City of Markham
2022 Water/Wastewater Rate Public Consultation Meeting
November 18, 2021

MARKHAM

Agenda

1. About Markham's Waterworks Department and State of Infrastructure
2. Markham Water/Wastewater System
3. Markham's Historical Water/Wastewater Rate
4. 2021 Comparative Municipal Water/Wastewater Rates ($/m^3)
5. Components of the 2022 Water/Wastewater Rate
6. Summary of 2022 City's Water/Wastewater Rate
7. Impact to Residents and Top 10 Institutional, Commercial and Industrial Customers
8. Reserve Balance
9. Recommendations (for the November 18th meeting)
10. Next Steps

1. About Markham's Environmental Services Department

- Manages 79% of the City's Right-of-Way assets valued at $7.60 billion including water, wastewater, stormwater, bridges, culverts, streetlights, watercourses and erosion sites
- Markham's water and wastewater assets are valued at $4.26 billion out of the $7.60 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 83,000 residential and ICI customers with consumption close to 30M m^3 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.
- The Ministry of Environment regularly audits and inspects our DWQMS, our operations and any associated documentation. In 2019, the Ministry renewed Markham's Drinking Water License for another 5 years.

1. About Markham's Environmental Services Department

Promotion of Markham's waterworks services, tap water, source water protection, and water efficiency.

F.O.G. Clogs - Protect Your Pipes! IABC/Toronto OVATION Awards

- Award of Excellence: Government Communications Programs
- Award of Merit: Audio/Visual

2021 WINNER IABC Toronto OVATION AWARDS

Get to Know H2O – Virtual Water Education Program

- 151 presentations delivered to 3,076 students in 2021

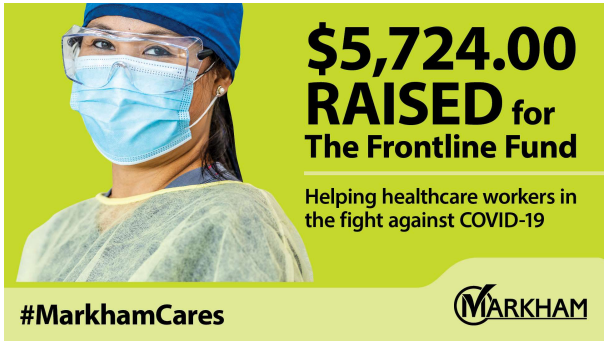
unFOG Fats Oils Grease

New Contactless Outreach Initiatives – collaborations with the Library & Recreation

- Virtual Story Time (137 views and counting)
- Pop-up Parks 141 kids reached

Rain Barrel Sale – contactless curbside collection

- Record sales – 580 barrels sold
- Over 600 residents participated
- Highest donation ever raised through this sale



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.

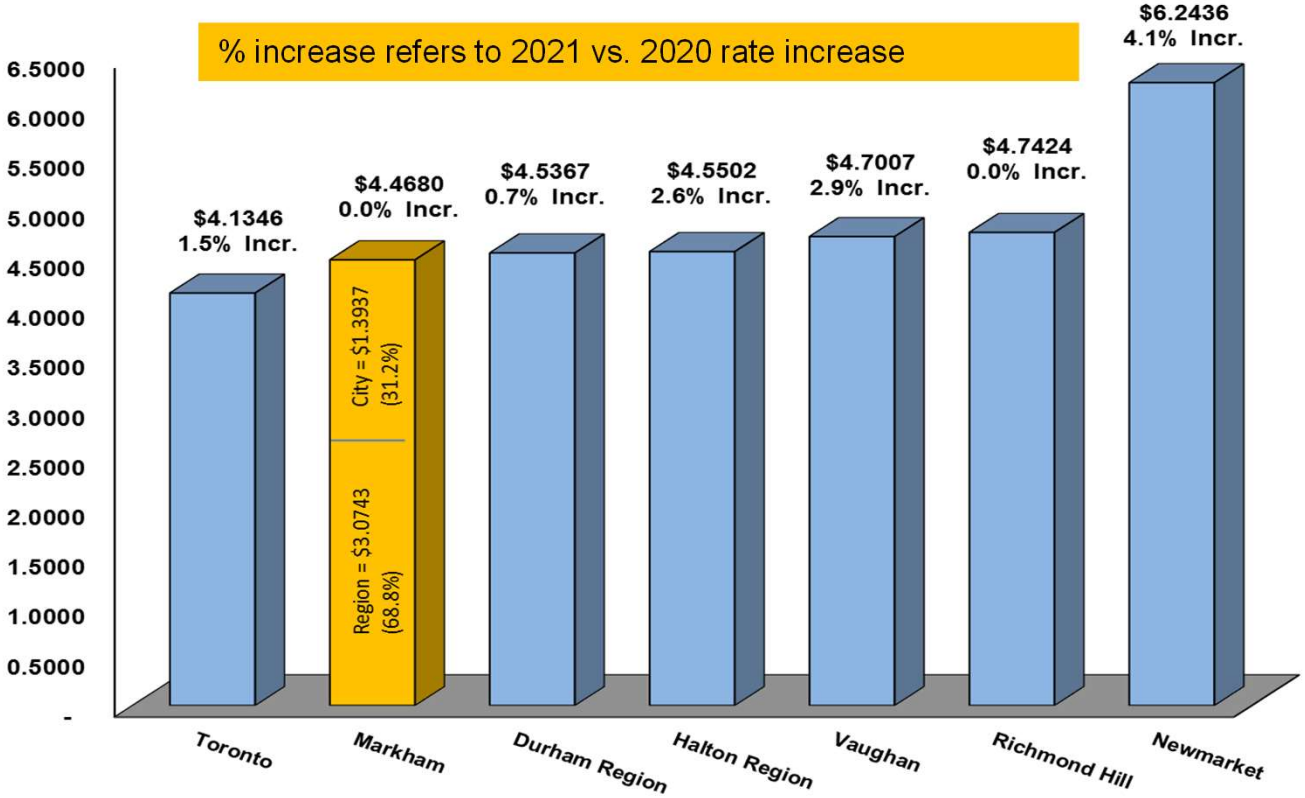
3. Markham's Historical Water/Wastewater Rate

	2017	2018	2019	2020	2021
Wholesale Rate Increase	9.0%	9.0%	9.0%	0.0%	0.0%
Markham's Water/Wastewater Rate Increase*	7.8%	7.5%	7.8%	0.0%	0.0%
Markham Water/Wastewater Rate ($/m3)*	$3.8555	$4.1442	$4.4680	$4.4680	$4.4680

Includes Region's wholesale rate increase

Both the Region and City deferred their scheduled increases in 2020 and 2021. This results in the need for the City to recover lost revenue.

4. 2021 Comparative Municipal Water/Wastewater Rates ($/m^3)



5. 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

E. **Reserve Recovery** – Funding required to recover gap resulting from maintaining 2020 and 2021 rate at the 2019 level

5. Components of the Water/Wastewater Rate

The City's proposed 2022 Water/Wastewater rate is:

	2021 Rate $/m^3	Increase $/m^3	% Increase	2022 Proposed Rate $/m^3
A. Region's Wholesale Rate	3.0743	0.1015	3.3%	3.1758
B. Non-Revenue Water	0.3800	0.0125	3.3%	0.3925
C. Operating Expenditures	0.4620	0.0178	3.9%	0.4798
D. Reserve Contribution	0.5517	0.0165	3.0%	0.5682
City's Water/Wastewater Rate before Reserve Recovery	**4.4680**	**0.1483**	**3.3%**	**4.6163**

Increase of 3.3% or $0.1483/m^3 excluding the reserve recovery requirement as a result of not increasing the 2020 and 2021 rates.

Reserve Recovery
Impact of Not Increasing Rate in 2020 & 2021

- As a result of Markham's decision to maintain its 2020 and 2021 water and wastewater rates at the 2019 level, the City's reserve study is showing an additional shortfall at the end of 25 years
- There are 2 options to recover for this additional shortfall:
  - One-time incremental rate increase in 2022 at 1.5% or \$0.0673/m^3
  - Phase-in over 4 years starting in 2022 at an incremental rate increase of 0.4% or \$0.0184/m^3

Staff recommend a 4-year rate phase-in starting in 2022 at an incremental rate increase of 0.4% (or \$0.0184/m3) to recover for the gap resulting from 2 years of no rate increases

5. Components of the Water/Wastewater Rate

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City's Water/Wastewater Rate before Reserve Recovery	**4.4680**	**0.1483**	**3.3%**	**4.6163**
E. Reserve Recovery (Yr 1 of 4)	0.0000	0.0184	0.4%	0.0184
City's Water/Wastewater Rate	**4.4680**	**0.1667**	**3.7%**	**4.6347**

Increase of $0.1667/m^3 or 3.7% including a 0.4% incremental increase (year 1 of a 4 year phase-in)

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 September 2021, YR Council updated their water/wastewater rate study, which maintained a strategy to ensure financial sustainability and recommended rate increases to support the following requirements:

- ✓ Cover day to day operations
- ✓ Make required asset management contributions based on current estimated needs
- ✓ Service existing user-rate debt and eliminate new debt issuance
- ✓ Maintain full cost recovery while promoting intergenerational equity

5. Components of the Water/Wastewater Rate

A. York Region Wholesale Rate

The Region approved annual rate increases for wholesale rate effective 2022 to 2027.

	Approved September 23, 2021	
Year Starting	Wholesale Rate ($/m^3)	Increase from Prior Year
April 1, 2022	3.1758	3.3%
April 1, 2023	3.2806	3.3%
April 1, 2024	3.3889	3.3%
April 1, 2025	3.5007	3.3%
April 1, 2026	3.6162	3.3%
April 1, 2027	3.7355	3.3%

Region's report identified an annual increase of 2.9% beyond 2027.

5. Components of the Water/Wastewater Rate

A. York Region Wholesale Rate

The Region's water and wastewater (also known as the Region's wholesale rate) rate increase of 3.3%, 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 2021 Wholesale $/m3	% Increase	$ Increase/m^3	Region's 2022 Wholesale $/m3	% of Total Rate
1. Water and Wastewater Rate	3.0743	3.3%	0.1015	3.1758	69%

Increase of $0.1015/$m^3$ or 3.3%

5. Components of the Water/Wastewater Rate

	Description	2022 Rate $/m^3
✓ A. Region's Wholesale Rate	The actual cost Markham pays to buy water from YR	3.1758
B. Non-Revenue Water	Cost of water that is used but not billed to the customer	0.3925
C. Operating Expenditures	Funding needed to operate, upkeep and maintain the water and wastewater systems	0.4798
D. Reserve Contribution	Funding used for long term infrastructure rehabilitation and replacement	0.5682
E. Reserve Recovery	Funding to recover gap resulting from maintaining 2020 and 2021 rates at the 2019 level	0.0184
City's Water/Wastewater Rate		**4.6347**

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 (77 L)
2. Meter inaccuracies – on YR supply meters and customer meters (16 L)
3. Operational Water - System flushing to maintain water quality and other uses such as fire fighting (14 L)
4. Unauthorised Use - Water theft or illegal connections (3 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 = 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 2020 ILI is 1.20

5. Components of the Water/Wastewater Rate

B. Non-Revenue Water

Based on a Region's increase of 3.3%, the NRW component of the 2022 Water Rate will increase by the same percentage

	City's 2021 NRW Component $/m3	% Increase	$ Increase/m^3	City's 2022 NRW Component $/m3	% of Total Rate
Water and Wastewater Rate	**0.3800**	**3.3%**	**0.0125**	**0.3925**	**8%**

Increase of $0.0125/m^3 or 3.3%

5. Components of the Water/Wastewater Rate

	Description	2022 Rate $/m^3
✓ A. Region's Wholesale Rate	The actual cost Markham pays to buy water from YR	3.1758
✓ B. Non-Revenue Water	Cost of water that is used but not billed to the customer	0.3925
C. Operating Expenditures	Funding needed to operate, upkeep and maintain the water and wastewater systems	0.4798
D. Reserve Contribution	Funding used for long term infrastructure rehabilitation and replacement	0.5682
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City's Water/Wastewater Rate		**4.6347**

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 2021 Operating Component $/m3	% Increase	$ Increase/m^3	City's 2022 Operating Component $/m3	% of Total Rate
Water and Wastewater Rate	**0.4620**	**3.9%**	**0.0178**	**0.4798**	**10%**

Increase of $0.0178m^3 or 3.9%

5. Components of the Water/Wastewater Rate

	Description	2022 Rate $/m^3
✓ A. Region's Wholesale Rate	The actual cost Markham pays to buy water from YR	3.1758
✓ B. Non-Revenue Water	Cost of water that is used but not billed to the customer	0.3925
✓ C. Operating Expenditures	Funding needed to operate, upkeep and maintain the water and wastewater systems	0.4798
D. Reserve Contribution	Funding used for long term infrastructure rehabilitation and replacement	0.5682
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City's Water/Wastewater Rate		**4.6347**

5. Components of the Water/Wastewater Rate

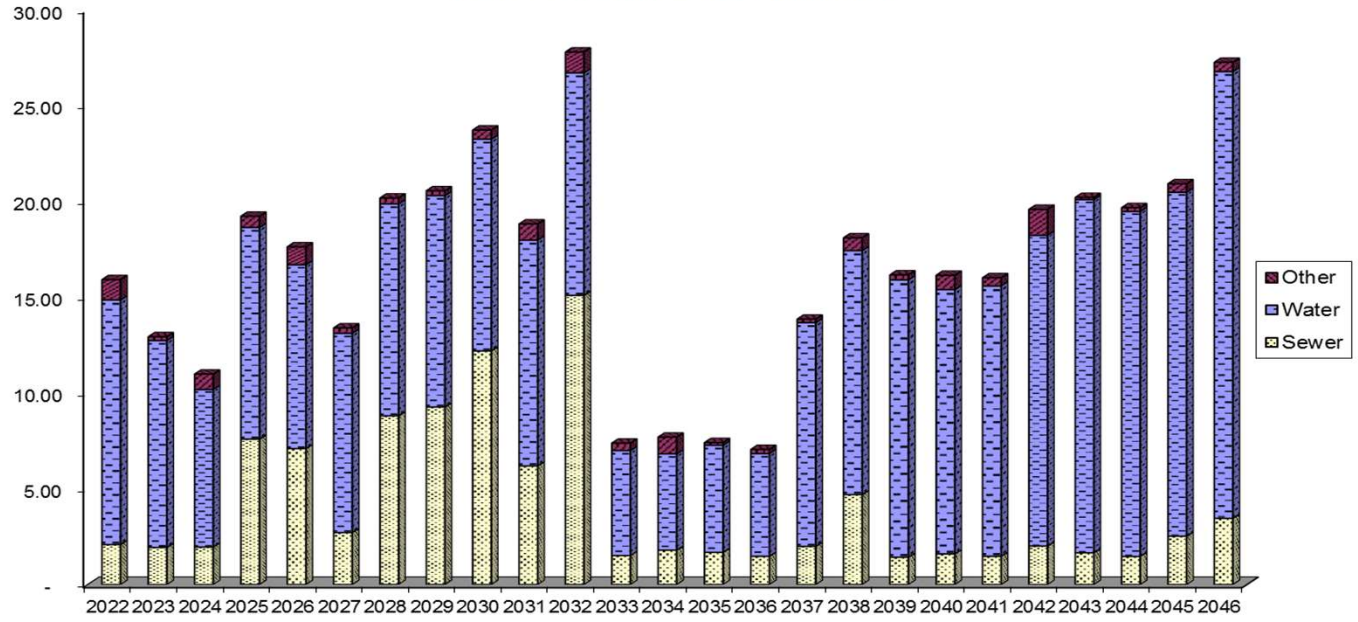
D. Reserve Contribution

- 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

2022-2046 (in 2022 $Millions)



Total projected expenditures of $419M (average $16.8M/year) for the next 25 years or $553M inflated dollars (average $22.1M 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 2021 Transfer to Reserve $/m3	% Increase	$ Increase/m^3	City's 2022 Transfer to Reserve $/m3	% of Total Rate
Water and Wastewater Rate	**0.5517**	**3.0%**	**0.0165**	**0.5682**	**12%**

Increase of $0.0165/m^3 or 3.0%

5. Components of the Water/Wastewater Rate

	Description	2022 Rate $/m^3
✓ A. Region's Wholesale Rate	The actual cost Markham pays to buy water from YR	3.1758
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E. Reserve Recovery	Funding to recover gap resulting from maintaining 2020 and 2021 rates at the 2019 level	0.0184
City's Water/Wastewater Rate		**4.6347**

5. Components of the Water/Wastewater Rate

E. Reserve Recovery

- As a result of Markham's decision to maintain its 2020 and 2021 water and wastewater water rates at the 2019 level, the City's reserve study is showing an additional shortfall at the end of 25 years. In order to eliminate this shortfall, the City will require a one-time incremental rate increase in 2022 of 1.5% or phase-in over 4 years at an incremental rate increase of 0.4%

- Staff recommend phasing this recovery over 4 years at an incremental rate increase 0.4% or $0.0184/m^3$

	City's 2021 Reserve Recovery $/m3	$ Increase/m^3	City's 2022 Transfer to Reserve $/m3	% of Total Rate
Water and Wastewater Rate	**0.0000**	**0.0184**	**0.0184**	**0.4%**

Increase of $0.0184/m^3$ or 0.4% compared to the overall 2021 rate

5. Components of the Water/Wastewater Rate

	Description	2022 Rate $/m^3
✓ A. Region's Wholesale Rate	The actual cost Markham pays to buy water from YR	3.1758
✓ B. Non-Revenue Water	Cost of water that is used but not billed to the customer	0.3925
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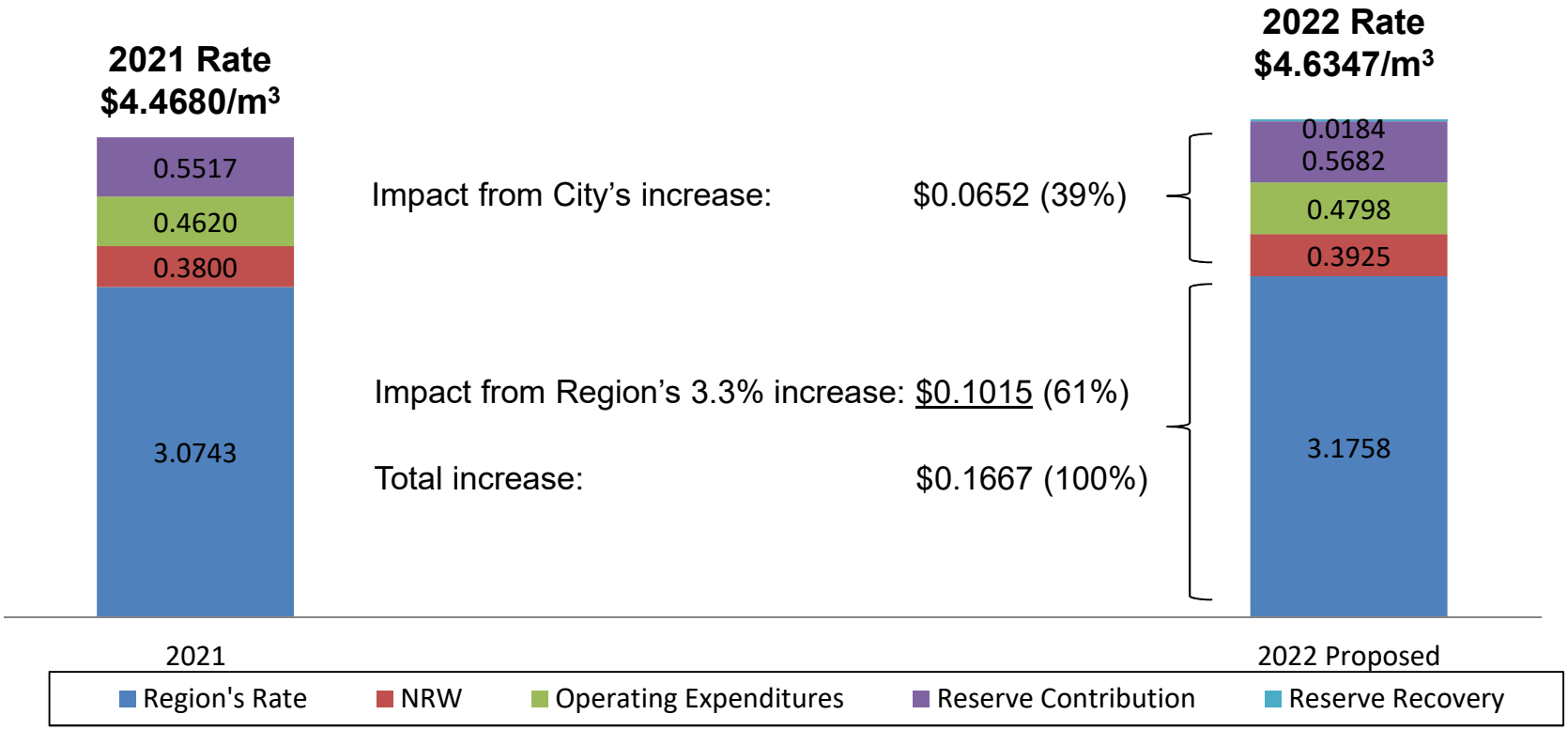
✓ D. Reserve Contribution	Funding used for long term infrastructure rehabilitation and replacement	0.5682
✓ E. Reserve Recovery	Funding to recover gap resulting from maintaining 2020 and 2021 rates at the 2019 level	0.0184
City's Water/Wastewater Rate		**4.6347**

Increase of $0.1667/m^3 or 3.7% compared to the 2021 rate

6. Summary of 2022 Proposed Water/Wastewater Rate



6. Summary of 2022 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

Based on a 3.7% increase to the 2022 water/wastewater rate of \$4.6347m^3
Rate increase of \$0.1667/m^3 (Region's rate increase of \$0.1015/m^3, City's increase \$0.0652/m^3)

Year over Year Impact to Residents

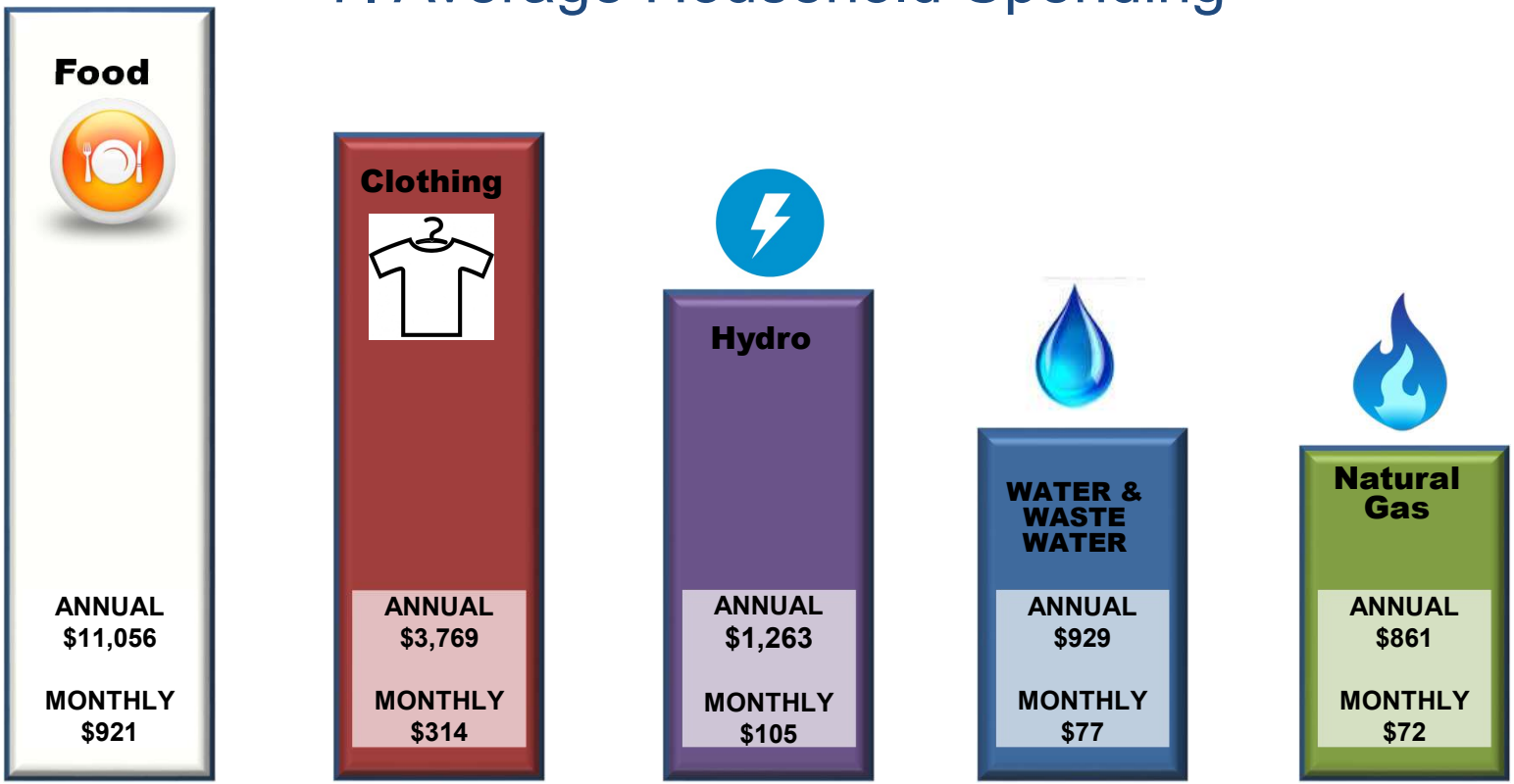
Year	Water Rate	Average Consumption	Average Water Bill
2021 (A)	\$4.4680/m^3	208 m^3 per year	\$929
2022 (B)	\$4.6347/m^3	208 m^3 per year	\$964
Difference (C=B-A)	**3.7% Increase**		**\$35**

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

Based on a 3.7% increase to the 2022 water/wastewater rate of $4.6347m^3$
Rate increase of $0.1667/m^3$ (Region's rate increase of $0.1015/m^3$, City's increase $0.0652/m^3$)

Increase ranges from $7,000 to $18,000 per year
(Top 10 list includes manufacturers, office buildings and Markham Stouffville Hospital)

7. Average Household Spending



Source (excluding water & wastewater): Statistics Canada 2019 Household Spending – Ontario (adjusted for inflation)

8. Reserve Balance

	2021 Year-End Forecast	2022 Proposed Budget
Opening Balance	69.66	74.47
Transfer to Capital	(15.73)	(15.80)
Interest Income	0.59	0.59
Transfer from closed capital projects	3.80	0.50
Transfer to Reserve	16.15	16.76
Waterworks Reserve Ending Balance	**74.47**	**76.52**

Projected Reserve Balance represents 1.8% of the total replacement cost of $4.26B for waterworks infrastructure

9. Recommendations (for the November 18th meeting)

That the following be put forward for consideration by Council at the December 7th Council meeting:

1. That the minutes from the November 18, 2021, 2022 Water/Wastewater Rate Public Consultation meeting be received; and,
2. That a Reserve Recovery be phased in over a 4-year period at \$0.0184/m^3 annually from 2022 to 2025; and
3. That the 2022 City of Markham's ("City") water/wastewater rate be increased by 3.7% or \$0.1667/m^3 from \$4.4680/m^3 to \$4.6347/m^3 (inclusive of the reserve recovery phase-in) effective April 1, 2022; and further
4. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

10. Next Steps

- Council Decision – Scheduled for Tuesday, December 7, 2021
- Implementation of 2022 Water/Wastewater Rate - April 1, 2022