

City of Markham

2015 Proposed Water/Wastewater Rates



Carlton Road Pumping Station, Markham

Agenda

1. About Markham's Waterworks Department
2. 2014 Comparative Municipal Water/Wastewater Rates (\$/m³)
3. Components of the 2015 Water/Wastewater Rate
4. Summary of 2015 City's Water/Wastewater Rates
5. Impact to Residents and Top 10 Institutional, Commercial and Industrial Customers
6. Waterworks Reserve Balance
7. Next Steps

1. About Markham's Waterworks Department

- Maintaining over 1,000 km of watermains, 800 km sanitary sewers and with more than 77,000 residential and ICI customers; Markham Waterworks operates one of the largest water distribution and wastewater collection systems in Canada
- Markham Waterworks customers consume over 30M m³ of water annually or 220 gallons every second
- Drinking water in Ontario is required to meet strict water quality standards. Markham's Drinking Water Quality Management System (DWQMS) is a risk management approach to operate the system, monitor and report on water quality and prepare and respond to emergencies.
- The Ministry of Environment regularly audits and inspects our DWQMS, our operations and any associated documentation. In 2014 the Ministry renewed Markham's Drinking Water License for another 5 years.

1. About Markham's Waterworks Department

- Waterworks is actively working to reduce risk of basement flooding
 - Video inspect 20% of sewers annually for repairs and condition
 - Downspout Disconnection Program – 6 year program, working with the neighbourhood, to disconnect roof drains connected to the sanitary sewer
 - In 2014 completed a pilot program to reline damaged service laterals to reduce sewage flows during rainfall events
 - Seal manhole lids in low lying areas
 - Monitor sewage flows to determine priority areas



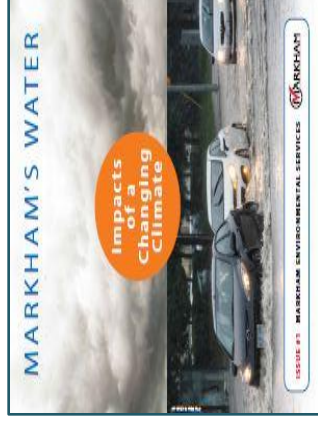


Building Markham's Future Together
Journey to Excellence

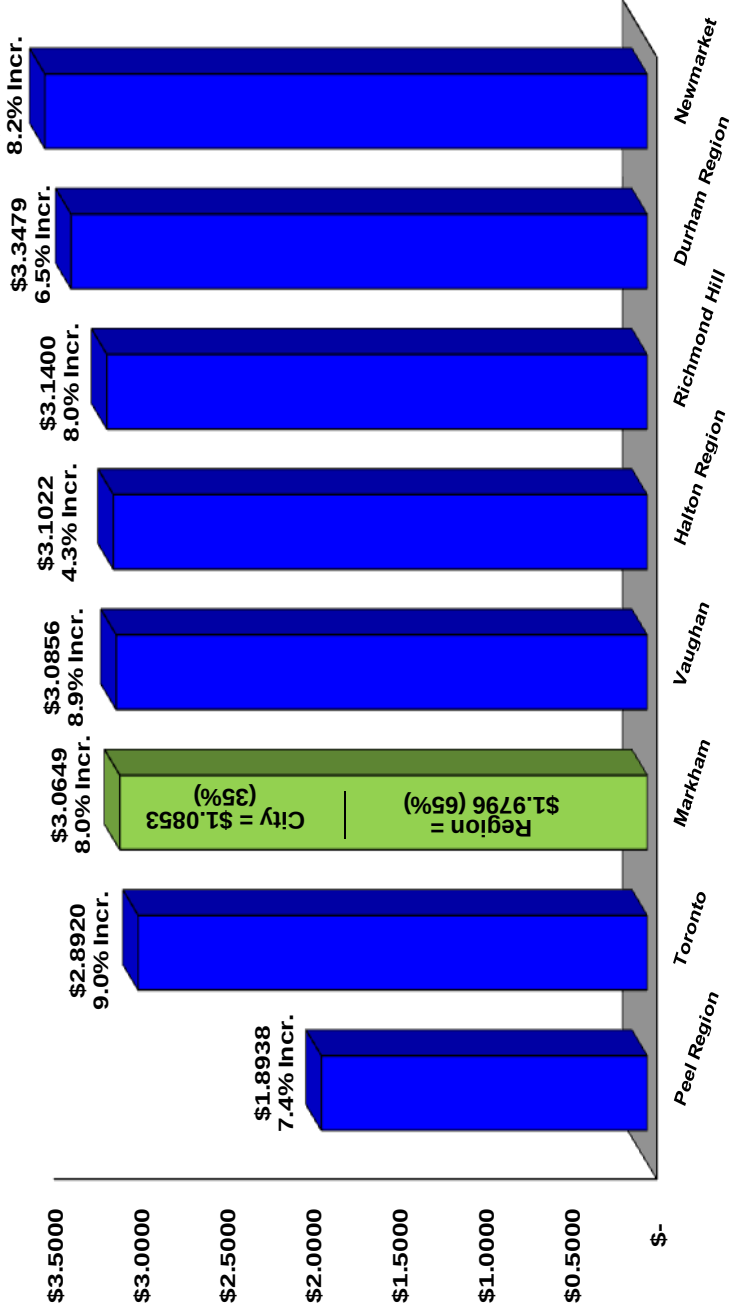
1. About Markham's Waterworks Department

Engaging the Public

- WOW Trailer promotes tap water use and water conservation
- Attended over 20 Community Events and Festivals in 2014
- E.A. Danby –Award of Merit for Public Outreach Program
- Markham's Water Publication Issue #1 - *Impacts of a Changing Climate*



2. 2014 Comparative Municipal Water/Wastewater Rates (\$/m³)



% increase refers to 2014 vs. 2013 rate increase

3. Components of the Water/Wastewater Rate

Markham customers pay a per cubic metre rate (1,000 litres) for their water use. Included in this charge is;

- A. Regional Wholesale Rate** – The actual cost Markham pays to buy water from York Region
- B. Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer
- C. Operational Expenditure** – Funding needed to operate, upkeep and maintain the water and wastewater systems
- D. Reserve Contribution** – Funding used for long term infrastructure rehabilitation/replacement

3. Components of the Water/Wastewater Rate

The City's proposed 2015 Water/Wastewater rate is:

	2014 rate \$/m ³	Increase \$/m ³	2015 Proposed rate \$/m ³
A. Regional Wholesale Rate	1.9796	0.1980	2.1776
B. Non-Revenue Water	0.2447	0.0245	0.2692
C. Operational Expenditure	0.4003	0.0031	0.4034
D. Reserve Contribution	0.4403	0.0249	0.4652
City's 2015 Proposed Retail Rate	3.0649	0.2505	3.3154

Increase of \$0.2505/m³ or 8.2% compared to the 2014 rate

2015 Proposed Water/Wastewater Rates

A. York Regional Wholesale Rate

- Markham does not own or operate a water filtration plant or a wastewater treatment plant (water distribution and wastewater collection only system)
- Markham purchases water through York Region and York Region provides Markham with wastewater treatment services. The purchase price for the water includes the Region's cost for water filtration and wastewater treatment services.
- York Region:
 - ✓ Purchases water from the City of Toronto (60%) and from the Region of Peel (40%) .
The source is Lake Ontario
 - ✓ Pumps water into reservoirs to provide adequate supply and maintain system pressure
 - ✓ Conveys wastewater to their jointly owned treatment facility (in Durham) that treats and releases the water back to Lake Ontario

2015 Proposed Water/Wastewater Rates

A. York Regional Wholesale Rate

The Region's price will support ongoing requirements such as:

- ✓ Rehabilitation and replacement of aging infrastructure
- ✓ Rehabilitation and replacement of assets built in the future
- ✓ Any portion of growth-related infrastructure not eligible to be recovered from development charges
- ✓ Costs associated with operating water and wastewater services

2015 Proposed Water/Wastewater Rates

A. York Regional Wholesale Rate

- The Region's report identified the following blended rate increase:
 - **Approved**
 - 10.0% annually 2012 to 2015
 - **Forecast**
 - 8.0% in 2016
 - 6.0% in 2017
 - 4.0% in 2018 and 2019
 - 3.0% in 2020

The above rates were approved by York Region Council in May 2011. The Region is conducting a master plan to update the rates for 2016 to 2020 and its recommendations will be brought forward to Regional Council for approval in late 2015.

2015 Proposed Water/Wastewater Rates

A. York Regional Wholesale Rate

- Region's approved water and wastewater blended rate increase of 10.0%, includes the wholesale water rate increases from the City of Toronto and Region of Peel. These increases are passed on to the City.

	Region's 2014 Wholesale \$/m ³	% Increase	\$ Increase/m ³	Region's 2015 Wholesale \$/m ³
Water	0.8697	7.5%	0.0648	0.9345
Wastewater	1.1099	12.0%	0.1332	1.2431
Total Rate	1.9796	10.0%	0.1980	2.1776

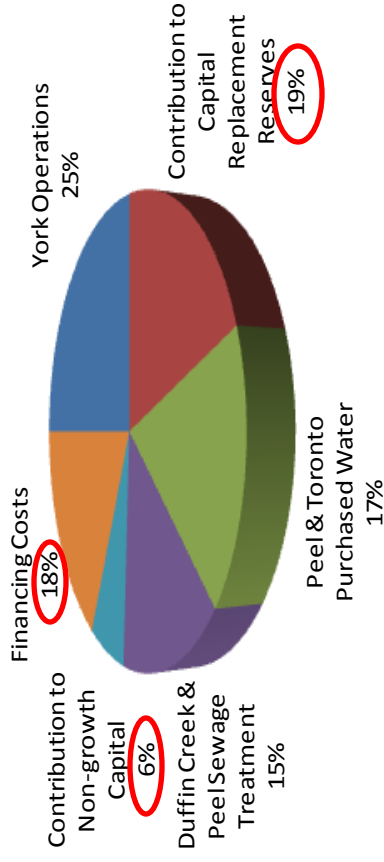
A. Increase 2015 rate by \$0.1980/m³

Water/Wastewater Review – Regional Review Update

- In 2011, Regional Council approved a combined 10% per year rate increase for 2012 to 2015. Continued increases are required to build reserves for aging infrastructure
- Regional Steering Committee and Working Group created to :
 - Develop a long-term fiscal plan for Region's water and wastewater systems and provide recommendations for future rates and rate structures
 - Address issues such as aging infrastructure and reduced demands per capita, which are key drivers of rate pressures
 - Provide guidance as Water & Wastewater industry is moving towards fixed cost recovery models

2015 Proposed Water/Wastewater Rates

A. York Region Rate Anatomy Regional Water/Wastewater Rate

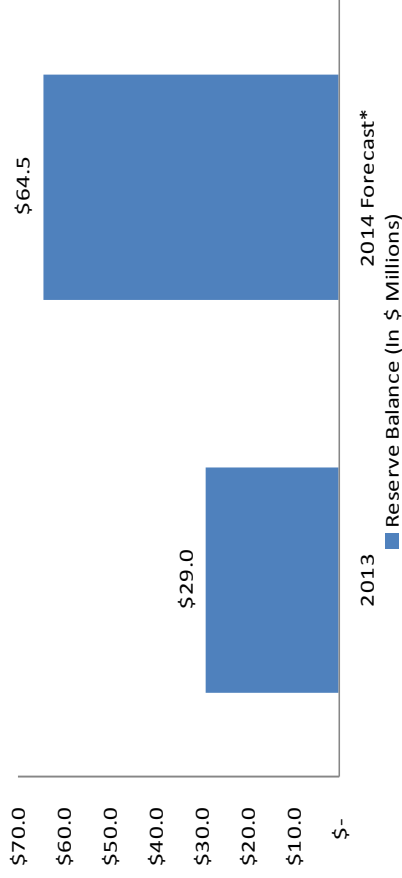


43% of the Regional water and wastewater rate is related to infrastructure capital costs (based upon 2013 data)

2014 Proposed Water/Wastewater Rates

A. York Regional Wholesale Rate

Forecasted Regional Water and Wastewater Reserves



*** Region's forecast on the 2014 preliminary year-end reserve balance (as of December 2014) – current reserve study will address future requirements**

3. Components of the Water/Wastewater Rate

- ✓ **A. Regional Wholesale Rate** – The actual cost Markham pays to buy water from York Region
- B. Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer
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- D. Reserve Contribution** – Funding used for long term infrastructure rehabilitation/replacement

2015 Proposed Water/Wastewater Rates

B. Non-Revenue Water

For every 1,000 litres of water that we buy from YR, we budget to sell only 890 litres. The additional 110 litres or 11% of the purchased water is for:

1. System leakage and watermain breaks (90 l)
2. Meter inaccuracies – on YR supply meters and customer meters (12.5 l)
3. Operational Water - System flushing to maintain water quality and other uses such as fire fighting (5 l)
4. Unauthorised Use - Water theft or illegal connections (2.5 l)

This unsold water is known as **Non Revenue Water (NRW)**.

2015 Proposed Water/Wastewater Rates

B. Non-Revenue Water

Best Practices

Markham's budgeted NRW is considered to represent a well managed system

The International Water Association established a global benchmark for water agencies known as the Infrastructure Leakage Index (ILI) where;

ILI = Actual System Leakage/ Allowable System Leakage;

Allowable System Leakage represents the minimum expected leakage of the system based on best management practices. An ILI close to 1 is considered 'World Class'.

Markham's budgeted NRW represents an ILI of 1.8



2015 Proposed Water/Wastewater Rates

B. Non-Revenue Water

Based on the Region's approved increase of 10.0%, the NRW component of the 2015 Water Rate will be \$0.2692/m³ compared to \$0.2447/m³ in 2014

City's 2014 NRW		City's 2015 NRW	
Component	\$	Component	\$
\$/m ³	% Increase	Increase/m ³	/m ³
0.2447	10.0%	0.0245	0.2692
Total Rate			

B. Increase 2015 rate by \$0.0245/m³

3. Components of the Water/Wastewater Rate

- ✓ **A. Regional Wholesale Rate** – The actual cost Markham pays to buy water from York Region
- ✓ **B. Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer
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2015 Proposed Water/Wastewater Rates

C. Operational Expenditure

The Operational Expenditure component is required to pay for operations and maintenance of the water and wastewater systems.

Total Rate	City's 2014 Operating Component \$/m ³	% Increase	\$ Increase/m ³	City's 2015 Operating Component \$/m ³
	0.4003	0.8%	0.0031	0.4034

C. Increase 2015 rate by \$0.0031/m³

3. Components of the Water/Wastewater Rate

- ✓ **A. Regional Wholesale Rate** – The actual cost Markham pays to buy water from York Region
- ✓ **B. Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer
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2014 Water & Wastewater Reserve Study Update

D. Reserve Contribution

- The City implemented the Water & Wastewater Reserve Study with the purpose of addressing the ongoing replacement and rehabilitation requirements for Waterworks infrastructure and other Waterworks related capital assets, such as Fleet, Facilities and ITS infrastructure, over their useful lives.
- The Reserve Study is updated annually to:
 - establish the water and wastewater rate
 - ensure that there is adequate funding in the Waterworks Reserve to sustain future replacement and rehabilitation requirements for the next 25 years

2014 Water & Wastewater Reserve Study Update

D. Reserve Contribution

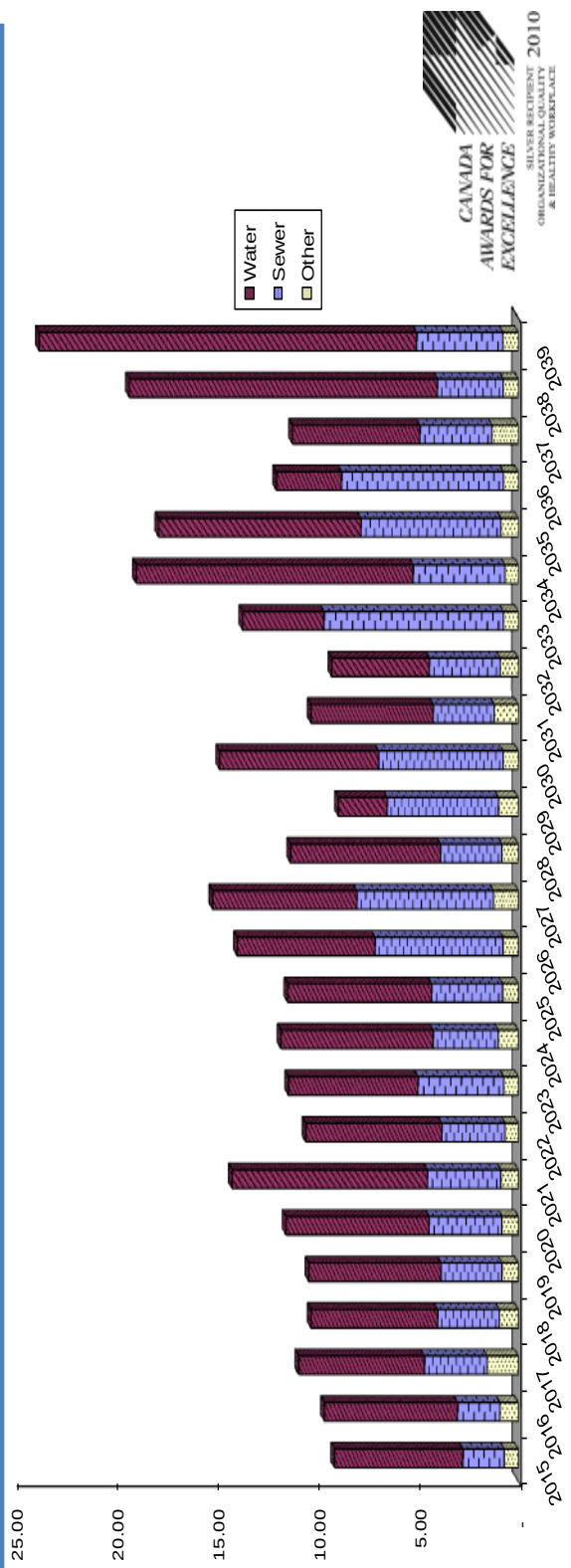
- 2014 reserve study update covered the years 2015 to 2039
- The reserve study incorporates the following:
 - 2013 actual assets
 - 2014 budgeted assets
 - 2015 to 2039 forecasted replacements
 - 2014 approved operating and capital budget
 - Region's 2015 approved rate and estimated future rate increases
 - Other items such as Council approved infrastructure surcharge, inflation and population growth adjustment
- These items contribute to the development of 2015 water/wastewater

2014 Water & Wastewater Reserve Study Update

25-Year Projected Life Cycle Expenditures – By Component

2015-2039 (in 2014 \$ - in Millions)

Total projected expenditures of \$321M for the next 25 years (Average \$13M/year)



2015 Proposed Water/Wastewater Rates

D. Reserve Contribution

- Transfer to Reserves = Sales – Purchases – Operations
- There are two parts to the Reserve Contribution component:
 1. Council Approved Infrastructure Surcharge
 2. Additional funds to ensure there are adequate funding in the Waterworks Reserve to sustain replacement and rehabilitation requirements for the next 25 years

2015 Proposed Water/Wastewater Rates

D. Reserve Contribution

1. Council Approved Infrastructure Surcharge

On November 26, 2007, Council approved a Water & Wastewater Infrastructure Surcharge of \$0.4137/m³ to be phased-in over 10 years effective January 1, 2008. 2015 is the 8th year of the 10 year phase-in.

Year #	1	2	3	4	5	6	7	8	9	10
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Annual Phase-in (\$/m ³)	0.0827	0.0621	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336
Cummulative Phase-in (\$/m ³)	0.0827	0.1448	0.1784	0.2120	0.2456	0.2793	0.3129	0.3465	0.3801	0.4137

2015 Proposed Water/Wastewater Rates

D. Reserve Contribution

2. Additional funds to ensure there is adequate funding in the Waterworks Reserve to sustain replacement and rehabilitation requirements for the next 25 years

	City's 2014 Transfer to Reserve \$/m ³	\$ Increase/m ³	City's 2015 Transfer to Reserve \$/m ³
1. Council Approved Infrastructure Surcharge	0.3129	0.0336	0.3465
2. Capital Requirements	0.1275	-0.0087	0.1188
Total Rate	0.4403	0.0249	0.4652

D. Increase 2015 rate by \$0.0249/m³

3. Components of the Water/Wastewater Rate

- ✓ **A. Regional Wholesale Rate** – The actual cost Markham pays to buy water from York Region
- ✓ **B. Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer
- ✓ **C. Operational Expenditure** – Funding needed to operate, upkeep and maintain the water and wastewater systems
- ✓ **D. Reserve Contribution** – Funding used for long term infrastructure rehabilitation/replacement

4. Summary of 2015 Proposed Water/Wastewater Rates

- The City's proposed 2015 Water/Wastewater rate is:

	\$/m ³
2014 Approved Rate	3.0649
A. Regional Wholesale Rate	0.1980
B. Non-Revenue Water	0.0245
C. Operational Expenditure	0.0031
D. Reserve Contribution	0.0249
City's 2015 Proposed Retail Rate	3.3154

**Increase of \$0.2505/m³ or 8.2% compared to the 2014 rate
(2015 proposed rate includes Region's increase of 10.0%)**

4. Summary of 2015 Proposed Water/Wastewater Rates



Proposed Increase of \$0.2505/m³ or 8.2% compared to the 2014 rate

5. Impact to Residents and Top 10 Institutional, Commercial, Industrial Customers (ICI)

Proposed 2015 water/wastewater rate of \$3.3154/m³

Rate increase of \$0.2505/m³ (Region's rate increase of \$0.2225/m³, City's increase \$0.0280/m³)

Impact to Residents:

- **increase of \$56 per year or \$4.65 per month**
(based on average household consumption of 223m³ per year)

Markham average 2014 annual water bill \$741

2014 average household spends annually based on the rates from local service providers:

- Basic cable television \$480
- Cell Phone/Voice and data family plan \$1,200
- High speed internet \$720
- Landline \$600

Impact to the top 10 ICI customers:

- **increase ranges from \$17k to \$35k per year**
(Region's increase \$14k to \$28k, Markham's increase \$3k to \$7k)

(Top 10 list includes manufacturers, a health care provider, and hospitality providers)

5. Impact to Residents

Residential Water Consumption/Average Bill per Household

Year	Water Consumption per Household (m ³)	Water Rate (\$/m ³)	Average Bill per Household (\$)
2009	268	2.0042	536
2010	260	2.213	575
2011	251	2.4164	608
2012	247	2.6277	649
2013	229	2.8376	653
2014	227	3.0649	696
2015 Budget	223	3.3154	741

5. Impact of Reduced Water Consumption

The average annual residential water consumption has dropped more than 12% to 223 cu. m in last 5 years due to:

- Improved water efficient fixtures and appliances,
- Public attention to water conservation

In 2011, York Region's "*Long Term Water Conservation Strategy*" estimated that region wide consumption was between 275-300 cu. m and targeted household consumption to drop to 185 cu. m by 2051.

Markham's Waterworks Reserve Model assumes that Markham will reach that target by 2041 due to our advanced position in residential consumption and that our future growth includes more high rise development (i.e. typically lower per unit consumption).

6. Waterworks Reserve Balance

Year	Opening Balance \$M	Transfer of Surplus ¹ \$M	Approved Capital Budget \$M	Other ² \$M	Ending Reserve Balance \$M
2007	7.7	6.2	(7.6)	2.3	8.7
2008	8.7	8.2	(9.0)	2.9	10.8
2009	10.8	8.0	(8.9)	(0.7)	9.2
2010	9.2	10.4	(11.1)	1.5	10.0
2011	10.0	12.3	(9.1)	2.1	15.4
2012	15.4	9.7	(9.5)	4.3	19.9
2013	19.9	13.1	(9.4)	9.3	32.8
2014	32.8	12.3	(11.2)	4.5	38.5

1. Transfer of surplus = current year budgeted surplus + prior year's variance to budget
2. Other = interest income + funds returned from completed projects + outstanding NRW charges settlement with Region (\$3.1M)

7. Next Steps

- February 10, 2015 – Public Meeting
- February 23, 2015 - Report to General Committee on feedback from the Public Meeting
- February 24, 2015 - Council decision on 2015 water/wastewater rate
- April 1, 2015 - Implementation of 2015 water/wastewater rate