontario, Ontario Regulation 453/07, Safe Drinking Water Act, 2007

Table 3: Conceptual Framework for Full Cost Pricing

| | | | Item No. |
|---|---|---|---|
| **FULL COST** | **Supply and Treatment Cost** | Operating and Maintenance Cost | 1 |
| | | Interest and Debt Cost | |
| | | New Capital Investments Cost | |
| | | Existing Infrastructure Cost | |
| | | Administrative Costs | |
| | | Other Direct Costs | |
| | | Amortization of Tangible | |
| | | Capital Assets | |
| | | | |
| | **Resource Cost** | Water Cost | 2 |
| | | Social Cost | |
| | | Opportunity Cost | |
| | | | |
| | **Environmental Cost** | Source Water Protection Cost | 3 |
| | | Pollution Prevention Cost | |

Although the intent of full cost pricing is to include all three of the above components legislative, economic, environmental and social factors continue to evolve following Walkerton. It is clear from the responses that municipalities are including the costs for supply and treatment with the exception of amortization costs of tangible capital assets. It is important to note that from an accounting perspective, municipalities in Ontario have had to report amortization costs in the Financial Information Returns starting in 2009. Amortization costs based on Public Sector Accounting Board 3150 requires that,

> "…the cost, less any residual value, of the tangible capital asset with a limited life should be amortized over its useful life in a rational and systematic manner appropriate to its nature and use by the government."[48]

Under Section 292 (2) of the Municipal Act, municipalities have the option to include the amortization expense as part of their annual budget. Most municipalities in the sample group have elected to present their budgets based on a cash basis. The amortization expense is not included in budgets given that it is a non-cash item. Based on the

[48] Canadian Institute of Chartered Accountants, Public Sector Accounting Handbook, Section 3150-Tangible Capital Assets, June 2007, p. 4

municipalities within this paper, the annual amortization costs related to water and wastewater services for 2009 and 2010 represent 21.5% to 31.4% of the total user rate revenue for water supply and wastewater services respectively (Appendix B). If the amortization costs were included in the water and sewer budgets of the sample of municipalities, this would raise on average $194 million for water and $275 million for wastewater user fees respectively per year and represent on average an annual increase of only $22 per person for water and $31 per person for wastewater. [49]

The option within the Municipal Act for municipalities to include amortization costs implies that municipalities should be budgeting at a minimum, the equivalent amount of their amortization cost, for replacement infrastructure investment (as this is what is considered to be consumed on an annual basis). In reality, this amount does not reflect current market prices and would be insufficient to maintain assets at current service levels. Infrastructure will likely cost much more at the time that it requires replacement than at the point in time when the original project construction costs occurred. If municipalities were budgeting for the reinvestment of infrastructure based on replacement costs versus historical cost then they would be moving towards ensuring that adequate funding is available to meet the infrastructure needs. Most municipalities do make contributions in their budgets to reserves and reserve funds to finance major future expenditures. However, these amounts are not reported specifically for water services in their respective FIR.

In terms of a resource cost related to including water value, social and opportunity costs as noted in theoretical literature, none of the municipalities included these costs. These costs are difficult to calculate based on their intangible nature. One case study conducted by Renzetti and Kushner reviewed the potential impact of water and sewer

[49] Calculated from data provided in the annual Financial Information Returns (FIR) for RPWCO municipalities in the database submitted to the Ministry of Municipal Affairs and Housing, Ontario

costs if these resource costs were included for the Regional Municipality of Niagara. The case study calculated the estimated unaccounted costs as follows, i) return on capital investment, ii) social cost of electricity, iii) value of raw water and iv) loss of recreation due to water pollution. The estimated values of these resource costs are based on theoretical studies which can provide a quantum which may not be precise. For the Region of Niagara case, the addition of the resource cost would increase the annual costs of water services between 16% and 55%.[50] Some municipalities did comment that they believe a portion of the environmental costs were included as part of their current costs since they have had to upgrade both water and wastewater infrastructure to meet more stringent regulatory standards related to wastewater effluent quality and air and odour emission standards since 2000. The intent of the environmental regulatory standards is to ensure that impacts from facility operations are minimized. The determination of the social and environmental costs and the value of raw water would need to be determined based on site specific conditions associated with the water and wastewater systems. For example, if a municipality is not the cause of local beach closures then the loss of recreation cost would not be included in the calculation. Some form of policy framework and technical directive would need to be established by the regulator in order to add these costs in a consistent manner related to water and sewer user rates.

Another cost which is unknown to municipalities is source water protection. Source water protection was legislated in Ontario through the Clean Water Act in 2006. Planning for source water protection has been initiated based on a watershed basis through the creation of multi-stakeholder Source Protection Committees throughout the province. The objective of the process is to develop Source Water Protection Plans which must be

[50] Steven Renzetti and Joseph Kushner, Full Cost Accounting for Water Supply and Sewage Treatment: Concepts and Case Application, Canadian Water Resources Journal, Vol. 29(1), 2004, p. 13-22

incorporated in the Official Plans of municipalities. The province has provided funding to Source Water Protection Authorities (basically adjacent Conservation Authorities on a watershed basis). The planning schedule anticipates that the Source Protection Plans will be completed and submitted to the MOE by the fall of 2012.

Some of the municipalities have included source water protection costs mostly related to groundwater supply systems. The Regions of Durham, Peel and Waterloo have undertaken source protection groundwater studies prior to Walkerton and continuing on to date. Subject to the final approval from the MOE in 2013-14, Source Protection Plans will impose additional costs for municipalities to implement the policies of the plans which will include maintaining technical data, undertaking Risk Management Inspections, establishing Risk Management Plans and having a Risk Management Official review existing and proposed activities and development plans within Source Protection Areas. The estimated costs are currently unknown until the Source Protection Plans are complete and approved.

In addition, municipalities were asked about what legislative framework would help them to implement full cost pricing. Based on the responses, there was no clear direction on how to proceed with full cost pricing as some municipalities favoured the establishment of the Ontario Water Board, while others think detailed regulations are required in order to implement full cost pricing. Several others thought that regulations were not required as this would raise water rates higher than anticipated and negatively impact their communities. They expressed the notion that there is only one tax payer for services and higher rates for water services may be challenging to their local community based on the current economic climate.

Some municipalities noted that in terms of having an industry economic regulator, there are similarities which can potentially be made to the Ontario Energy Board in terms of rate approval for electricity distribution. In reviewing the approval of local electrical

distribution rates, it has been found that the process since deregulation in the electrical distribution industry has been cumbersome, time consuming and expensive. Rate applications are applied for every 4 to 5 years and can cost $300,000 to $500,000 for consultant and legal fees. In addition, local distribution corporations have to pay for stakeholder (intervener) costs related to the rate hearing.[51]

All the municipalities in the sample group recommended that the province consult with municipalities and the water industry if the province plans to implement an economic regulator such as the Ontario Water Board or detailed regulations related to setting user rates.

## 8. Conclusion and Recommendations

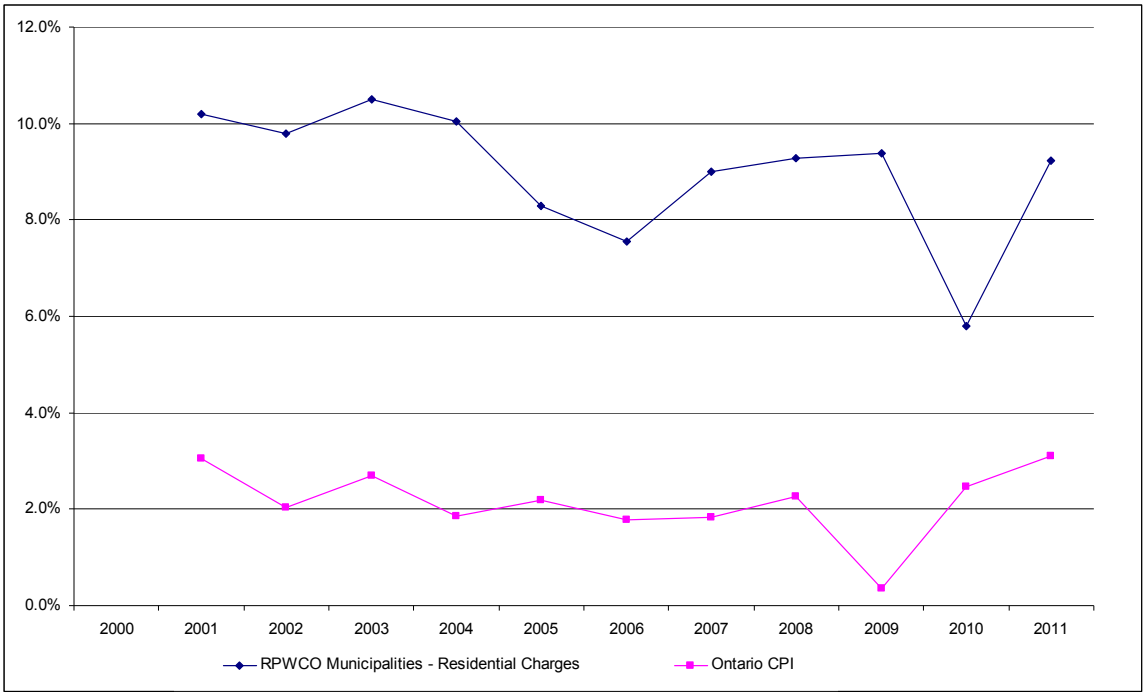
The event of the Walkerton water crisis created a paradigm shift in the way municipal water infrastructure is managed in Ontario. The province established a zero tolerance regulatory regime in terms of water standards, water operations, water certification and licensing. Although municipalities that own and operate water supply systems are required to submit Financial Plans in order to obtain their MOE water license, there are currently no regulatory requirements on how water services are priced. Municipal councils are responsible to set water and sewer user rates in order to collect the necessary funds required to manage these essential services for the development of healthy communities. Water services are generally “out of site and out of mind” as the majority of the infrastructure is buried. Service disruption and failures have immediate impacts to water customers and in some circumstances can result in death as experienced during the major water contamination event in Walkerton.

[51] This information is taken from discussions with senior municipal management and politicians. To ensure anonymity and confidentiality, the quote is provided without attribution. July 2012

Since the Walkerton Inquiry, there have been a number of policy papers and studies conducted on the topic of water pricing and management. Economists such as Renzetti and Dewees have advocated for the use of marginal cost pricing in setting water rates. The water industry, academia and government regulatory agencies have continued to advocate the policy direction for full cost pricing. The province has introduced legislation on a couple of occasions to regulate the pricing of water similar to other utilities however the full implementation has not been enacted.

One of the challenges of moving towards full cost pricing for the provision of water services is that it is a “rising cost” utility as the average user rate increases have been consistently higher than the Ontario Consumer Price Index (CPI) as shown below:

Figure C: Average Annual Water & Sewer User Rate Increase vs. Ontario CPI




Municipalities have had to increase water rates since Walkerton in order to become compliant with new regulations and address capital infrastructure replacement programs however there is no evidence that they have changed their rate structure in order to raise additional revenue.

As noted in the Conference Board of Canada report referenced in chapter 2, the challenge with implementing full cost pricing is based on price setting barriers related to, “social, political or cultural” factors. Each municipality in the sample group has a rate structure design based on their previous financial and technical analysis. The municipalities that have reviewed their water rate structure can justify why their pricing system works and is accepted by their council. The research indicates that most municipalities maintained their historical practice for water rate structure and pricing. The municipal willingness to “change or charge” was not found to be high. From a political perspective, politicians did not want to accept any impacts on various water customer sectors as one of the groups would have experienced an increase of rates while others may experience a decrease if the water rate structure were changed. Equity amongst water customer classes appear to be important in the political decision making process. It appears that water pricing is politicized, such as to follow a strategy of “Not In My Term of Office” which can lead to cost avoidance and deferral of capital investment. In addition, the potential opportunity of grant funding by higher levels of government does not help the policy objective of achieving full cost water pricing.

In terms of the progress with respect to moving towards full cost pricing which has been made by municipalities in the sample group since Walkerton, the following observations have been made:

1) user rate structure reviews have been conducted by municipalities in order to obtain a better understanding of the existing and potential alternatives for setting user rates
2) all municipalities are using meters to measure and charge water services to their customers with the exception of certain older areas in Toronto which are in the process of installing meters

3) most municipalities have undertaken asset management plans to better understand their infrastructure inventory and to identify longer term investment needs
4) municipalities are required to calculate amortization cost for water infrastructure which may be a starting point for including this cost for setting user rates

Based on the research conducted for this paper, the following recommendations should be considered in order to improve the information related to the pricing of water services:

1) information related to population and flow should be in a consistent database form
2) financial information submitted in the FIR should reflect the annual budget used to set the user rates in particular how development charges, debt financing and reserve funds are used
3) the development of economic regulation for water user rates should be developed in consultation with municipalities and the water industry in order to address the different water policy objectives including economic development, financial, social and environmental
4) a policy framework and technical directive should be developed if environmental costs are to be included as part of the definition of full cost pricing

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Appendix A: Municipal Water & Wastewater Questionnaire

**2012 Municipal Water & Wastewater Questionnaire**

Ontario's municipal water supply industry is highly regulated by the province since the tragic events of Walkerton where seven people died and hundreds remain impacted from contamination within the municipal water supply system. Based on the Part 2 Report of the Walkerton Inquiry, the Honourable Justice

O'Connor documented 93 recommendations related to the management of water supply systems in Ontario. With respect to municipal water providers, recommendation 48 states that "*As a general principle, municipalities should raise adequate resources for their water systems from local revenue sources, barring exceptional circumstances."* The objective of the following questionnaire is to examine municipal information related to water and sewer user rates.

**Water Rates**

1) User rates are used to charge customers for water & wastewater services. The design of the water user rates is based on a "water rate structure". Please indicate below the water rate structure currently used by your municipality: ☐ Single Block, ☐ Declining Block, ☐ Increasing Block, ☐ Humpback Block, ☐ Excess Use Charge, ☐ Seasonal ☐Other_____

2) Has your municipality changed the water rate structure since Walkerton, 2000? ☐Yes ☐No If Yes, when did it occur?_____

3) If you answered YES to question no. 2, what was the primary reason for adjusting your rate structure and what structure was previously in use?

4) If you answered NO to question no. 2, are you planning to review or change your existing user rate structure? _____

5) Since the Walkerton tradegy, has your municipality documented the impact of the new regulations on your water and sewer user rates? (ie. capital investment

required in millions and increase on annual operating costs ? If you have not documented the impact, what is your conceptual estimate of the regulatory impact to date since Walkerton in terms of capital investment and annual operating costs?

**Water Policy**

6) The following questions are to obtain a sense of the policy setting environment in your municipality with respect to water & sewer user rates:

i) Is a separate annual user rate study conducted?

ii) Is there political support for staff's recommendations related to annual water & sewer user rate increases?

iii) Has council changed a staff recommendation regarding water & sewer rates since 2000?

iv) When and Why?

v) Are future user rate impacts presented for a 5, 10 or 20 year period?

vi) Has user rate forecasting changed since 2000?

vii) Does your municipality have a specific water management policy approved by council?

viii) Are water & sewer rates set to encourage and maintain economic activity in your municipality?

ix) Are water & sewer rates used to promote water conservation?

x) Are environmental objectives addressed through the setting of water and sewer rates?

xi) Do water & sewer rates subsidize other services?

xii) What are the top three issues your municipality has experienced since Walkerton related to user rates?

**Full Cost Pricing**

7) The concept of "full cost pricing" for water and sewer user rates has been advocated since Walkerton. Full cost pricing can be defined in different ways. Based on the table below, full cost pricing may include the components as noted in the following table.

Please indicate which items are included in your municipality's approved user rate structure:

| | | | Item No. |
|---|---|---|---|
| **FULL COST** | **Supply and Treatment Cost** | Operating and Maintenance Cost | 1 |
| | | Interest and Debt Cost | |
| | | New Capital Investments Cost | |
| | | Existing Infrastructure Cost | |
| | | Administrative Costs | |
| | | Other Direct Costs | |
| | | Amortization of Tangible | |
| | | Capital Assets | |
| | | | |
| | **Resource Cost** | Water Cost | 2 |
| | | Social Cost | |
| | | Opportunity Cost | |
| | | | |
| | **Environmental Cost** | Source Water Protection Cost | 3 |
| | | Pollution Prevention Cost | |

Indicate all items included:

☐ 1 ☐ 2 ☐ 3

Please provide any individual comments related to items
(i.e. Source protection plans under development)

☐ _____

8) Which regulatory change do you think would be effective in order to implement "full cost pricing"? ☐ A separate body to review user rates, i.e. Ontario Water Board, ☐ Detailed Regulations,

☐ Other_____

**Important: Please note your individual responses will not be presented. The objective is to obtain information in the sample group.**

Thanks for participating!

Please email your response to John.Presta@durham.ca

Feel free to contact me regarding any questions you may have, at 905-668-7711 ext. 3520.

Appendix B: Amortization Costs for RPWCO Municipalities - % of Total User Rate Revenue (Water and Wastewater 2009-2010)

| | Water Supply | | | | | |
|---|---|---|---|---|---|---|
| | 2009 | | | 2010 | | |
| | User Revenue | Amortization | % of User Revenue | User Revenue | Amortization | % of User Revenue |
| Toronto | $307,994,639 | $35,117,494 | 11.4% | | | |
| Toronto | | | | $314,210,395 | $37,369,727 | 11.9% |
| Durham | $66,234,084 | $16,634,987 | 25.1% | | | |
| Durham | | | | $71,959,617 | $17,971,881 | 25.0% |
| Haldimand | $7,530,762 | $1,386,507 | 18.4% | | | |
| Haldimand | | | | $8,199,866 | $1,450,518 | 17.7% |
| Norfolk | $8,273,989 | $1,706,745 | 20.6% | | | |
| Norfolk | | | | $8,654,887 | $1,752,183 | 20.2% |
| Halton | $69,335,430 | $19,214,146 | 27.7% | | | |
| Halton | | | | $68,022,958 | $18,816,466 | 27.7% |
| Niagara | $37,040,860 | $7,381,498 | 19.9% | | | |
| Niagara | | | | $41,709,162 | $7,760,140 | 18.6% |
| Ottawa | $119,795,725 | $22,579,746 | 18.8% | | | |
| Ottawa | | | | $115,800,808 | $25,660,260 | 22.2% |
| Peel | $114,304,463 | $43,379,037 | 38.0% | | | |
| Peel | | | | $120,424,441 | $45,826,785 | 38.1% |
| York | $67,586,536 | $12,456,785 | 18.4% | | | |
| York | | | | $77,399,919 | $12,338,007 | 15.9% |
| Muskoka | $7,314,926 | $2,596,276 | 35.5% | | | |
| Muskoka | | | | $7,285,289 | $5,052,040 | 69.3% |
| Windsor | $41,815,000 | $5,416,000 | 13.0% | | | |
| Windsor | | | | $42,092,000 | $5,928,000 | 14.1% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Kingston | $15,977,454 | $5,261,535 | 32.9% | | | |
| Kingston | | | | $17,543,904 | $5,864,387 | 33.4% |
| London | $49,454,918 | $13,263,281 | 26.8% | | | |
| London | | | | $54,375,026 | $0 | 0.0% |
| North Bay | $7,639,497 | $771,120 | 10.1% | | | |
| North Bay | | | | $8,240,076 | $2,558,232 | 31.0% |
| Great Sudbury | $24,112,231 | $6,620,211 | 27.5% | | | |
| Great Sudbury | | | | $25,067,197 | $5,954,610 | 23.8% |
| Thunder Bay | $17,715,640 | $ - | 0.0% | | | |
| Thunder Bay | | | | $20,078,452 | $0 | 0.0% |
| **2009** | **$962,126,154** | **$193,785,368** | **21.51%** | | | |
| **2010** | | | | **$1,001,063,997** | **$194,303,236** | **23.06%** |

| | **Wastewater** | | | | | |
|---|---|---|---|---|---|---|
| | **2009** | | | **2010** | | |
| | **User Revenue** | **Amortization** | **% of User Revenue** | **User Revenue** | **Amortization** | **% of User Revenue** |
| Toronto | $374,368,428 | $68,239,129 | 18.2% | | | |
| Toronto | | | | $435,597,259 | $67,883,609 | 15.6% |
| Durham | $69,110,372 | $21,745,394 | 31.5% | | | |
| Durham | | | | $73,196,806 | $23,015,120 | 31.4% |
| Haldimand | $5,455,263 | $1,260,435 | 23.1% | | | |
| Haldimand | | | | $6,915,162 | $1,271,272 | 18.4% |
| Norfolk | $6,501,280 | $1,056,436 | 16.2% | | | |
| Norfolk | | | | $6,710,326 | $1,091,660 | 16.3% |
| Halton | $69,852,742 | $20,730,348 | 29.7% | | | |
| Halton | | | | $72,277,063 | $19,231,554 | 26.6% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Niagara | $58,606,028 | $9,882,359 | 16.9% | | | |
| Niagara | | | | $60,339,440 | $10,363,237 | 17.2% |
| Ottawa | $109,520,596 | $35,593,049 | 32.5% | | | |
| Ottawa | | | | $124,894,694 | $38,549,995 | 30.9% |
| Peel | $88,303,332 | $46,967,563 | 53.2% | | | |
| Peel | | | | $94,675,704 | $49,414,942 | 52.2% |
| York | $73,441,289 | $17,917,682 | 24.4% | | | |
| York | | | | $86,163,070 | $18,365,628 | 21.3% |
| Muskoka | $5,295,533 | $5,965,693 | 112.7% | | | |
| Muskoka | | | | $5,795,313 | $5,700,574 | 98.4% |
| Windsor | $58,040,426 | $9,230,245 | 15.9% | | | |
| Windsor | | | | $54,501,678 | $9,330,336 | 17.1% |
| Kingston | $22,417,004 | $6,972,218 | 31.1% | | | |
| Kingston | | | | $23,317,851 | $7,743,474 | 33.2% |
| London | $65,235,705 | $33,208,375 | 50.9% | | | |
| London | | | | $66,259,800 | $0 | 0.0% |
| North Bay | $7,973,454 | $948,871 | 11.9% | | | |
| North Bay | | | | $8,582,948 | $950,039 | 11.1% |
| Great Sudbury | $25,107,493 | $8,723,285 | 34.7% | | | |
| Great Sudbury | | | | $26,019,230 | $9,002,228 | 34.6% |
| Thunder Bay | $11,561,482 | $0 | 0.0% | | | |
| Thunder Bay | | | | $13,450,662 | $0 | 0.0% |
| **2009** | **$1,050,790,427** | **$288,441,082** | **31.43%** | | | |
| **2010** | | | | **$1,158,697,006** | **$261,913,668** | **26.51%** |