



Corporate Report

Report from Financial Management Services, Accounting

Date of Report: February 20, 2015 **Date of Meeting:** March 9, 2015

Report Number: **File:** 18.45.252

Subject: 2015 Water and Wastewater Budget and Associated Rates

Recommendation

That the report from the Financial Management Services Department – Accounting dated February 20, 2015 regarding the 2015 Water and Wastewater Budget and Associated Rates be referred to City Council for consideration after the Public Meeting scheduled for March 23, 2015 for which notice will be duly given.

Staff Recommendation

That the 2015 Water and Wastewater Budget in Appendix “1a” of the report from the Financial Management Services Department, Accounting dated February 20, 2015 be approved; 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 2015 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) Rate Structure Review
- 8) Financial Stability of the Wastewater system

1) 2015 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 for 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 2015, staff is proposing that there be no increases to the water rates, neither fixed or variable rates. As a result of the need to provide financial stability to the water/wastewater system, staff recommend that effective April 1, 2015, the rate structure for recovering water and wastewater costs be the following:

	2014	2015
Water		
Fixed (annual)	\$150	\$150
Volumetric (per cm)	\$1.199	\$1.199
Wastewater		
Fixed (annual)	\$84	\$87
Volumetric (per cm)	\$1.773	\$1.826

The proposed rates will result in an annual increase to the average ratepayer (at annual consumption levels of 174 cubic metres) of \$12.22 – a 1.63% increase. For further details on the calculations, see the Appendix “1a”.

Description	Amount
Water Rates	\$0.00
Wastewater Rates	\$12.22
Total Increase - \$	\$12.22
Total Increase - %	1.63%

2) The Fixed Charge – Water and Wastewater

In the City’s current water and wastewater rate structure the fixed charge is defined to be 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	\$2,075,000
Debt Charges	1,040,785	919,186
Total City Fixed Charges	\$6,540,785	\$2,994,186
Regional Fixed Charges	2,893,550	19,724,358
Total Fixed Costs	\$9,434,335	\$22,718,544
Calculation of Recovery Rates		
Based on 42,450 customers	\$223	\$536
2015 Proposed Rates	\$150	\$87
2014 Rates	\$150	\$84

As the chart indicates, the calculated fixed component of the City's rate structure should be \$223 for Water and \$536 Wastewater. While staff does not propose that the 2015 fixed rates be increased in one year to fully recover these costs, increases over time are necessary.

3) Sustainable Funding of Infrastructure

The proposed 2015 Water and Wastewater budgets contain the following levels funding for watermain and sanitary sewer infrastructure replacement:

a) Watermain Replacement Program

The total length of watermain under the City's jurisdiction is approximately 615 km. The estimated replacement value in 2015 dollars is \$472,000,000.

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 \$9.5 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 – 2014 saw 122 breaks while in previous two years the number was slightly above 100.

The proposed 2015 water budget includes \$5,500,000 for the replacement of watermains. The 2015 program will replace approximately 5.1 km of watermain and allows for the construction of approximately 0.27 km of new watermain section. To achieve sustainability, the watermain replacement program should be replacing 12.3 km of watermain annually at a cost of \$9.5 million.

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 problems.

In 2015, \$4,933,000 is proposed to be spent on replacement of old and deteriorated cast iron watermains which are usually the cause of coloured in the system. Other factors used to prioritize the program include upgrading undersized mains and installing new mains to fill in "missing links" to improve the system integrity and increase fire flow protection. Co-ordination with other proposed road or sewer work can also accelerate the replacement of certain mains.

b) Sanitary Sewer Replacement Program

The City currently has 569 km of combined and sanitary sewers. The estimated replacement value of these sewers in 2015 dollars is \$363,700,000. The proposed 2015 Sewer Improvement Program amounts to \$2,075,000. The budget allows for the replacement or rehabilitation of approximately 2,380 lineal metres of sanitary sewer.

The combined sewers allow rainwater to enter into the sanitary sewer system. In 2014, the Region supplied the City with approximately 15.2 million cubic metres of potable water and treated 21.9 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 receives in the year.

4) Regional costs

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 their 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 our water and wastewater flows.

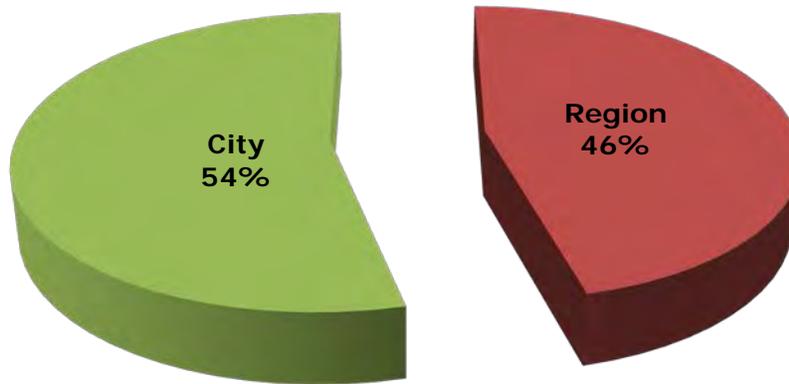
a) Regional Water Rates

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 2015 (with comparable 2014 rates) are as follows:

Water	2015	2014	% increase (decrease)
Variable rate per cm	\$0.537	\$0.537	0.00%
Fixed Monthly Charge	\$241,129	\$244,042	(1.19%)

The above rates result in the City's 2015 draft Water budget including Regional costs of \$10,841,150, a decrease of \$196,054 (1.77%) from 2014. As \$7,947,600 of these costs are related to the variable rate, this provides some protection to the City should our water consumption decline once again in 2015. The fixed annual charge of \$2,893,550 will be payable to the Region regardless of our water consumption.

Water Budget Summary of Expenditures

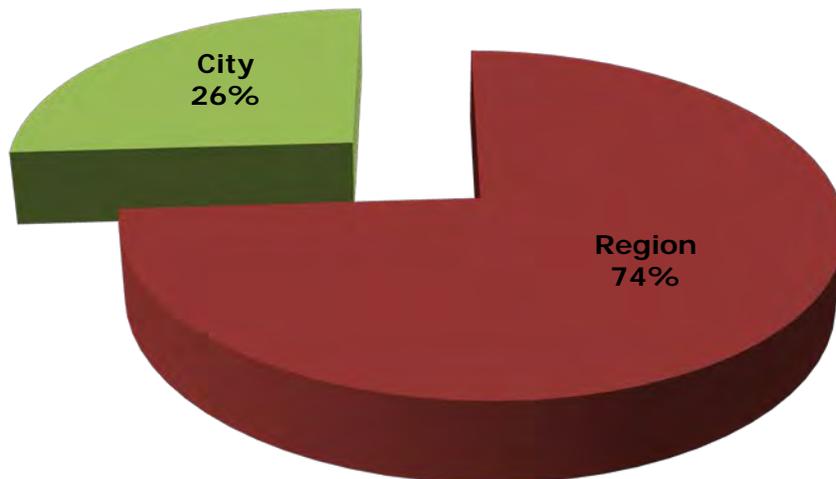


b) Regional Wastewater Rates

The Regional wastewater charges contain no variable rates. The rates for 2015 (with comparable 2014 rates) are as follows:

Wastewater	2015	2014	% increase
Fixed Monthly Charge	\$1,643,697	\$1,621,147	1.39%

Wastewater Budget Summary of Expenditures



2015 Water and Waste Water Summary of Expenditures

Expenditure	Water		Wastewater	
City Costs	\$6,144,932	26.12%	\$3,585,602	13.53%
Water/Sewer Improvement Program	5,500,000	23.38%	2,075,000	7.83%
City Debentures	1,040,785	4.42%	919,186	3.47%
Capital Out of Revenue			195,000	0.74%
Region	10,841,150	46.08%	19,724,358	74.43%
Total	\$23,526,867	100%	\$26,499,146	100%
Region Controlled Costs	\$10,841,150	46.08%	\$19,724,358	74.43%
City Controlled Costs	12,685,717	53.92%	6,774,788	25.57%
Total	\$23,526,867	100%	\$26,106,592	100%

5) Automated Meter Reading Project

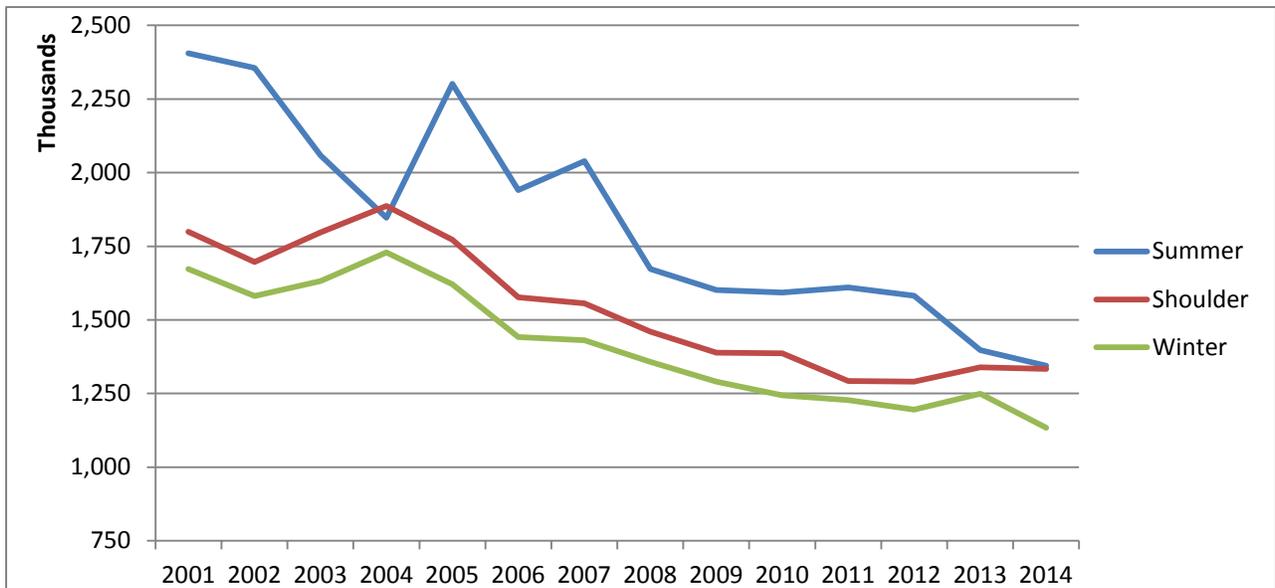
Starting in August 2014, the City rolled out a new automated water meter reading program across St. Catharines. The new readers transmit water usage information to the City's billing system which makes it easier for residents and staff to regularly gather accurate information. Details of this project are provided in Appendix "1b."

6) Forecasting Water Volumes

An analysis of water purchases over the last 16 years has shown conservation efforts by St Catharines water customers have resulted in a significant reduction in cubic metres of water purchased from the Region. Since 1999 annual water purchases have decreased 45% from 27,599,000 cubic metres annually to 15,247,000 cubic metres in 2014. From 2007 to 2014 alone the decrease was 4.85 million cubic metres (24.7%). Each year staff review past history of water purchase volume and utilize that information to forecast what future volumes will be.

Of particular concern is 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 purchased 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. However, this fluctuation appears to have declined in recent years. The summer monthly consumption is still higher than either of the other two “seasons” but is no longer as volatile. The summers of 2009, 2010, 2011 and 2013 were some of the more rainy summers in recent history. However, when the hot dry summer of 2012 occurred, the consumption did not rebound. Rather, it continued to decline. The winter and “shoulder” seasons show consumption patterns that move fairly consistently together, with the shoulder months slightly higher. The 2013 winter shows a slight increase before continuing the trend downwards in 2014.

This increase is attributed to a large watermain break in January, 2013. Reviewing these trends, staff are of the opinion that consumption volumes will still continue to decline. The 2014 water purchases were 15,247,533 cm. Staff expect the purchases will reach a low of 14,800,000 cm in 2015.

7) Rate Structure Review

At the March 31, 2014 Council meeting, a motion was approved from Councillor Siscoe requesting a report, prior to budget, on the water/wastewater fixed costs for multi-residential dwellings.

With respect to the water and wastewater rates, staff continue to review the structure to ensure these four objectives are met: financial viability, equity and fairness, environmental sustainability, and clarity and ease of understanding. Specifically, in the last year staff has focused efforts on equitable distribution of the costs of running the system. The details of this analysis are provided in Appendix 1b.

8) 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 overall revenue. Consequently, the revenue generated does not cover the costs of the system. With the exception of 2012, this has been the situation in the City's wastewater system since 2008.

The net results by year are as follows:

In millions of \$	2014	2013	2012	2011	2010	2009
Revenue	\$25.795	\$24.863	\$25.317	\$23.462	\$22.501	\$20.118
Expenditures	\$25.533	\$25.074	\$25.251	\$23.999	\$23.349	\$21.653
Recovery/(Loss)	\$0.262	(\$0.211)	\$0.066	(\$0.537)	(\$0.848)	(\$1.535)

As a result, the wastewater system currently has an accumulated deficit of \$2.4 million. In effect, the water rates have been subsidizing the operations of the wastewater system. While many of our customers have both water and wastewater charges on their bills, there are customers that do not.

As per guidelines from the Province rates should be structured so that both systems maintain their own financial stability through separate rates, it is necessary for our rates to be structured to eliminate this deficit. This will be achieved over time by focusing rate adjustments on the wastewater rates.

To eliminate this deficit in 2015 would require a significant increase in wastewater rates. Therefore, staff are recommending that this deficit be addressed over the next 5 to 10 years. Where possible, the increase in wastewater rates will be coupled with smaller water rates increases, thereby adjusting the rates so that wastewater rates fully fund the wastewater system.

Financial Implications

The proposed 2015 water and wastewater rates result in no increase to water rates. For the average ratepayer (at annual consumption levels of 174 cubic metres) an increase of \$12.22 in wastewater rates is proposed. This change in rates will serve to increase the financial stability of the wastewater system and continue the process to reduce the reliance of the wastewater system on the water rates.

Prepared by: Kristine Douglas, Director FMS

Approved by: Shelley Chemnitz, Commissioner Corporate Services

City of St Catharines
Water/Wastewater Budget Summary

	Estimate		Actuals		
	2015	2014	2014	2013	2012
Reserve at Beginning of Year	<u>3,393,467</u>	<u>2,796,556</u>	<u>2,796,556</u>	<u>2,735,232</u>	<u>795,828</u>
Revenues	49,286,296	49,449,506	48,734,548	48,148,797	50,100,167
Less: Region expenditures	<u>30,565,508</u>	<u>30,490,968</u>	<u>30,081,414</u>	<u>30,725,901</u>	<u>30,641,362</u>
Net Revenue	<u>18,720,788</u>	<u>18,958,538</u>	<u>18,653,134</u>	<u>17,422,896</u>	<u>19,458,805</u>
City Expenditures					
Water Operating costs	6,144,932	6,110,499	5,918,893	5,690,541	5,240,869
Water Debenture debt	1,040,785	1,073,846	1,076,261	1,052,872	1,018,001
Water Infrastructure costs	5,500,000	5,500,000	4,492,937	4,770,773	4,943,521
Sewer Operating costs	3,585,602	3,551,771	3,612,558	3,282,557	3,472,484
Sewer Debenture debt	919,186	904,557	906,166	992,731	937,254
Sewer Infrastructure costs	<u>2,270,000</u>	<u>2,196,500</u>	<u>2,049,408</u>	<u>1,572,098</u>	<u>1,907,272</u>
	<u>19,460,505</u>	<u>19,337,173</u>	<u>18,056,223</u>	<u>17,361,572</u>	<u>17,519,401</u>
Annual Surplus/(Deficit)	<u>-739,718</u>	<u>-378,635</u>	<u>596,911</u>	<u>61,324</u>	<u>1,939,404</u>
Reserve at End of Year	<u>2,653,749</u>	<u>2,417,921</u>	<u>3,393,467</u>	<u>2,796,556</u>	<u>2,735,232</u>
City total	19,460,505	19,337,173	18,056,223	17,361,572	17,519,401
Region total	<u>30,565,508</u>	<u>30,490,968</u>	<u>30,081,414</u>	<u>30,725,901</u>	<u>30,641,362</u>
	<u>50,026,013</u>	<u>49,828,141</u>	<u>48,137,637</u>	<u>48,087,473</u>	<u>48,160,763</u>

WATER SYSTEM (515.XXX)

2015 Water Budget Summary

	<u>Dept.</u>	<u>Acct.</u>	<u>Estimate</u>		<u>Actual</u>		
			<u>2015</u>	<u>2014</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
<u>Operating Expenditures:</u>							
General Administration	FMS	105	1,340,000	1,340,817	1,241,942	1,279,464	1,234,288
Engineering Overhead	TES	110	1,672,982	1,652,122	1,681,408	1,584,797	1,636,237
Mains, Valves, Hydrants	TES	115	1,805,040	1,736,670	1,817,791	1,775,543	1,468,224
Water service lines	TES	120	393,080	416,580	430,229	387,668	374,681
Meters	TES	125	839,630	870,110	680,905	620,291	496,056
New Mains, Valves, Hydrants	TES	135	94,200	94,200	72,004	63,386	53,880
Services Rendered	TES	145	0	0	-5,386	-20,608	-22,497
Total Operating Expenditures:			<u>6,144,932</u>	<u>6,110,499</u>	<u>5,918,893</u>	<u>5,690,541</u>	<u>5,240,869</u>
<u>Capital Expenditures:</u>							
Water Capital/Revenue	FMS	190	0	0	0	0	0
Debtenture Debt	FMS	195	1,040,785	1,073,846	1,076,261	1,052,872	1,018,001
Water Improvement Program	TES	520	5,500,000	5,500,000	4,492,937	4,770,773	4,943,521
Total Capital Expenditures:			<u>6,540,785</u>	<u>6,573,846</u>	<u>5,569,198</u>	<u>5,823,645</u>	<u>5,961,522</u>
Total Water Expenditures			<u>12,685,717</u>	<u>12,684,345</u>	<u>11,488,091</u>	<u>11,514,186</u>	<u>11,202,391</u>

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

**City of St Catharines
2015 Water Improvement Program**

Account 520.	<u>Budget 2015</u>
520.'s	
434 Lakeshore Road RN14-05	\$312,000.00
520 Catherine Street P14-001	448,000.00
521 Power Glen Watermain Reconnection RN14-08	65,000.00
522 Ontario Street P15-001	636,000.00
523 Clarendon/Ferndale/Lonsdale P15-002	266,000.00
524 Tunis/Valley P15-003	163,000.00
525 Lowell Avenue P15-065	548,000.00
526 Allanburg/Riverview P15-100	554,000.00
527 Broadway/Lakeshore Rd P15-101	1,000,000.00
528 Geneva Street P15-102	725,000.00
529 Lake/Russell P15-103	683,000.00
530 Valves/Hydrants/Services P15-118	50,000.00
531 Design for 2016 Projects P15-119	50,000.00
	<hr/>
	<u>\$5,500,000.00</u>

CITY OF ST. CATHARINES - WATER/WASTEWATER BUDGET
ESTIMATE 2015

EXPENDITURE ACCOUNT	2015 BUDGET
310.112 <u>WATER/WASTEWATER EQUIPMENT RESERVE:</u>	
OPENING BALANCE	\$1,217,523
ANNUAL RESERVE PROVISION	205,000
EXPENDITURES,2015	-275,000
CLOSING BALANCE	<u>\$1,147,523</u>
<u>EXPENDITURE DETAILS</u>	
ONE (1) INFRAMAP GIS/GPS HARDWARE AND SOFTWARE	50,000
ONE (1) DUMP TRUCK COMPLETE WITH PLOW, WING, DIRECT LIQUID APPLICATION, AND PREWETTING CAPABILITY PLUS AVL/GPS (REPLACE UNIT #104)	225,000
	<u>275,000</u>

WASTEWATER SYSTEM

2015 Wastewater Budget Summary

	<u>Dept.</u>	<u>Acct.</u>	<u>Estimate</u>		<u>Actual</u>		
			<u>2015</u>	<u>2014</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
<u>Operating Expenditures:</u>							
Sewers - General	TES	730.100	573,230	512,440	646,823	513,917	571,649
Sewers - Insurance	FMS	730.105	0	0	141,734	86,100	55,195
FLAP Program	TES	732.115	290,283	213,008	456,530	264,159	163,257
Lateral Replacement	TES	732.100	597,690	597,090	518,603	556,901	610,509
New Laterals	TES	732.105	0	0	-8,950	-26,876	-8,145
Drain Clearing	TES	732.110	233,310	185,630	261,771	144,555	157,238
Overhead	TES	732.190	749,385	914,206	674,438	788,711	955,980
Pollution Control	TES	735.300	733,581	739,357	610,871	628,036	585,993
Overhead	TES	735.305	408,123	390,040	310,738	327,054	380,808
Total Operating Expenditures:			<u>3,585,602</u>	<u>3,551,771</u>	<u>3,612,558</u>	<u>3,282,557</u>	<u>3,472,484</u>
Debtenture Debt	TES	731.195	919,186	904,557	906,166	992,731	937,254
Sewer Improvement Program	TES	731.100	2,075,000	2,051,500	1,904,408	1,514,098	1,907,272
Capital Out of Revenue	FMS	735.304	195,000	145,000	145,000	58,000	0
Total Capital Expenditures:			<u>3,189,186</u>	<u>3,101,057</u>	<u>2,955,574</u>	<u>2,564,829</u>	<u>2,844,526</u>
Total City Wastewater Expenditures			<u>6,774,788</u>	<u>6,652,828</u>	<u>6,568,132</u>	<u>5,847,386</u>	<u>6,317,010</u>

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

**City of St Catharines
2015 Sewer Improvement Program**

Account 731.	Budget 2015
731.'s	
510 Lowell Avenue P15-065	\$605,500.00
511 Pelham Road P15-xxx	271,500.00
512 Ontario Street P15-001	485,000.00
513 2015 Sewer Spot Repair Program P15-011	100,000.00
514 2015 Sanitary Sewer Reaming Program P15-012	25,000.00
515 Design 2016 Sanitary Sewer Projects P15-015	20,000.00
516 Clarendon/Ferndale/Lonsdale/Thornton P15-002	50,000.00
517 Valley Road P15-xxx	740,000.00
517 Valley Road - external funding	(222,000.00)
	<u>\$2,075,000.00</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	\$50.00	\$50.00
Consumption Charge - per cubic metre	1.199	1.199
*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	\$150.00	
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	
Customer Charge	\$100.00	
Consumption Charge - per cubic metre	2.398	
<u>(f) Bulk Water</u> (Key Pad Operated)		
Multiple of Regular Rate	2X	
Per cubic metre	\$2.398	
<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	\$150.00	
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) <u>METER RENTALS</u> (Annually)		
<u>Meter Size</u>		
*16mm (5/8") Displacement		\$19.00
*16mm (5/8") Displacement with ECR		\$35.00
*16mm (5/8") Displacement-ECR/Transmitter		\$40.00
19mm (3/4") Displacement		\$25.00
19mm (3/4") Displacement with ECR		\$41.00
19mm (3/4") Displacement-ECR/Transmitter		\$46.00
25mm (1") Displacement		\$29.00
25mm (1") Displacement with ECR		\$46.00
25mm (1") Displacement-ECR/Transmitter		\$51.00
38mm (1-1/2") Displacement		\$82.00
38mm(1-1/2") Turbine		\$111.00
38mm (1-1/2") Displacement with ECR		\$115.00
38mm (1-1/2") Displacement-ECR/Transmitter		\$120.00
38mm (1-1/2") OMNI T2 Turbine		\$96.00
38mm (1 1/2") OMNI C2 Compound		\$115.00
50mm(2") Displacement		\$92.00
50mm(2") Displacement with ECR		\$128.00
50mm(2") Displacement-ECR/Transmitter		\$133.00
50mm (2") Turbine		\$114.00
50mm (2") Turbine/Transmitter		\$119.00
50mm (2") Compound		\$96.00
50mm (2") Compound/Transmitter		\$101.00
50mm (2") OMNI T2 Turbine		\$96.00

	<u>Current</u>	<u>Proposed</u>
50mm (2") OMNI T2 Turbine/Transmitter	\$101.00	
50mm (2") OMNI C2 Compound	\$128.00	
50mm (2") OMNI C2 Compound/Transmitter	\$133.00	
75mm (3") Turbine	\$375.00	
75mm (3") Turbine/Transmitter	\$380.00	
75mm (3") Compound	\$418.00	
75mm (3") Compound/Transmitter	\$423.00	
75mm (3") OMNI T2 Turbine	\$375.00	
75mm (3") OMNI T2 Turbine/Transmitter	\$380.00	
75mm (3") OMNI C2 Compound	\$402.00	
75mm (3") OMNI C2 Compound/Transmitter	\$407.00	
100mm (4") Turbine	\$475.00	
100mm (4") Turbine/Transmitter	\$480.00	
100mm (4") Compound	\$498.00	
100mm (4") Compound/Transmitter	\$503.00	
100mm (4") OMNI T2 Turbine	\$475.00	
100mm (4") OMNI T2 Turbine/Transmitter	\$480.00	
100mm (4") OMNI C2 Compound	\$488.00	
100mm (4") OMNI C2 Compound/Transmitter	\$493.00	
150mm (6") Turbine	\$587.00	
150mm (6") Turbine/Transmitter	\$592.00	
150mm (6") Compound	\$671.00	
150mm (6") Compound/Transmitter	\$676.00	
150mm (6") Fire Assembly	\$900.00	
150mm (6") Fire Assembly /Transmitter	\$905.00	
150mm (6") OMNI T2 Turbine	\$587.00	
150mm (6") OMNI T2 Turbine/Transmitter	\$592.00	
150mm (6") OMNI C2 Compound	\$671.00	
150mm (6") OMNI C2 Compound/Transmitter	\$676.00	

	<u>Current</u>	<u>Proposed</u>
200mm (8") Turbine	\$665.00	
200mm (8") Turbine/Transmitter	\$670.00	
200mm (8") Fire Assembly	\$1,131.00	
200mm (8") Fire Assembly/Transmitter	\$1,136.00	
250mm (10") Turbine	\$794.00	
250mm (10") Turbine/Transmitter	\$799.00	
250mm (10") Fire Assembly	\$1,408.00	
250mm (10") Fire Assembly/Transmitter	\$1,413.00	

* 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)

Meter Size

16mm (5/8")	\$51.00
19mm (3/4")	\$52.00
25mm (1")	\$58.00
38mm (1-1/2")	\$142.00
50mm (2")	\$151.00
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	\$28.00	\$29.00
Wastewater charges – per cubic metre	1.773	1.826
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	
(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	
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. If not applicable, estimate to be determined at the discretion of the Treasurer. (For each four month billing period)	2X	
(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	

	<u>Current</u>	<u>Proposed</u>
5. <u>Miscellaneous</u>		
(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		
NEW <u>Customer non compliance with AMR installation</u>		\$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	\$30.00	
(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, 2015 .		

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

***bolded script = proposed changes for 2015**

Automated Meter Reading Project (AMR)

The new readers transmit water usage information directly to the City's billing system. Not only is this easier for residents, but more frequent readings could help find potential problems in advance such as leaking taps and toilets.

The new meters automatically record and store your water consumption information. Once the meter is installed individuals will no longer have to read the meter and send in the readings.

The water meters will have transmitters attached to the meter and GPS coordinates. The City will be able to drive along the street and obtain the water readings using a dedicated, safe radio frequency. Meters only transmit information upon request. Transmitters are idle, and only 'wake up and read the meter' when told to do so.

Only the meter's register number and water consumption information is transmitted.

Corix Water Systems has been contracted by the City of St. Catharines to upgrade the water meters. During the upgrade homes will be visited by an employee of Corix, who will perform the water meter upgrade.

The City's new AMR program uses wireless technology to automatically collect water consumption, 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 a year currently and operate 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.

All new water meters and AMR transmitters have been installed inside the customer's property and to ensure integrity and accuracy, the water meter and AMR transmitter's electronic components are hermetically sealed to protect the unit from moisture, dust, contaminants and mechanical damage. These devices have an exceptional in-service record in North America and are not subject to the same failure modes as Electricity Smart Meters.

To date 7,623 water meters have been upgraded to the AMR technology to the end of January 2015. There are 42,121 meters to be updated. There will be additional sections completed during 2015. The entire upgrade project is expected to be completed by end of 2019. One issue that has been experienced to date is that some homeowners have not contacted the City for an appointment to have their meter upgraded. It is suggested that a non-compliance AMR fee of \$500 be approved to assist Corix and City staff to ensure that meters are upgraded in a timely manner and when their section is being completed.

Rate Structure Review

Current Billing Structure – AWWA Meter Multiplier used for Fixed Charge Calculation

The City's current water and wastewater rate structure is a combination of fixed and volumetric charges. The fixed rates are charged to customers based on the size of the meter.

Typically, residential customers have smaller meters than industrial/commercial /institutional (ICI) customers or a multi-residential development as their demand for water is much lower. Water meter sizes vary depending on the required water flow to the property. A typical house may have a 15 mm meter whereas a hotel could have a 150 mm meter. The American Water Works Association (AWWA) recommends the use of the meter multiplier approach as an option for redistributing fixed charges. This approach shifts the weighting of fixed charges based on the type of meter. A larger meter would bear a higher proportion of the fixed charges than a residential meter, which is reflective of the larger burden that the higher volume customer places on the water system. The AWWA meter multiplier approach is used by a number of Niagara municipalities and a significant amount of municipalities in Ontario.

This billing method was implemented by the City of St. Catharines in 2011. The AWWA meter multiplier factors are as follows:

Meter size (in inches)	Multiplier
1	1.4
1.5	1.8
2	2.9
3	11
4	14
6	21

An Alternative for Multi-residential Properties

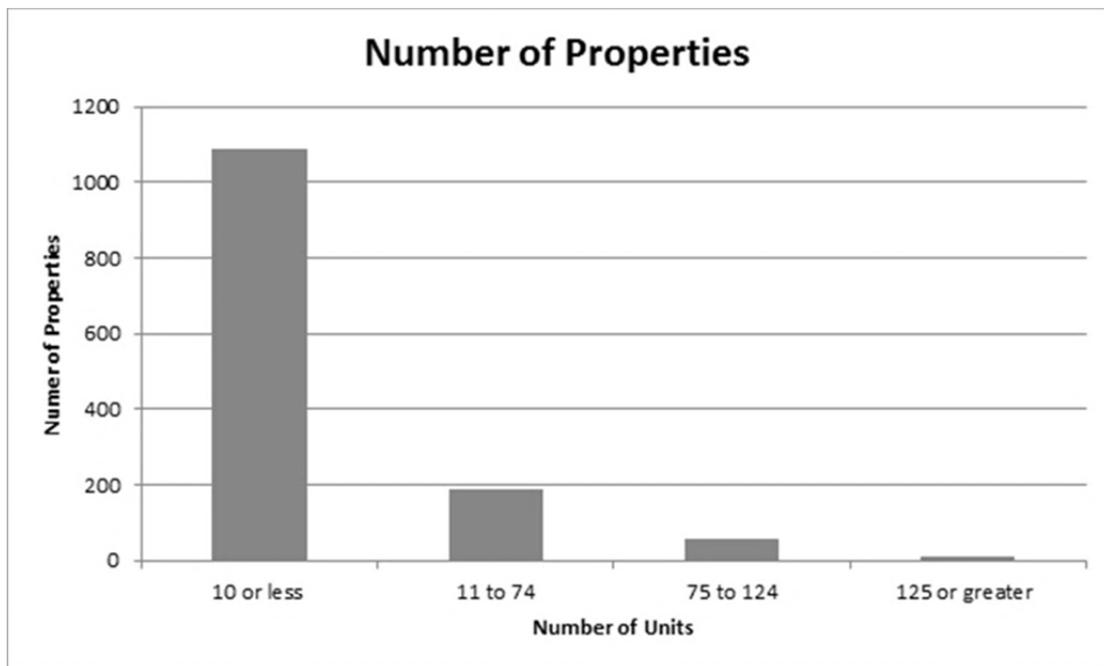
Staff has been verifying customer data, reviewing rate structures in other municipalities and analyzing the impact of a unit charge for water and wastewater fixed costs for multi-residential dwellings. This information required verification because water accounts are created at the time of a development using planned number of units. In some cases the number of units planned will vary from the number of units completed.

As the number of units has not been used for billing criteria in the past, staff needed to confirm the number of units for each multi-residential property and update the customer data to complete a more accurate analysis of a new rate structure.

Within the city, the majority of the multi-residential properties, more than 80%, have 10 units or less. While initially there was consideration of changing the rates specifically for

larger multi-residential units, to ensure fairness within the system any change in the distribution of fixed costs will likely be applied to all multi-residential properties.

Image 1 – Multi-residential data



Although not widespread, some municipalities charge their fixed fees according to the number of dwelling units connected to each meter. In effect, an apartment building with 50 units could pay 50 times the fixed rate charged to a single residential property. This is meant to reflect the fact that the volume of water used and wastewater generated is higher on the multi-residential property and therefore they should be paying more of the fixed cost of operating the system.

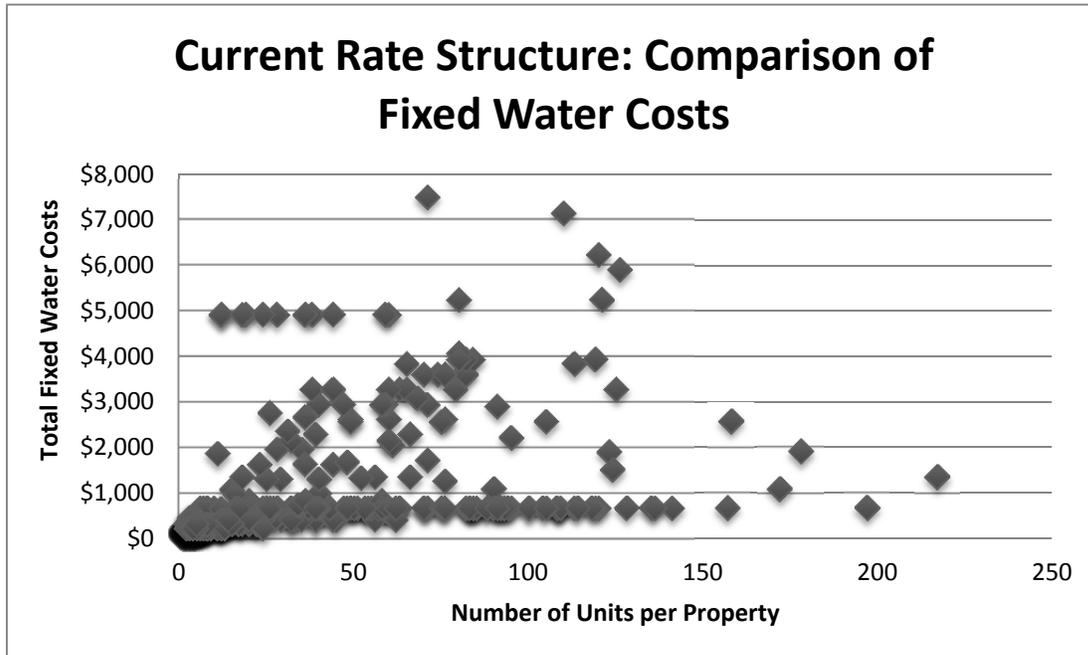
The intent is to create a system whereby the fixed costs of operating the systems are allocated to customers based on their usage of the system. The goal of the ideal billing structure is to most accurately distribute the costs amongst the customers based on their usage of the system. In this ideal structure, each customer would be billed an annual amount that was exactly their proportionate share of the annual operating costs of the system.

Positive impact of the meter multiplier billing method

The current billing structure which includes meter multiplier billing was a significant step in redistributing the fixed costs of the system to the larger users. The introduction of the meter multiplier shifted a greater percentage of the responsibility for the fixed costs to the larger users. In effect, the meter multiplier billing has brought these billings closer to the ideal structure where customers pay based on usage to recover operating costs.

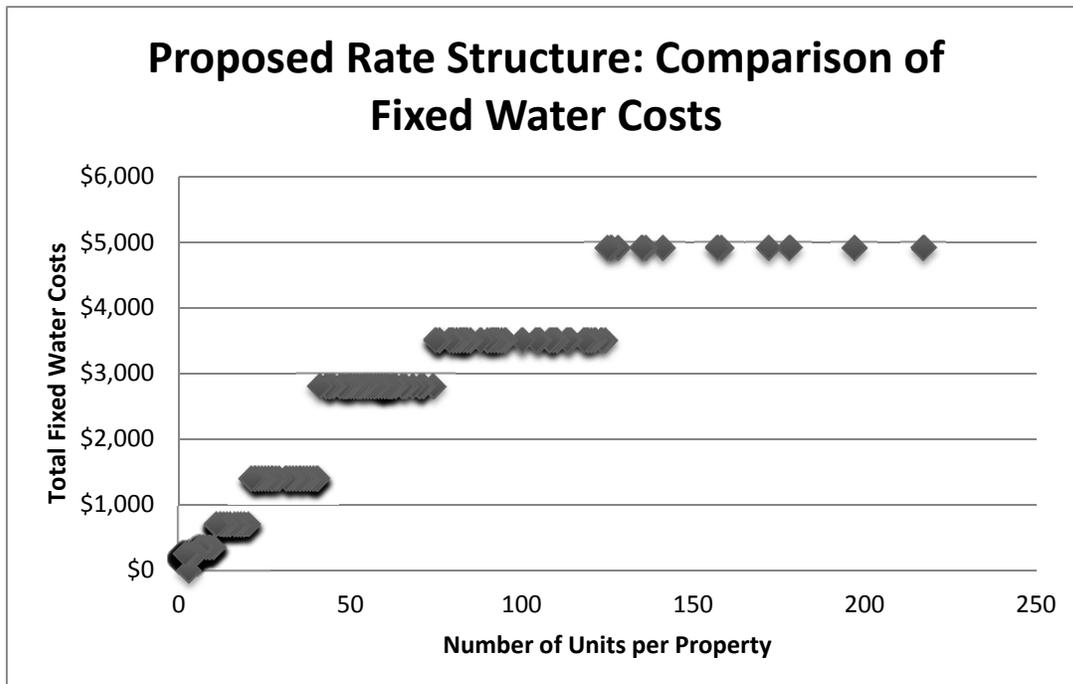
Current vs. future fixed rate structure

Image 2



The current fixed rate structure, shown in image 2, above, demonstrates how fixed costs vary amongst properties that have the same number of units. With a proposed fixed rate structure based on number of units, a more consistent and equitable approach can be achieved. Image 3, depicts an example of a fixed rate based on the number of units.

Image 3



With the current fixed rate structure, shown in Image 2, a number of multi-residential properties with greater than 100 units pay less than \$1,000 for water and waste water fixed costs while conversely, there are properties with less than 50 units that pay \$5,000. As a reference, a single residential property pays \$234 annual for fixed water and wastewater costs.

In the ideal rate structure, as the number of units increases at a multi-residential property so, too, would the dollar amount of fixed costs. The current system, which allocates charges based on the size of the water service, attempts to reflect this but is not fully successful at achieving that result.

The proposed rate structure, in image 3, divides the multi-residential properties into seven groups (bands) based on units. For example, one band may include multi-residential properties with less than five units and the second band is properties with five to 10 units. Then a specific fixed rate is established based on the number of units within the band. The number of units that would trigger movement to the next band is subjective. Therefore the specifics on a trigger point will not be discussed in this report, but rather the theory behind banding.

Changes to the fixed rates can have a significant impact on a multi-residential property's annual water and wastewater fixed costs. Prior to the implementation of any changes, staff want to ensure property owners and residents are provided with a reasonable time period to adjust to the changes. In addition, landlords may also be required to adjust lease agreements to reflect the adjustments. It is for this reason, staff would recommend a phased in approach.

In order to properly phase in the rates, staff would initially start with a lower multiplier and use a graduated system until the target multiplier is obtained. For example, a multi-residential customers with five units would pay the fixed rate applied to two units the first year, three units the next, until the full multiplier can be applied. This would allow property owners and landlords to adjust to the impending changes. Depending on the rates that are approved by Council, the recommended phase in time period is three to five years.

Staff recommends further review of the unit charge for multi-residential properties as a means to ensure: financial viability, equity and fairness, environmental sustainability, and clarity and ease of understanding.

In particular, this recommendation reinforces our efforts to ensure equitable distribution of the costs of running the system. As well, changes to the multi-residential fixed rates have the potential to increase the financial stability of the water/wastewater system.