



**City of Markham
2019 Water/Wastewater Rate
General Committee Meeting
January 21, 2019**

Agenda

1. About Markham's Waterworks Department
2. Markham Water/Wastewater System
3. Markham's Historical Water/Wastewater Rate
4. 2018 Comparative Municipal Water/Wastewater Rates (\$/m³)
5. Components of the 2019 Water/Wastewater Rate
6. Summary of 2019 City's Water/Wastewater Rate
7. Impact to Residents and Top 10 Institutional, Commercial and Industrial Customers
8. Reserve Balance
9. Next Steps

1. About Markham's Environmental Services Department

- Manages 81% of the City's Right-of-Way assets valued at \$6.45 billion including water (1,079 km watermains), wastewater (919 km sanitary sewers), stormwater, bridges, culverts, streetlights, watercourses and erosion sites
- Markham's water and wastewater assets are valued at \$3.67 billion out of the \$6.45 billion total Right-of-Way assets
- Responsible for waste management and environmental stewardship initiatives



1. About Markham's Environmental Services Department

- Provides water service to more than 82,000 residential and ICI customers with consumption over 29M m³ annually
- Drinking water in Ontario is required to meet strict water quality standards. Markham's Drinking Water Quality Management Standard (DWQMS) adopts a risk management approach to operate the system, monitor and report on water quality and respond to emergencies.
 - We continuously monitor water quality in-part through use of an on-line chlorine analyser
 - We continuously monitor our 5 sanitary pumping stations through remote operation and monitoring equipment (Supervisory Control and Data Acquisition - SCADA)
- 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 and the application for the 2019 license renewal has been submitted.

1. About Markham's Environmental Services Department

- Promotion of Markham's tap water, water efficiency/conservation and source water protection
 - WOW Trailer - Attended 28 community events and festivals in 2018. Engaged over 16,000 residents
 - “Get to Know H2O” school outreach program – 154 presentations to over 3,300 residents and students



1. About Markham's Environmental Services Department

- Proactive capital program to manage water assets
 - Leak detection and associated repairs (metallic watermain only)
 - Cathodic protection (ductile/cast iron watermain)
 - Watermain replacement program
 - Curb box and water meter replacement
 - Life cycle condition assessment



2. Markham's Water/Wastewater System

- 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 (YR) and YR 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 and from the Region of Peel. 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.

3. Markham's Historical Water/Wastewater Rate

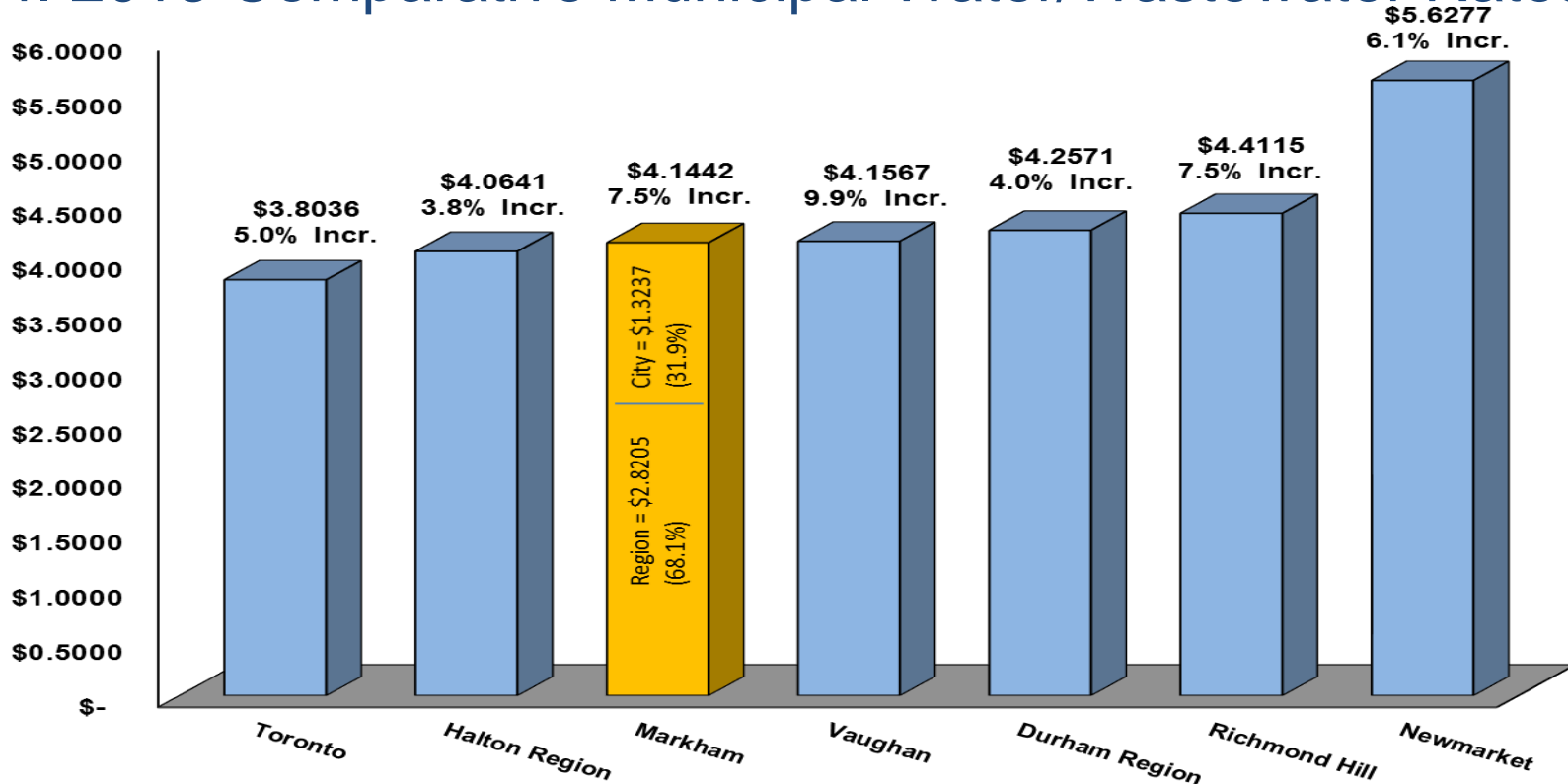
	2014	2015	2016	2017	2018
Wholesale Rate Increase	10.0%	10.0%	9.0%	9.0%	9.0%
Markham's Water/Wastewater Rate Increase	8.0%	8.2%	7.8%	7.8%	7.5%
Markham Water/Wastewater Rate* (\$/m ³)	\$ 3.0649	\$ 3.3154	\$ 3.5751	\$ 3.8555	\$ 4.1442

* Includes Region's wholesale rate increase

Markham's water/wastewater rate increases have historically ranged from 7.5% to 8.2%. This includes the Region's wholesale rate increase.



4. 2018 Comparative Municipal Water/Wastewater Rates (\$/m³)



% increase refers to 2018 vs. 2017 rate increase

4. 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. **Region Wholesale Rate** – The actual cost Markham pays to buy water from YR
- B. **Non-Revenue Water** – Cost of water that is used but not billed to the customer
- C. **Operating Expenditures** – Funding needed to operate, upkeep and maintain the water and wastewater systems
- D. **Reserve Contribution** – Funding used for long term infrastructure rehabilitation and replacement

5. Components of the Water/Wastewater Rate

The City's proposed 2019 Water/Wastewater rate is:

	2018 Rate \$/m ³	Increase \$/m ³	% Increase	2019 Proposed Rate \$/m ³
A. Region's Wholesale Rate	2.8205	0.2538	9.0%	3.0743
B. Non-Revenue Water	0.3486	0.0314	9.0%	0.3800
C. Operating Expenditures	0.4255	0.0195	4.6%	0.4450
D. Reserve Contribution	0.5496	0.0191	3.5%	0.5687
City's Water/Wastewater Rate	4.1442	0.3238	7.8%	4.4680

Increase of \$0.3238/m³ or 7.8% compared to the 2018 rate

5. Components of the Water/Wastewater Rate

A. York Region Wholesale Rate

- York Region:
 - ✓ Purchases water from the City of Toronto and from the Region of Peel. 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.

5. Components of the Water/Wastewater Rate

A. York Region Wholesale Rate

In October 2015, YR Council adopted a strategy to move towards financial sustainability and recommended rate increases to support the following requirements:

- ✓ Build adequate reserves for future asset rehabilitation and replacement
- ✓ Maintain existing assets
- ✓ Cover day to day operations
- ✓ Eliminate the need to issue rate-supported debt
- ✓ Achieve full cost recovery pricing in 2021

5. Components of the Water/Wastewater Rate

A. York Region Wholesale Rate

The Region approved annual rate increases for water and wastewater user rate effective April 1, 2016 through April 1, 2021 as shown below:

Year Starting	Wholesale Rate (\$/m³)	Increase from Prior Year
April 1, 2016	2.3741	9.0%
April 1, 2017	2.5876	9.0%
April 1, 2018	2.8205	9.0%
April 1, 2019	3.0743	9.0%
April 1, 2020	3.3510	9.0%
April 1, 2021	3.4468	2.9%

5. Components of the Water/Wastewater Rate

A. York Region Wholesale Rate

Region's approved water and wastewater blended rate increase of 9.0%, 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 2018 Wholesale \$/m ³	% Increase	\$ Increase/m ³	Region's 2019 Wholesale \$/m ³
Water and Wastewater Rate	2.8205	9.0%	0.2538	3.0743

A. Increase 2019 rate by \$0.2538/m³

5. Components of the Water/Wastewater Rate

	Description	2019 Proposed Rate \$/m³
✓ A. Region's Wholesale Rate	The actual cost Markham pays to buy water from YR	3.0743
B. Non-Revenue Water	Cost of water that is used but not billed to the customer	0.3800
C. Operating Expenditures	Funding needed to operate, upkeep and maintain the water and wastewater systems	0.4450
D. Reserve Contribution	Funding used for long term infrastructure rehabilitation and replacement	0.5687
City's Water/Wastewater Rate		4.4680

5. Components of the Water/Wastewater Rate

B. Non-Revenue Water

For every 1,000 litres of water that Markham buys from YR, it is budgeted to sell only 890 litres. This unsold water is known as **Non Revenue Water (NRW)**.

The additional 110 litres or 11% of the purchased water is for:

1. System leakage and watermain breaks (81 L)
2. Meter inaccuracies – on YR supply meters and customer meters (14.5 L)
3. Operational Water - System flushing to maintain water quality and other uses such as fire fighting (12 L)
4. Unauthorised Use - Water theft or illegal connections (2.5 L)

5. Components of the Water/Wastewater Rate

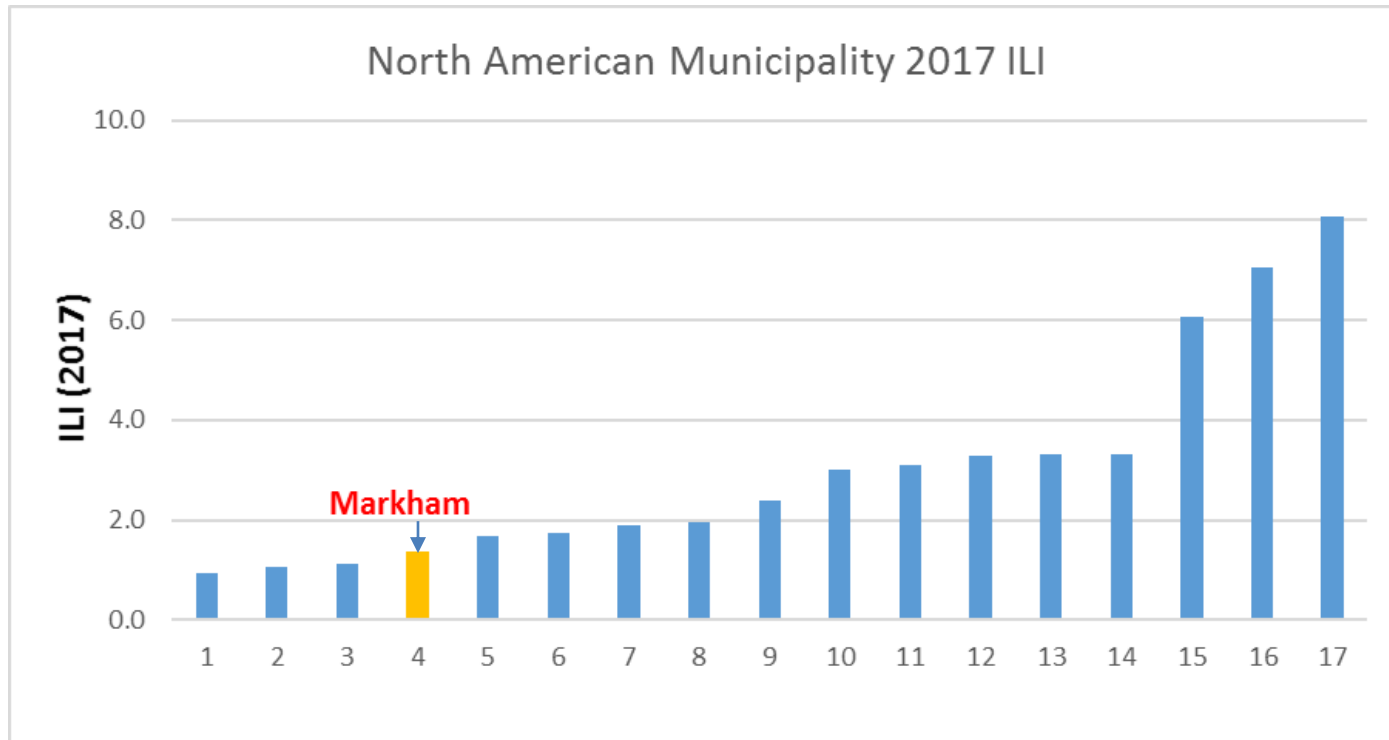
B. Non-Revenue Water

Best Practices

- Markham's budget of 11% NRW is considered a well managed system
- The International Water Association established a global benchmark for water agencies known as the Infrastructure Leakage Index (ILI) where;
- $ILI = \text{Actual System Leakage} / \text{Allowable System Leakage}$;
- 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 2017 ILI is 1.4

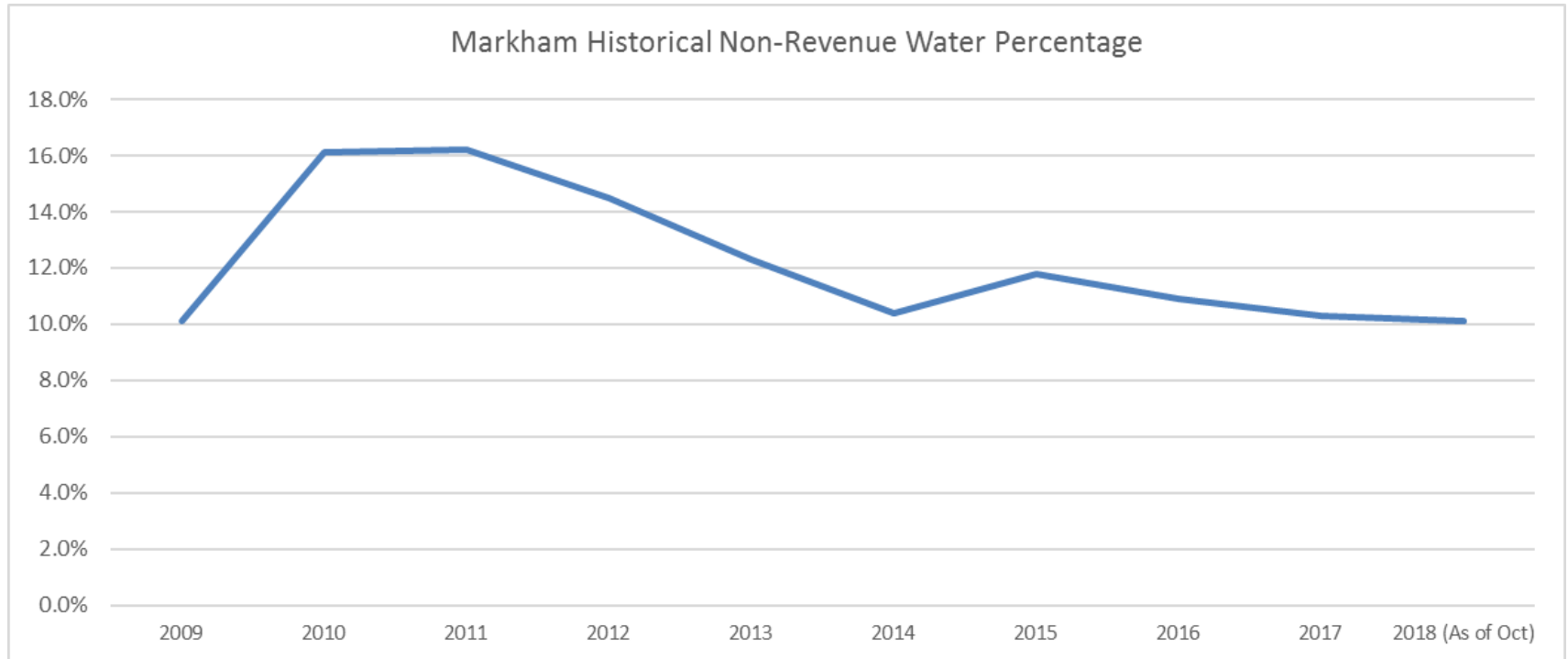


B. Non-Revenue Water (NRW)



Data provided by AWWA Water Loss Committee

B. Non-Revenue Water (NRW)



5. Components of the Water/Wastewater Rate

B. Non-Revenue Water

Based on the Region's approved increase of 9.0%, the NRW component of the 2019 Water Rate will be \$0.3800/m³ compared to \$0.3486/m³

	City's 2018 NRW Component \$/m ³	% Increase	\$ Increase/m ³	City's 2019 NRW Component \$/m ³
Water and Wastewater Rate	0.3486	9.0%	0.0314	0.3800

B. Increase 2019 rate by \$0.0314/m³

5. Components of the Water/Wastewater Rate

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✓ A. Region's Wholesale Rate	The actual cost Markham pays to buy water from YR	3.0743
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5. Components of the Water/Wastewater Rate

C. Operating Expenditures

The Operating Expenditures component is required to pay for operations and maintenance of the water and wastewater systems. Rate increase includes operational increases such as cost of living adjustments, collective agreements and contract escalations.

	City's 2018 Operating Component		\$ Increase/m ³	City's 2019 Operating Component
	\$/m ³	% Increase		\$/m ³
Water and Wastewater Rate	0.4255	4.6%	0.0195	0.4450

C. Increase 2019 rate by \$0.0195/m³

5. Components of the Water/Wastewater Rate

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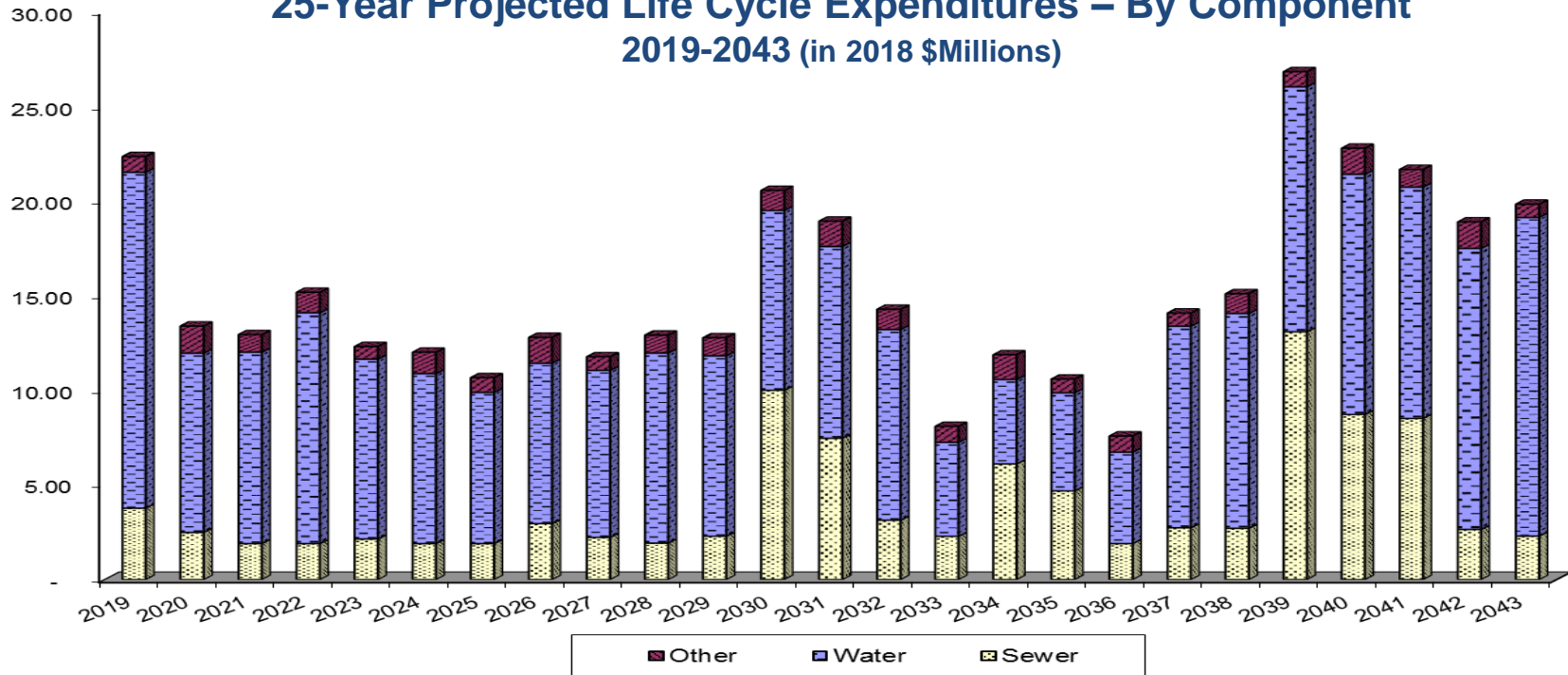
5. Components of the Water/Wastewater Rate

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 of the City's water and wastewater infrastructure for the next 25 years

D. Reserve Contribution

25-Year Projected Life Cycle Expenditures – By Component 2019-2043 (in 2018 \$Millions)



**Total projected expenditures of \$372M (Average \$14.9M/year) for the next 25 years
or \$496M inflated dollars (Average \$19.8M inflated dollars/year)**

5. Components of the Water/Wastewater Rate

D. Reserve Contribution

- Transfer to Reserves = Sales – Purchases – Operations
- The Reserve Contribution component ensures there is adequate funding in the Waterworks Reserve to sustain replacement and rehabilitation requirements for the next 25 years

	City's 2018 Transfer to Reserve \$/m ³	\$ Increase/m ³	City's 2019 Transfer to Reserve \$/m ³
Water and Wastewater Rate	0.5496	0.0191	0.5687

D. Increase 2019 rate by \$0.0191/m³

5. Components of the Water/Wastewater Rate

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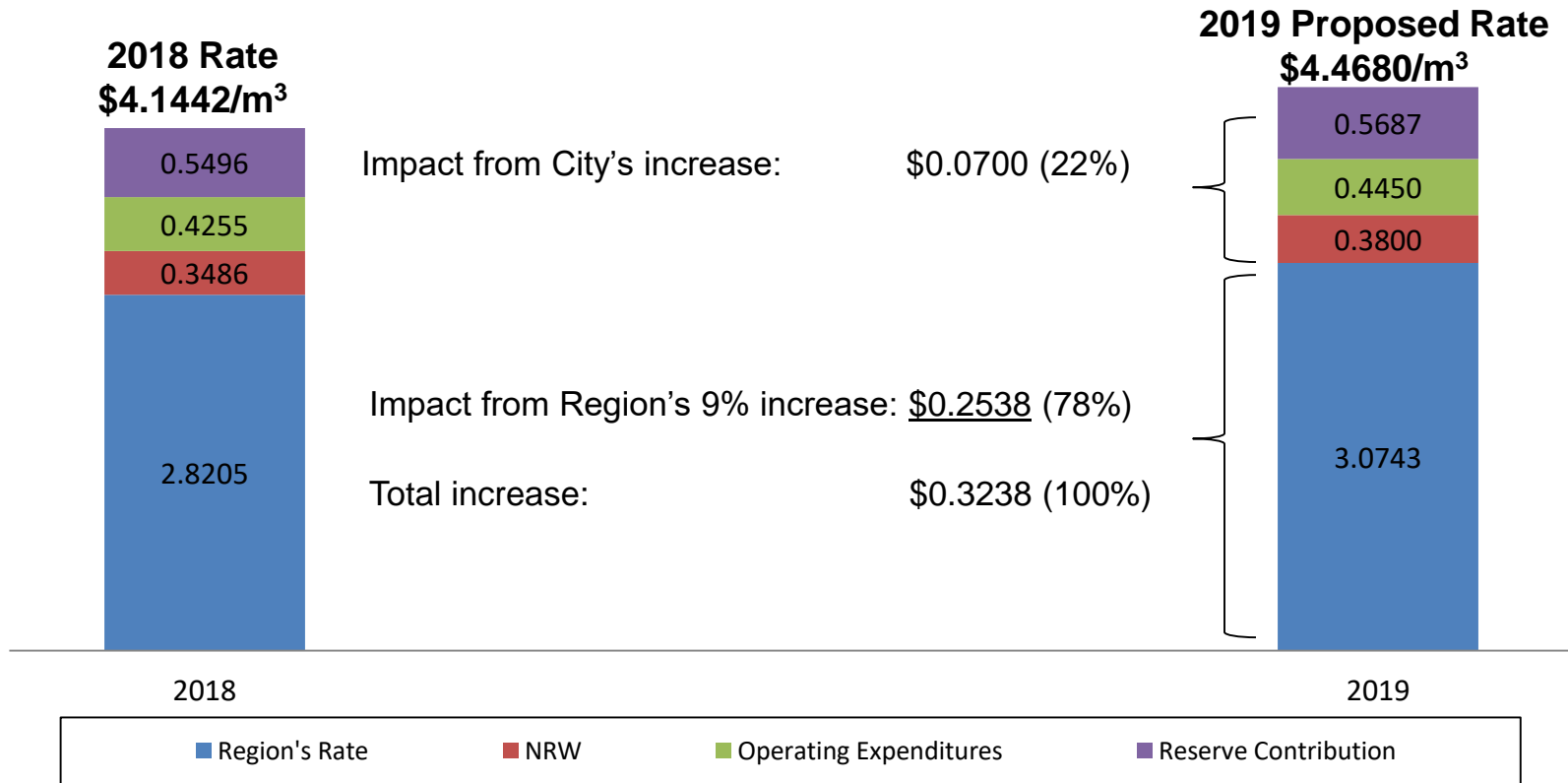
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City's Water/Wastewater Rate	4.1442	0.3238	7.8%	4.4680

**Increase of \$0.3238/m³ or 7.8% compared to the 2018 rate
(2019 proposed rate includes Region's increase of 9.0%)**

6. Summary of 2019 Proposed Water/Wastewater Rate



6. Summary of 2019 Proposed Water/Wastewater Rate

Markham's portion of the rate increase is necessary in order to:

- Fund the day-to-day operations of the Waterworks department
- Fund the future replacement of existing assets over the next 25 years
- Avoid higher rate increases in the future

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

Proposed 2019 water/wastewater rate of \$4.4680/m³

Rate increase of \$0.3238/m³ (Region's rate increase of \$0.2538/m³, City's increase \$0.0700/m³)

Year over Year Impact to Residents

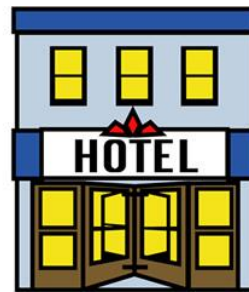
Year	Water Rate	Average Consumption	Average Water Bill
2018 (A)	\$4.1442/m ³	218 m ³ per year	\$903
2019 (B)	\$4.4680/m ³	218 m ³ per year	\$974
Difference (C=B-A)	7.8% Increase		\$71

7. Impact to Top 10 Institutional, Commercial, Industrial (ICI) Customers

Proposed 2019 water/wastewater rate of \$4.4680/m³

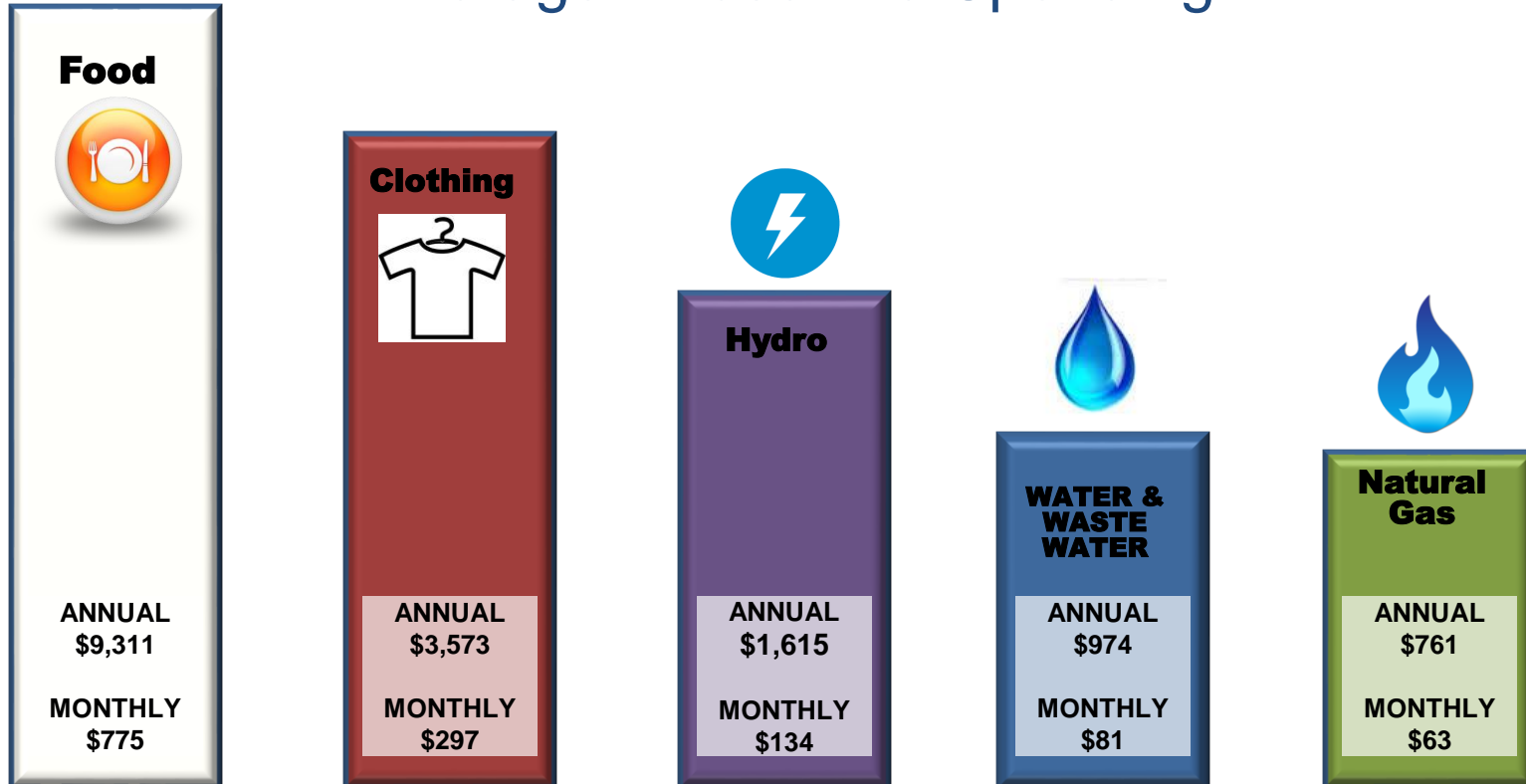
Rate increase of \$0.3238/m³ (Region's rate increase of \$0.2538/m³, City's increase \$0.0700/m³)

- **Increase ranges from \$24k to \$40k per year**
(Top 10 list includes manufacturers, hospitality providers and Markham Stouffville Hospital)





Average Household Spending



Source (excluding water & wastewater): Statistics Canada 2016 Household Spending – Ontario (adjusted for inflation)

8. Reserve Balance

\$ in Millions	2018 Year-End Forecast	2019 Budget
Opening Balance	60.68	69.16
Transfer to Capital	(10.09)	(22.35)
Interest Income	0.80	0.70
Transfer from closed capital projects	1.89	0.00
Transfer to Reserve	15.88	15.87
Waterworks Reserve Ending Balance	69.16	63.38

2019 Projected Reserve Balance of \$63.4M represents 1.7% of the total replacement cost of \$3.68B for waterworks infrastructure.

8. Next Steps

- Public Meeting – Tuesday, February 5, 2019 (6pm – 6:30pm)
- Council Decision – Tuesday, February 26, 2019
- Implementation of 2019 Water/Wastewater Rate - April 1, 2019