



Corporate Report

Report from Financial Management Services, Accounting

Date of Report: February 9, 2018

Date of Meeting: March 5, 2018

Report Number: FMS-056-2018

File: 18.45.254

Subject: 2018 Water and Wastewater Budget and Associated Rates

Recommendation

That the report from Financial Management Services Department – Accounting, dated February 9, 2018, regarding the 2018 Water and Wastewater Budget and Associated Rates, be referred to City Council for consideration after the Public Meeting scheduled March 19, 2018, for which notice will be duly given.

Staff Recommendation

That Council approve the 2018 Water and Wastewater Budget in Appendix 1 of the report from Financial Management Services, Accounting date February 9, 2018; and

That the City Solicitor be directed to prepare the necessary by-laws. FORTHWITH

Report

The Water and Wastewater Budget is fully funded by user rates with no reliance on property taxes. The water and wastewater rates fund both operating and capital expenditures. This report seeks approval for the 2018 Water and Wastewater Budget and associated rates. The report is organized with the following sections:

1. Proposed Rates
2. Fixed Costs
3. Sustainable Funding of Infrastructure:
 - (a) Watermain replacement
 - (b) Sanitary Sewer replacement
4. Regional costs: (a) Regional water (b) Regional Wastewater
5. Automated Meter Reading (AMR) project
6. Forecasting Water Volumes
7. Financial Stability of the Wastewater system
8. Bulk Water Rates

1. 2018 Water and Wastewater Proposed Rates

General Rate Structure

The City's current water and wastewater rate structure is a combination of fixed and volumetric charges. Each customer account is charged a fixed rate for water and

wastewater. In addition, the customer is billed volumetric rates for water and wastewater based on the amount of water used.

Recommended Water and Wastewater Rates

For 2018, staff are proposing an increase to both the water and wastewater fixed and volumetric rates. Staff recommend that effective April 1, 2018, the rate structure for recovering water and wastewater costs be the following:

	2018	2017
Water		
Fixed (annual)	\$156	\$153
Volumetric (per cm)	\$1.224	\$1.207
Wastewater		
Fixed (annual)	\$96	\$93
Volumetric (per cm)	\$1.890	\$1.853

The proposed rates will result in an annual increase to the average ratepayer (at annual consumption levels of 170 cubic metres) of \$15.18 – a 1.98% increase. See Appendix 2 for further details on the calculations.

Description	Amount
Water Rates	\$5.89
Wastewater Rates	\$9.29
Total Increase - \$	\$15.18
Total Increase - %	1.98%

2. The Fixed Charge – Water and Wastewater

In the City's current water and wastewater rate structure the fixed charge is defined to be the cost of the City's annual replacement programs and fixed Regional charges. For each of the systems these costs are calculated to be:

	Water Budget	Wastewater Budget
Improvement program	\$5,500,000	\$2,300,000
Debt Charges	571,022	599,806
Total City Fixed Charges	\$6,071,022	\$2,899,806
Regional Fixed Charges	2,785,953	19,461,660
Total Fixed Costs	\$8,885,759	\$22,361,466

Calculation of Recovery Rates:		
Based on 42,450 customers	\$210	\$527
2018 Proposed Rates	\$156	\$96
2017 Rates	\$153	\$93

As the chart indicates, the calculated fixed component of the City’s rate structure should be \$210 for Water and \$527 for Wastewater. While staff does not propose that the 2018 rates be increased in one year to fully recover these costs, increases over time need to be considered. The increase in the fixed water and wastewater rates in 2018 will result in the recovery of a larger portion of the fixed costs to operate the water and wastewater systems. Due to the increasing cost of construction; especially related to underground services, there will be the need to increase fixed costs just to complete the same level of infrastructure work. Therefore in 2019 there will be an increase in the fixed rate charges in these budgets.

3. Sustainable Funding of Infrastructure

The proposed 2018 Water and Wastewater budget contain the following levels of funding for watermain and sanitary sewer infrastructure replacement:

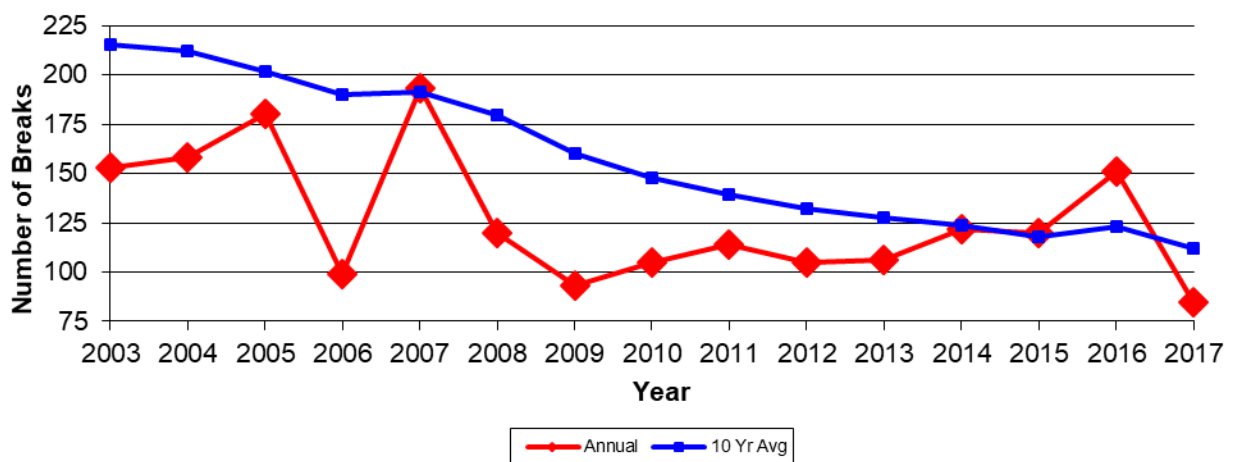
a. Watermain Replacement Program

The total length of watermain under the City’s jurisdiction is approximately 610 kilometers. The estimated replacement value in 2018 dollars is \$1,150 million.

Assuming an average service life of 50 years for the entire system, the annual cost for watermain replacement should be 2% of the total replacement cost of the whole system, or \$23 million to maintain a sustainable watermain distribution system.

An aggressive replacement program is required to reduce the annual number of watermain breaks. The number of watermain breaks can fluctuate significantly from year to year – 2017 saw 85 breaks, 2016 saw 151 breaks, 2015 saw 120 breaks, 2014 saw 122 breaks while in the previous two years the number was slightly above 100.

Watermain Breaks



The proposed 2018 water budget includes \$5,500,000 for the replacement of watermains. Additionally, there is \$782,515 funded in the 2018 capital budget through Federal Gas Tax. The water budget addresses 7.15 kilometers of previously approved projects and the Federal Gas Tax addresses 0.37 kilometres of newly identified replacement watermain. To achieve sustainability, the watermain replacement program should be replacing 12.2 kilometers of watermain annually.

Watermain replacement is prioritized based on a number of criteria with the primary consideration being the previous number of breaks on a particular section. In addition, Council has directed that each year's water budget include an allocation of at least \$750,000 for the replacement of watermains in areas experiencing coloured water. In the 2018 budget, \$3,095,000 is proposed to be spent on replacement of old and deteriorated cast iron watermains which are usually the cause of coloured water in the system.

At present, approximately 53% of the pipes in the watermain system are comprised of relatively new PVC (polyvinylchloride) pipe or other currently approved materials. The remaining 47% is comprised of various other older materials such as cast iron, ductile iron or transite.

Lead water services are replaced if encountered during a new watermain construction project or when repairing a water service leak. The City will replace the portion of the service on public property at the City's expense. As part of the Community Wide Lead Testing Program, the City will replace the public property side of a lead service when a lead exceedance is found or if the property owner replaces the private portion of the lead service line. Lead service lines are replaced with either copper or plastic service lines. The City has replaced approximately 100 metres of lead water services over the last three years.

b. Sanitary Service Replacement Program

The City currently has 570 kilometers of combined and sanitary sewers. The estimated replacement value of these sewers in 2018 dollars is in the order of \$820 million. The proposed 2018 Sanitary Sewer Improvement Program, funded by the wastewater budget is \$2,300,000 and an additional \$975,000 is being funded through the Federal Gas Tax program in the 2018 capital budget.

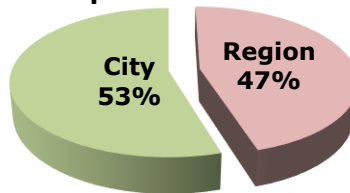
Sewers for replacement and rehabilitation have been selected on a priority basis. These priorities are set principally from the results of CCTV inspection reports. Information from Operations field personnel is also solicited when developing the program.

The combined sewers allow rainwater to enter into the sanitary sewer system. In 2017, the Region supplied the City with 15.2 million cubic metres of potable water and treated 20.8 million cubic metres of wastewater. The City's regional wastewater cost is not only influenced by the amount of water used but also the amount of precipitation the City received in the year.

Although funded from the Capital Budget, the construction of new storm sewers in combined sewer areas reduces the amount of surface water entering the sanitary or combined sewer system. This reduces the amount of rainwater that is treated at the treatment plants in addition to providing relief of potential basement flooding to the immediately adjacent areas as well as the properties upstream and downstream of the new sewers.

4. Regional Costs

Water Budget Summary of Expenditures



The City and Region are each responsible for various aspects of water. The Region is responsible for supply and treatment including all reservoirs and water towers. In general, watermains sixteen inches (400 mm) or larger are a Regional responsibility and the City is responsible for the smaller distribution watermains. There is also a shared responsibility for collection and treatment of wastewater between the City and the Region. The Region is responsible for treatment facilities, pumping stations, sludge disposal and sewers with flows of six cubic feet per second or greater or sewers spanning a municipal boundary. The City is responsible for the remaining wastewater pipelines.

In effect the Region is the service provider to the City, supplying potable water and treatment of wastewater. The cost to provide the service to lower tier municipalities is part of the Region's budget and each municipality is charged its respective portion.

Determination of St. Catharines' share of the Regional Costs

The calculation of each municipality's share is dependent upon the municipality's usage of each system (i.e. cubic metre of water purchased or cubic metre of wastewater treated). This means St. Catharines' share of the total budget will change over time with City water and wastewater flows.

a. Regional Water Rates

The Region charges the lower tier municipalities for the supply of potable water using both a fixed monthly charge and a variable rate per cubic metre. The rates for 2018 (with comparable 2017 rates) are as follows:

Water	2018	2017	% increase (decrease)
Variable rate per cm	\$0.566	\$0.554	2.17%
Fixed Monthly Charge	\$232,163	\$230,489	0.72%

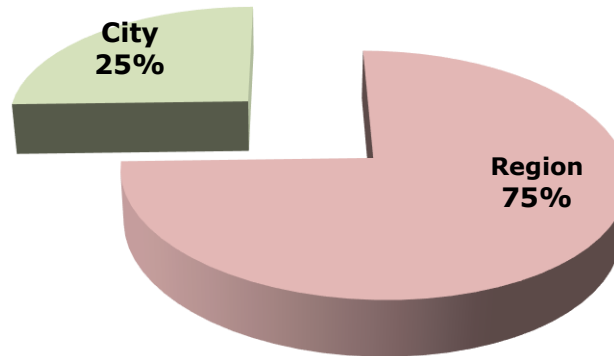
The above rates result in the City's 2018 draft Water budget including Regional costs of \$11,162,753, an increase of \$197,687 (1.80%) from 2017. As \$8,376,800 of these costs are related to the variable rate, this provides some protection to the City should the water consumption decline in 2018. The fixed annual charge of \$2,785,953 will be payable to the Region regardless of City water consumption.

b. Regional Wastewater Rates

The Regional wastewater charges contain no variable rates. The rates for 2018 (with comparable 2017 rates) are as follows:

Wastewater	2018	2017	% decrease
Fixed Monthly Charge	\$1,621,805	\$1,629,895	-0.50%

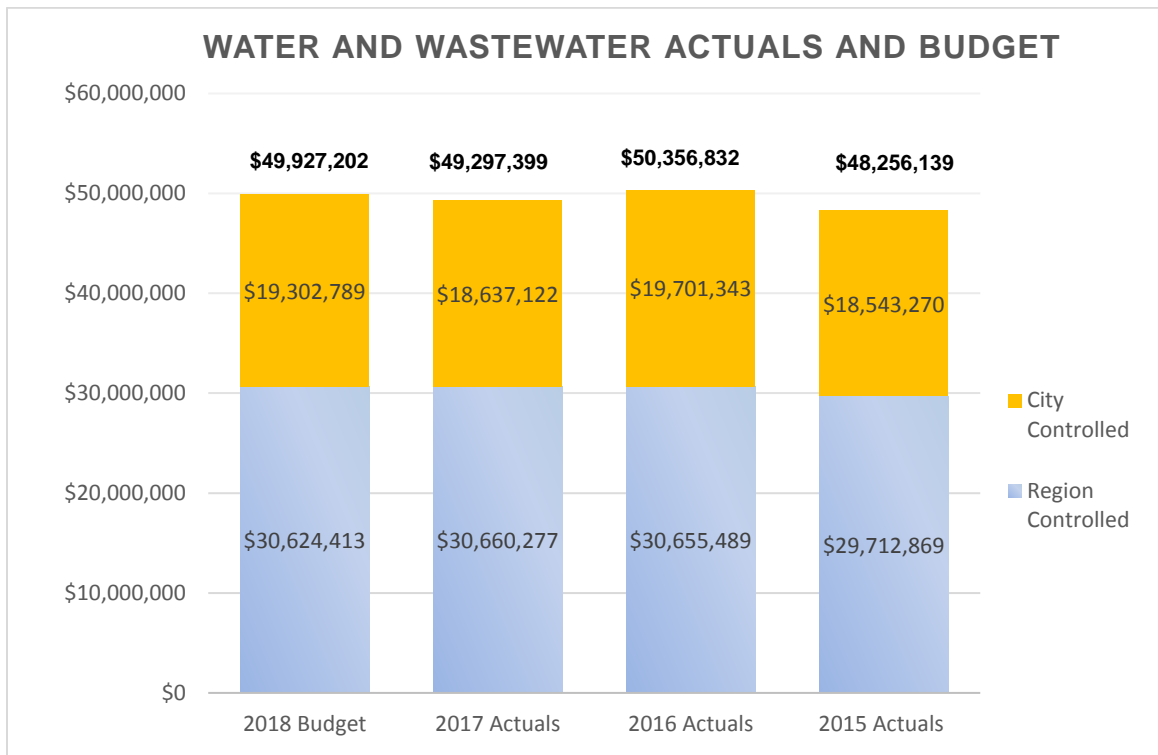
Wastewater Budget Summary of Expenditures



2018 Water and Waste Water Summary of Expenditures

Expenditure	Water		Wastewater	
City Costs	\$6,538,867	27.51%	\$3,643,094	13.93%
Water / Sewer Improvement Program	5,500,000	23.14%	2,300,000	8.80%
City Debentures	571,022	2.40%	599,806	2.29%
Capital Out of Revenue		0.00%	150,000	0.57%
Region	11,162,753	46.95%	19,461,660	74.41%
Total	\$23,772,642	100%	\$26,154,560	100%
Region Controlled Costs	\$11,162,753	46.95%	\$19,461,660	74.41%
City Controlled Costs	12,609,889	53.05%	6,692,900	25.59%
Total	\$23,772,642	100%	\$26,154,560	100%

Looking at the trend in the water and wastewater expenditures over the past four years, the 2018 budget is slightly below the 2017 budget levels. As shown below, the change in the water and wastewater expenses from 2015 to 2018 is 3.46% over this four year period which normalizes to annual increases below inflation.



Details of water and wastewater expenditures are available in Appendix 1.

5. Automated Meter Reading (AMR) Project

The City has been installing new automated water meters in residential properties since August 2014. The City’s AMR program uses wireless technology to automatically collect water consumptions, diagnostic and status data from the City’s water meters and automatically transfers that data to a database for billing, troubleshooting and analyzing.

The battery operated AMR transmitter is wired directly to the water meter inside the home and wirelessly communicates with mobile reading equipment installed in City owned meter reading vehicles. The AMR transmitter sends wireless signals to the mobile reading equipment three times per year currently and operates on Industry Canada licensed 900 MHz spectrum. These transmissions last for less than 1/8th of a second at power levels less than 2 watts.

The benefits associated with AMR technology is the ability to monitor consumption levels on a property-by-property basis, and to use this consumption data to potentially assist property owners with leak detection.

AMR data has the ability to focus on inactive accounts to ensure there is no unauthorized usage. AMR has the ability to store 35 days of data which provides hourly data and assists staff in determining when the consumption occurred. AMR can reduce estimated reads and costs associated with re-billing accounts. Since AMR systems

have very high accuracy and read percentages, the system reduces re-bill costs. An automated system will prove to be a more efficient method for obtaining these reads. Currently the City bills every four months. Changing to monthly billings may make it easier for customers to pay a monthly bill than a larger four month bill and a possible change in the collection process and collection rates. Once the AMR project is complete, staff will be reviewing the options to increase the frequency of billing water accounts. Further reporting will occur prior to any changes in billing frequency. In addition, other costs that would be associated with manual meter reading could be eventually eliminated with automation which may include vehicle costs, cellular phone expenses, maintenance and some general overhead expenses. Further technology upgrades will provide additional efficiencies in billing processed and reduction in postage costs.

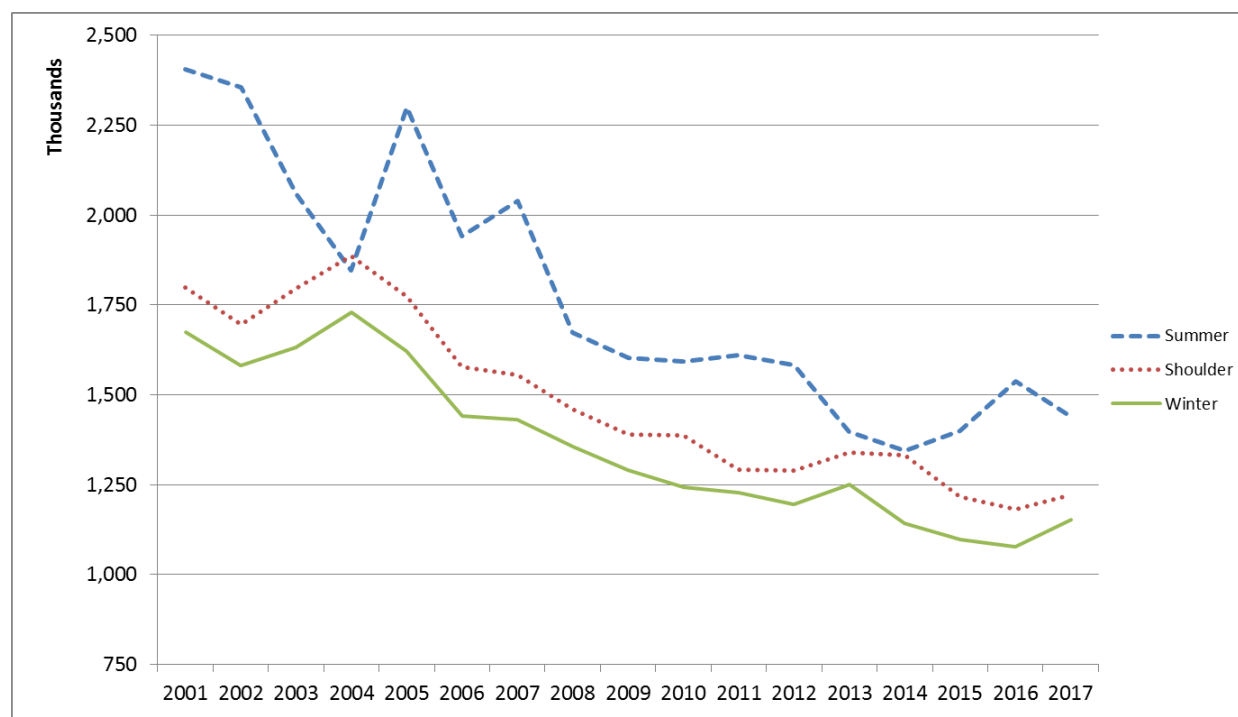
At the start of the program the City had 41,556 residential water meters that were scheduled to be updated. To date, 28,218 water meters have been upgraded to the AMR technology. There will be additional sections completed during 2018. The entire upgrade project is expected to be completed by the end of 2019.

6. Forecasting Water Volumes

An analysis of water purchases over the last 18 years has shown conservation efforts by St. Catharines water customers have resulted in significant reduction in cubic metres of water purchased from the Region. Since 1999 annual water purchases have decreased 45% from 27,310,000 cubic metres annually to 15,258,000 cubic metres in 2017. From 2007 to 2017 alone the decrease was 4.84 million cubic metres (24.1%) Each year staff review past history of water purchase volume and utilize that information to forecast what future volumes will be.

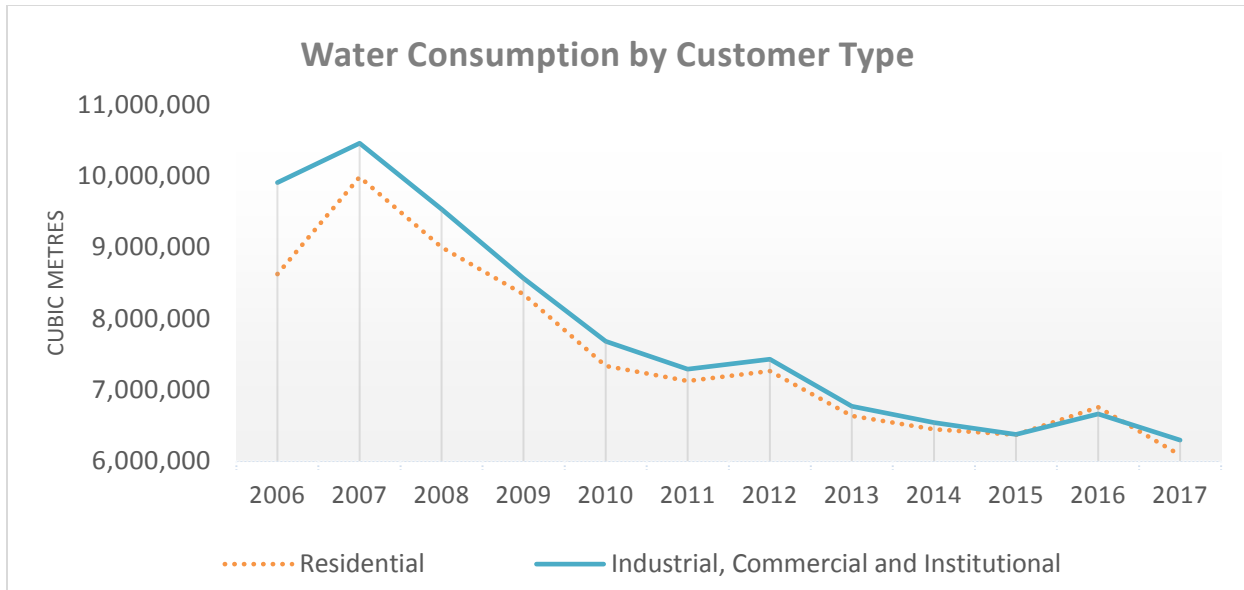
Over the past years there has been concern as to the determination of how much further the volumes can decline. In effect, are we nearing the end of volume decreases, or is there a significant decline still to come? In the process of this estimation, staff analysed the water purchase based on three separate “seasons” of the year: **summer** – June to September; **winter** – November to February; **shoulder months** – March to May and October.

The following graph depicts the decline in purchases during these seasons since 2001:



The chart clearly depicts the average monthly summer consumption (the blue or top line) as the most volatile line. It fluctuates significantly each year. While the volume rebounded in 2016, in 2017 it again declined. The summer monthly consumption is still higher than either of the other “seasons” but is less volatile.

Reviewing 2017 water purchases, it appears that water consumption may be levelling off. In 2017, the City purchased 15.25 million cubic meters and in 2016 purchased 15.18 million cubic meters. While the 2017 purchases were greater than in 2016, this is attributed to a large watermain break, as 2016 was a very dry summer. Staff feel that the estimated purchase for 2018 will be consistent with 2015 levels of 14.8 million cubic meters of water. With the changes to climate, adaptation planning will be needed to manage the risks. Some climate related impacts St. Catharines has already felt include extreme winds / fallen trees (2011), severe rainstorms / basement flooding (2012 and 2014), extreme cold / frozen water services (2015) and extreme dry periods / fire ban (2016). The severity and unpredictability of these vents will be a challenge in the future. As the City moves forward with its Covenant of Mayors Program Requirements Action Plan in 2018 and future years, the impact on the City’s water consumption and potential changes required to annual forecasts will be closely monitored by staff, as there will be financial impacts on the water and wastewater rates.



As shown in the graph above, since 2007 the City has seen a relatively steady decline in consumption (in cubic metres) of both the Residential and Industrial, Commercial and Institutional (ICI) customers. Starting in 2011, ICI sector consumption began to move much closer to the Residential sector until 2015 and 2016 where the ICI transitioned to below the Residential sector. 2017 shows the ICI sector moving slightly above the Residential sector, with both still declining.

7. Financial Stability of the Wastewater System

A significant portion of the costs of the wastewater system are fixed. While the wastewater rates include a fixed portion, the majority of the revenue is collected through a variable rate based on water purchased by the customer.

When the majority of a rate structure consists of a variable rate, periods of declining consumption result in the reduction of the overall revenue. Consequently, the revenue generated does not cover the cost of the system. In the past four years, this trend is changing.

In millions of \$	2017	2016	2015	2014	2013	2012	2011	2010	2009
Revenue	\$26.64	\$27.38	\$25.71	\$25.80	\$24.86	\$25.32	\$23.46	\$22.50	\$20.12
Expenditures	\$25.66	\$26.02	\$25.18	\$25.53	\$25.07	\$25.25	\$24.00	\$23.35	\$21.65
Recovery / (Loss)	<u>\$0.98</u>	<u>\$1.36</u>	<u>\$0.53</u>	<u>\$0.27</u>	<u>(\$0.21)</u>	<u>\$0.07</u>	<u>(\$0.54)</u>	<u>(\$0.85)</u>	<u>(\$1.53)</u>

The positive results the last number of years have assisted in eliminating the accumulated deficit of \$1.87 million at the end of 2015. In effect, the water rates have been subsidizing the operations of the wastewater system. While many of the City's customers have both water and wastewater charges on their bills, there are customers

who do not. As per guidelines from the Province rates should be structured so that both systems maintain their own financial stability through separate rates.

8. Bulk Water Rates

In 2017, Council did not increase the bulk water rates. Historically the City's bulk water rates are two times the water variable rate. During 2017, the City experienced an increase in maintenance costs of its bulk water equipment. Also, there was a slight decline of bulk water sales from 2016 to 2017. It may be the result of the equipment malfunction or the increased rainfall or a combination. Therefore, staff are recommending the bulk water rate be increased from \$2.398 per cubic metre to \$2.448 per cubic metre.

BULK WATER RATES			
	2018	2017	Change
Bulk Water Rate per Cubic Metre	\$2.448	\$2.398	\$0.05
Percentage Increase			2.09%

With the increase in the bulk water rate by \$0.05 per cubic metre, some of the increased maintenance costs incurred in 2017 will be recovered in 2018. Staff will continue to monitor bulk water sales in 2018 for decline of sales due to the increased rate. More details on bulk water and comparison to local and approved municipal comparators is in Appendix 3.

Financial Implications

The proposed 2018 water and wastewater rates result in an increase for both water and wastewater rates. For the average ratepayer (at annual consumption levels of 170 cubic metres) they will pay \$781.38; an increase of \$15.18 or 1.98% over the amount paid in 2017.

Relationship to Strategic Plan

Economic Sustainability will be enhanced through:

- Being an affordable city for young people, families and retired older adults through maintaining water and wastewater rates increase for 2018 at 1.98% which is an increase that is at or below inflation.

Conclusion

Staff recommends that Council approve the 2018 water and wastewater rate increase, which for the average customer with an annual consumption of 170 cubic metres is an increase of 1.98% or \$15.18 over 2017 rates.

Prepared by: M Kreuk, Manager, Budgets and Capital

Submitted/Approved by: K Douglas, Director FMS/City Treasurer

City of St Catharines
Water/Wastewater Budget Summary

	Estimate		2017	Actuals	
	2018	2017		2016	2015
Reserve at Beginning of Year	3,823,237	3,844,722	3,844,722	3,319,840	3,393,467
Revenues	49,703,984	49,218,742	49,275,913	50,881,713	48,182,511
Less: Region expenditures	30,624,413	30,523,811	30,660,277	30,655,488	29,712,869
Net Revenue	19,079,571	18,694,931	18,615,637	20,226,224	18,469,643
City Expenditures					
Water Operating costs	6,538,867	6,532,652	6,500,390	6,687,392	5,977,573
Water Debenture debt	571,022	878,619	878,619	957,099	1,040,785
Water Infrastructure costs	5,500,000	5,625,000	5,038,758	5,430,659	5,188,857
Sewer Operating costs	3,643,094	3,665,405	3,519,601	3,472,586	3,527,865
Sewer Debenture debt	599,806	870,027	870,027	923,547	919,186
Sewer Infrastructure costs	2,450,000	2,135,000	1,829,727	2,230,059	1,889,004
	19,302,789	19,706,703	18,637,122	19,701,342	18,543,269
Annual Surplus/(Deficit)	-223,218	-1,011,772	-21,485	524,882	-73,627
Reserve at End of Year	3,600,019	2,832,950	3,823,237	3,844,722	3,319,840
City total	19,302,789	19,706,703	18,637,122	19,701,342	18,543,269
Region total	30,624,413	30,523,811	30,660,277	30,655,488	29,712,869
	49,927,202	50,230,514	49,297,399	50,356,831	48,256,138
cm - purchased	14,800,000	14,800,000	15,258,218	15,189,384	14,858,461

WATER SYSTEM (515.XXX)

2018 Water Budget Summary

	<u>Dept.</u>	<u>Acct.</u>	<u>Estimate</u>		<u>Actual</u>			
			<u>2018</u>	<u>2017</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	
<u>Operating Expenditures:</u>								
General Administration	FMS	105	1,290,091	1,289,452	1,156,934	1,206,063	1,211,308	
Engineering Overhead	TES	110	1,467,771	1,980,910	1,948,351	1,756,771	1,625,466	
Mains, Valves, Hydrants	TES	115	2,209,110	1,855,920	2,014,559	2,221,978	1,762,058	
Water service lines	TES	120	510,183	406,470	489,406	511,026	607,099	
Meters	TES	125	894,225	844,680	785,795	815,943	718,365	
New Mains, Valves, Hydrants	TES	135	167,487	155,220	113,235	134,413	94,719	
Services Rendered	TES	145	0	0	-7,890	41,198	-41,442	
Total Operating Expenditures:			<u>6,538,867</u>	<u>6,532,652</u>	<u>6,500,390</u>	<u>6,687,392</u>	<u>5,977,573</u>	
<u>Capital Expenditures:</u>								
Water Capital/Revenue	FMS	190	0	125,000	124,000			
Debtenture Debt	FMS	195	571,022	878,619	878,619	957,099	1,040,785	
Water Improvement Program	TES	520	5,500,000	5,500,000	4,914,758	5,430,659	5,188,857	
Total Capital Expenditures:			<u>6,071,022</u>	<u>6,503,619</u>	<u>5,917,377</u>	<u>6,387,758</u>	<u>6,229,642</u>	
Total Water Expenditures			<u>12,609,889</u>	<u>13,036,271</u>	<u>12,417,767</u>	<u>13,075,149</u>	<u>12,207,215</u>	

Note: FMS - Financial Management Services
TES - Transportation and Environmental Services

**City of St Catharines
2018 Water Improvement Program**

Account 520.	<u>Budget 2018</u>
520.'s	
323 Rivercrest Drive P13-067	\$245,000.00
618 Clover/Heywood/Sandy Cove P16-101	315,000.00
620 Glendale Avenue P16-103	515,000.00
621 Park Avenue P16-104	755,000.00
735 Bessborough/Daley/Grosvenor/Kilbourne P17-007	885,000.00
736 Burness Drive P17-008	180,000.00
737 Yale Crescent P17-009	165,000.00
739 Terry Lane P17-068	50,000.00
740 Briarsdale/Glen Morris P17-100	310,000.00
741 Bromley Drive P17-101	30,000.00
744 Lakeshore/Seaway Haulage P17-104	1,150,000.00
745 Nancy/Rosemount P17-105	800,000.00
840 Valves/Hydrants and Services P18-118	50,000.00
841 Design for 2019 Projects P18-119	50,000.00
	<u>\$5,500,000.00</u>

CITY OF ST. CATHARINES - WATER/WASTEWATER BUDGET
ESTIMATE 2018

EXPENDITURE ACCOUNT	2018 BUDGET
310.112 <u>WATER/WASTEWATER EQUIPMENT RESERVE:</u>	
OPENING BALANCE	\$1,616,608
ANNUAL RESERVE PROVISION	305,000
EXPENDITURES,2018	-665,000
CLOSING BALANCE	<u>\$1,256,608</u>
 <u>EXPENDITURE DETAILS</u>	
TWO (2) WATER SERVICE TRACING MACHINES	\$14,000
ONE (1) GPS DATA COLLECTION UNIT	15,000
ONE (1) HYDROSEEDER	10,000
SIX (6) GAS DETECTION METERS	9,000
TWENTY FIVE (25) TWO WAY RADIOS TO COMPLETE DIGITAL MIGRATION	30,000
ONE (1) TENDEM DUMP TRUCK COMPLETE WITH CONTROL CAPABILITY (REPLACE UNIT #151)	274,000
TWO (2) PICKUP TRUCKS (REPLACE UNITS #70 AND 71)	56,000
ONE (1) BACKHOE (REPLACE UNIT# 23)	116,000
THREE (3) CUBE VANS (REPLACE UNITS #145,#146,#147)	<u>141,000</u>
	<u>\$665,000</u>

WASTEWATER SYSTEM

2018 Wastewater Budget Summary

	Dept.	Acct.	Estimate		2017	Actual		
			2018	2017		2016	2015	
Operating Expenditures:								
Sewers - General	TES	730.100	694,303	577,830	636,856	658,138	614,581	
Sewers - Insurance	FMS	730.105	0	0	54,743	95,043	81,751	
FLAP Program	TES	732.115	308,237	302,613	267,211	267,992	462,563	
Lateral Replacement	TES	732.100	711,001	606,912	588,634	576,765	475,541	
New Laterals	TES	732.105	0	0	25,636	-4,053	-16,819	
Drain Clearing	TES	732.110	324,499	241,992	140,281	195,018	227,373	
Overhead	TES	732.190	592,240	785,722	810,478	760,206	705,292	
Pollution Control	TES	735.300	754,450	747,314	676,317	625,274	659,136	
Overhead	TES	735.305	258,364	403,022	319,446	298,204	318,447	
Total Operating Expenditures:			3,643,094	3,665,405	3,519,601	3,472,586	3,527,865	
Capital Expenditures:								
Debt Service	TES	731.195	599,806	870,027	870,027	923,547	919,186	
Sewer Improvement Program	TES	731.100	2,300,000	2,075,000	1,769,727	2,173,059	1,708,004	
Capital Out of Revenue	FMS	735.304	150,000	60,000	60,000	57,000	181,000	
Total Capital Expenditures:			3,049,806	3,005,027	2,699,754	3,153,607	2,808,190	
Total City Wastewater Expenditures			6,692,900	6,670,432	6,219,355	6,626,193	6,336,054	

Note: FMS - Financial Management Services
 TES - Transportation and Environmental Services

**City of St Catharines
2018 Sewer Improvement Program**

Account 731.	<u>Budget 2018</u>
731.'s	
324 Rivercrest Drive P13-067	\$483,000.00
610 Greenwood Ave/Beatrice Street P16-061	42,000.00
613 St George Street P16-063	734,000.00
723 Bessborough/Daley/Grosvenor/Kilbourne P17-007	246,000.00
725 Yale Crescent P17-009	170,000.00
820 2018 Spot Repair Program P18-011	100,000.00
821 2018 Sanitary Sewer Reaming P18-012	25,000.00
822 2018 CCTV Sewer Inspection P18-014	125,000.00
823 Design for 2019 Projects P18-015	25,000.00
824 Master Servicing Study, 2018 ST18-10	350,000.00
	<hr/>
	<u>\$2,300,000.00</u>

WATER, WASTEWATER AND RELATED SERVICE RATES

1. The following rates shall be paid to The Corporation of the City of St. Catharines for the use of water supplied by The Corporation of the City of St. Catharines:

<u>(a) Consumption - Cubic Metres</u> (For each four month billing period)	<u>Current</u>	<u>Proposed</u>
Customer Charge	\$51.00	\$52.00
Consumption Charge - per cubic metre	1.207	1.224
*Note: Large Industrial Users are billed monthly		
Water meter size of 1" or greater will be subject to a water meter equivalency charge when calculating the Customer Charge. Exemption: Single Family Residential classification. See (b) below.		
<u>(b) Meter Equivalency</u>		
Water meter size of 1" or greater will be subject to a water meter equivalency charge when calculating the Customer Charge. Exemption: Single Family Residential classification.		
1" meter = 1.4 meter equivalency units		
1 1/2" meter = 1.8 meter equivalency units		
2" meter = 2.9 meter equivalency units		
3" meter = 11 meter equivalency units		
4" meter = 14 meter equivalency units		
* 6" meter = 21 meter equivalency units		
* >6" meter = 21 meter equivalency units		
* Note: Where a single 6" meter or greater is installed for the purpose of % additional fire protection, the multiplier equivalency shall be discounted to 50%. %		
<u>(c) Flat Rates</u> (For each four month billing period)		
Per Dwelling unit	\$153.00	\$175.00
Note: Where more than 20 units are being constructed, the maximum number of units charged is 20.		
<u>(d) Estimated Billing</u>		
Where consumption and/or Flat Rate does not apply, estimates are based on previous actual readings. In the absence of previous actual readings, amount to be % determined at the discretion of the Treasurer.		
<u>(e) Rates for Services Outside City</u> (For each four month billing period)		
Multiple of Regular Rate	2X	2X
Customer Charge	\$102.00	\$104.00
Consumption Charge - per cubic metre	2.414	2.448
<u>(f) Bulk Water</u> (Key Pad Operated)		
Multiple of Regular Rate	2X	2X
Per cubic metre	\$2.398	\$2.448
<u>(g) Water Under Construction</u>		
First four month period Per sq. ft.	\$0.026	
Per sq. m.	0.282	

	<u>Current</u>	<u>Proposed</u>
Next Flat Rate per dwelling unit for each four month period until meter is installed	\$153.00	\$175.00

If there are extenuating circumstances or if large Industrial/Commercial building, "Next Flat Rate" to be determined at the discretion of the Treasurer.

2. The following rates shall be paid to The Corporation of the City of St. Catharines for the use of water related services supplied by The Corporation of the City of St. Catharines:

(a) METER RENTALS (Annually)

Meter Size

*16mm (5/8") Displacement	\$19.00	
*16mm (5/8")SR II Displacement with ECR	\$35.00	
*16mm (5/8") Accustream/Transmitter	\$40.00	
*16mm (5/8") IPERL/Transmitter	\$45.00	
19mm (3/4") Displacement	\$25.00	
19mm (3/4")SR II Displacement with ECR	\$41.00	
19mm (3/4") Accustream/Transmitter	\$46.00	
19mm (3/4") IPERL/Transmitter	\$50.00	
25mm (1") Displacement	\$29.00	
25mm (1") SR II Displacement with ECR	\$46.00	
25mm (1") Accustream Transmitter	\$51.00	
25mm (1") IPERL/Transmitter	\$55.00	
38mm (1-1/2") Displacement	\$82.00	
38mm (1-1/2") Displacement with ECR	\$115.00	
38mm (1-1/2") Displacement /ECR/ Transmitter	\$120.00	
38mm(1-1/2") Turbine	\$111.00	
38mm(1-1/2") Turbine/Transmitter	\$116.00	
38mm (1 1/2") OMNI C2 Compound	\$122.00	
38mm (1 1/2") OMNI R2 Residential	\$75.00	
38mm (1-1/2") OMNI T2 Turbine	\$96.00	
50mm(2") Displacement	\$92.00	
50mm(2") Displacement with ECR	\$128.00	
50mm(2") Displacement-ECR/Transmitter	\$133.00	
	<u>Current</u>	<u>Proposed</u>
50mm (2") Compound	\$96.00	

50mm (2") Compound/Transmitter	\$101.00
50mm (2") Turbine	\$114.00
50mm (2") Turbine/Transmitter	\$119.00
50mm (2") OMNI C2 Compound	\$150.00
50mm (2") OMNI R2 Residential	\$80.00
50mm (2") OMNI T2 Turbine	\$115.00
75mm (3") Compound	\$418.00
75mm (3") Compound/Transmitter	\$423.00
75mm (3") Turbine	\$375.00
75mm (3") Turbine/Transmitter	\$380.00
75mm (3") OMNI C2 Compound	\$402.00
75mm (3") OMNI T2 Turbine	\$375.00
100mm (4") Compound	\$498.00
100mm (4") Compound/Transmitter	\$503.00
100mm (4") Turbine	\$475.00
100mm (4") Turbine/Transmitter	\$480.00
100mm (4") OMNI C2 Compound	\$488.00
100mm (4") OMNI F2 Fire Assembly	\$798.00
100mm (4") OMNI T2 Turbine	\$475.00
150mm (6") Compound	\$671.00
150mm (6") Compound/Transmitter	\$676.00
150mm (6") Turbine	\$587.00
150mm (6") Turbine/Transmitter	\$592.00
150mm (6") Fire Assembly	\$900.00
150mm (6") Fire Assembly /Transmitter	\$905.00
150mm (6") OMNI C2 Compound	\$671.00
150mm (6") OMNI F2 Fire Assembly	\$980.00

	<u>Current</u>	<u>Proposed</u>
150mm (6") OMNI T2 Turbine	\$587.00	
200mm (8") Fire Assembly	\$1,340.00	
200mm (8") Fire Assembly /Transmitter	\$1,345.00	
200mm (8") Turbine	\$665.00	
200mm (8") Turbine/Transmitter	\$670.00	
200mm (8") OMNI C2 Compound	\$930.00	
200mm (8") OMNI F2 Fire Assembly	\$1,350.00	
200mm (8") OMNI T2 Turbine	\$830.00	
250mm (10") Fire Assembly	\$1,510.00	
250mm (10") Fire Assembly/Transmitter	\$1,515.00	
250mm (10")Turbine	\$900.00	
250mm (10")Turbine/Transmitter	\$905.00	
250mm (10") OMNI C2 Compound	\$1,125.00	
250mm (10")OMNI F2 Fire Assembly	\$1,810.00	
250mm (10") T2 OMNI Turbine	\$1,000.00	

* NOTE: No charge for 16mm (5/8") meter unless installed outside the City.

Where meter type consists of two meters combined, one rental rate is applicable, based on the predominant use of the meter.

(a)(i) METER PITS (CHAMBER) RENTALS (Annually)

<u>Meter Size</u>		
16mm (5/8")	\$56.00	\$63.00
19mm (3/4")	\$57.00	\$64.00
25mm (1")	\$64.00	\$71.00
38mm (1-1/2")	\$174.00	\$181.00
50mm (2")	\$186.00	\$193.00
75mm (3")	Actual Cost	
100mm (4")	Actual Cost	
150mm (6")	Actual Cost	
200mm (8")	Actual Cost	
250mm (10")	Actual Cost	

	<u>Current</u>	<u>Proposed</u>
3. The following rates shall be paid to the Corporation of the City of St. Catharines for the wastewater system and services as outlined herein:		
(a) <u>Wastewater Fees</u>		
Sewer Replacement Program	\$31.00	\$32.00
Wastewater charges – per cubic metre	1.853	1.890
Water meter size of 1" or greater will be subject to a water meter equivalency charge when calculating the Customer Charge. Exemption: Single Family Residential classification. See (b) below.		
(b) <u>Meter Equivalency</u>		
Water meter size of 1" or greater will be subject to a water meter equivalency charge when calculating the Customer Charge. Exemption: Single Family Residential classification.		
1" meter = 1.4 meter equivalency units		
1 1/2" meter = 1.8 meter equivalency units		
2" meter = 2.9 meter equivalency units		
3" meter = 11 meter equivalency units		
4" meter = 14 meter equivalency units		
6" meter = 21 meter equivalency units		
>6" meter = 21 meter equivalency units		
Note: Where a single 6" meter or greater is installed for the purpose of additional fire protection, the multiplier equivalency shall be discounted to 50%.		
(c) <u>Flat Rates</u> (For each four month billing period)		
Per Dwelling unit	\$200.00	\$225.00
(d) <u>Wastewater Under Construction</u>		
First four month period		
Next Flat Rate per dwelling unit for each four month period until meter is installed	\$200.00	\$225.00
Note: Where more than 20 units are under construction, the maximum number of units charged is 20.		
If there are extenuating circumstances or if large Industrial/Commercial building, "Next Flat Rate" to be determined at the discretion of the Treasurer.		
4. <u>Unauthorized Use of Water</u>		
(a) Rate when bypass valve is opened without Authorization or any other unauthorized use of water or determination that water provided has not passed through the meter:		
Two (2) times the average of last three representative bills.	2X	
If not applicable, estimate to be determined at the discretion of the Treasurer. (For each four month billing period)		
(b) Where property has operated a grow-op, amount is three (3) times the total Flat Rate per dwelling unit as outlined in Sections 1 and 3 (For each four month billing period)	1,050.00	\$1,200.00

	<u>Current</u>	<u>Proposed</u>
5. Miscellaneous		
(a) <u>Meter Relocation</u> to a more appropriate position to facilitate reading and/or maintenance:		
When requested by homeowner, equivalent to applicable Water Service Call as defined in Rates and Fees.		
When determined by City Engineer, amount charged at the discretion of the Treasurer		
(b) Installation of Automated Meter Reading (AMR) apparatus when performed not in accordance with scheduled deployment :		
When requested by homeowner	\$350.00	
When determined by City Engineer, amount charged at the discretion of the Treasurer		
Customer non compliance with AMR installation	\$500.00	
(c) <u>Late Payment Penalty</u>		
A penalty for late payment of 1.5% per month is added the day following the due date and the first day of each month thereafter.		
(d) Water Certificate - Move to Rates and Fees for 2019	\$40.85	\$41.65
(e) The rates set out above shall be deemed to have become effective on all accounts with Billing periods ending on or after April 1, 2018 .		

* NOTE: METRIC CONVERSION: 1 cubic metre (CM) equals 220 gallons or 1,000 litres

*bolded script = proposed changes for 2018

City St. Catharines
Water/Wastewater Budget
Annual Bill Change Comparison

	<u>New Rates</u>	<u>Old Rates</u>	<u>Change</u>	
			<u>\$</u>	<u>%</u>
<u>Consumption</u>				
Normal Consumption	170	170		
	<u>170</u>	<u>170</u>	<u>0</u>	<u>0.00%</u>
<u>Water - Retail Rate</u>				
Rate per billing period (4 months)	\$52.00	\$51.00		
Fixed Fee	\$156.00	\$153.00	3.00	1.96%
Consumption Rate per CM	\$1.224	\$1.207		
Consumption Fee	\$208.08	\$205.19	2.89	1.41%
Total Water	<u>\$364.08</u>	<u>\$358.19</u>	<u>\$5.89</u>	<u>1.64%</u>
<u>Wastewater - Retail Rate</u>				
Rate per billing period (4 months)	\$32.00	\$31.00		
Fixed Fee	\$96.00	\$93.00	3.00	3.23%
Consumption Rate per CM	\$1.890	\$1.853		
Consumption Fee	\$321.30	\$315.01	6.29	2.00%
Total Wastewater	<u>\$417.30</u>	<u>\$408.01</u>	<u>\$9.29</u>	<u>2.28%</u>
<u>Total Water and Wastewater Bill</u>	<u>\$781.38</u>	<u>\$766.20</u>	<u>\$15.18</u>	<u>1.98%</u>
Fixed Component	\$252.00	\$246.00		
Variable Component	<u>\$529.38</u>	<u>\$520.20</u>		
	<u>\$781.38</u>	<u>\$766.20</u>		
Fixed Percentage	32.25%	32.11%		
Variable Percentage	<u>67.75%</u>	<u>67.89%</u>		
	<u>100.00%</u>	<u>100.00%</u>		

History of "Analysis of Average Increase" - per annual budget presentations

	<u>City</u>	<u>Region</u>	<u>Cons</u>	<u>Remove Tax Sup</u>	<u>Total</u>	<u>Stated % Increase</u>
July 1, 2009	(10.70)	26.75	69.55	21.40	107.00	16%
April 1, 2010	4.00	24.01	26.44		54.45	7%
April 1, 2011	2.71	6.13	28.96		37.80	5.32%
April 1, 2012	4.44	16.53	19.23		40.20	5.38%
April 1, 2013					20.40	2.59%
April 1, 2014					20.00	2.47%
April 1, 2015					12.22	1.63%
April 1, 2016					0.00	0.00%
April 1, 2017					15.09	1.98%
April 1, 2018					15.18	1.98%

APPENDIX 3 – BULK WATER DETAILS

Table 1 – Approved Municipal Comparator Bulk Water Rates

Municipal Comparators							
Single Tier	Rate M3	Monthly Charges	Other Charges	Lower Tier	Rate M3	Monthly Charges	Other Charges
Barrie	\$3.931	N/A		Cambridge	\$1.934	N/A	\$50 Lost Card Charge
Guelph	\$3.31	N/A	\$250 Key Deposit/\$100 for Additional Key	Kitchener	\$2.3291	N/A	15% Admin Fee Applied To Billing
Kingston	\$1.9633	N/A	1st Card Free \$25.00 Additional	Niagara Falls	\$1.200	N/A	\$15.00 Key Deposit
Thunder Bay	\$3.630	N/A	\$25.00 Lost Card Charge	Oshawa	\$3.000	\$52.10	\$210.00 Key Deposit / \$123.40 Yearly Admin Fee
Windsor	\$1.960	N/A		Waterloo	\$1.0446	N/A	

The average comparator cost for bulk water is \$ 2.43

Table 2 – Local Area Municipalities Bulk Water Rates

Lower Tier Region	Rate M3	Monthly Charges	Other Charges
West Lincoln	\$1.58	N/A	\$250.00 Deposit
Pelham	\$1.486	\$50.61	
Lincoln	\$2.102	N/A	\$100.00 Deposit
Fort Erie	\$1.510	N/A	1 st Key Fob Free \$29.50 Replacement
Welland	\$1.34	\$100.00	\$150.00 Deposit
St. Catharines	\$2.398	N/A	One Time Admin Fee \$30.00

The City of St. Catharines bulk water rates are similar to the average comparator rates and the highest rate of the Local Area Municipalities. In 2017, the City of St. Catharines did not increase its bulk water rate. It remained at the 2016 level of \$2.398 per Cubic Meter.

The City currently has 115 active bulk water users. The total consumption purchased in 2017 was 75,346 m³ or \$180,679.71. As shown in the Table 3 below, the last several years of bulk water sales have fluctuated from a low of 49,337 cubic metres in 2013 to a high of 89,592 cubic metres in 2016.

Table 3 – History of St. Catharines Bulk Water Sales

Bulk Water Sales Consumption in Cubic Metres					
2012	2013	2014	2015	2016	2017
64,913	49,337	54,810	74,075	89,592	75,346

When this information is compared to the City’s water purchase history for the summer season, which is the most volatile period, 2013 and 2014 were lower purchase years when compared to 2012. The summer of 2016 was a higher purchase period compared to 2015 and 2017. Therefore, there is some correlation between summer purchase trends and bulk water sales.

In addition, during 2017 the City experienced a number of issues with the pulse register on the meter and the Act- Pak unit that converts the pulses from the register into cubic meters. The drop in consumption for 2017 could also be the result of an under reporting issue. The City did incur additional maintenance costs for the Bulk Water during 2017. Annual maintenance costs for Bulk Water are shown in Table 4 below.

Table 4 – Bulk Water Annual Maintenance Costs

2012	2013	2014	2015	2016	2017
\$140.00	\$603.00	\$3,828.00	\$6,977.00	\$854.00	\$8,867.02

Based on the increase in costs to maintain the Bulk Water system and the fact that the City did not increase Bulk Water Rates in 2017, staff are recommending that the City increase its Bulk Water Rate in 2018 to twice the water variable rate to \$2.448 from \$2.398.

Table 5 – 2018 Bulk Water Rate

	2018	2017	Change
Bulk Water Rate per Cubic Metre	\$2.448	\$2.398	\$0.05
Percentage			2.09%