**2018 Proposed Water/Wastewater Rate Public Consultation Meeting**
**November 21, 2017**
**Council Chambers**
**6:00 pm**

---

1. **2018 Proposed Water/Wastewater Rate Presentation** Page 1

2. **Deputations/Public Feedback**

3. **Adjournment**

# City of Markham
# 2018 Proposed Water/Wastewater Rate

Public Consultation Meeting

November 21, 2017

# Agenda

1. About Markham's Environmental Services Department
2. 2017 Comparative Municipal Water/Wastewater Rates ($/$m^3$)
3. Components of the 2018 Water/Wastewater Rate
4. Summary of 2018 City's Water/Wastewater Rates
5. Impact to Residents and Top 10 Institutional, Commercial and Industrial Customers
6. Reserve Balance
7. Next Steps

# 1. About Markham's Environmental Services Department

- Manages 81% of the City's Right-of-Way assets in the value of $6.45 billion including water (1,071 km watermains), wastewater (919 km sanitary sewers), stormwater, bridges, culverts, streetlights, watercourses (erosion sites)
  - Water and wastewater replacement value of $3.675B
- waste management and environmental stewardship initiatives

# 1. About Markham's Environmental Services Department

- More than 81,000 residential and ICI customers; consume over 31M $m^3$ 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 Standard (DWQMS) adopts a risk management approach to operate the system, monitor and report on water quality and prepare 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 (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.

# 1. About Markham's Environmental Services Department

- WOW Trailer promotes Markham's tap water, water efficiency and source water protection in addition to how the City's water and wastewater system work
  - 52 days of events, engaged 16,000+ residents

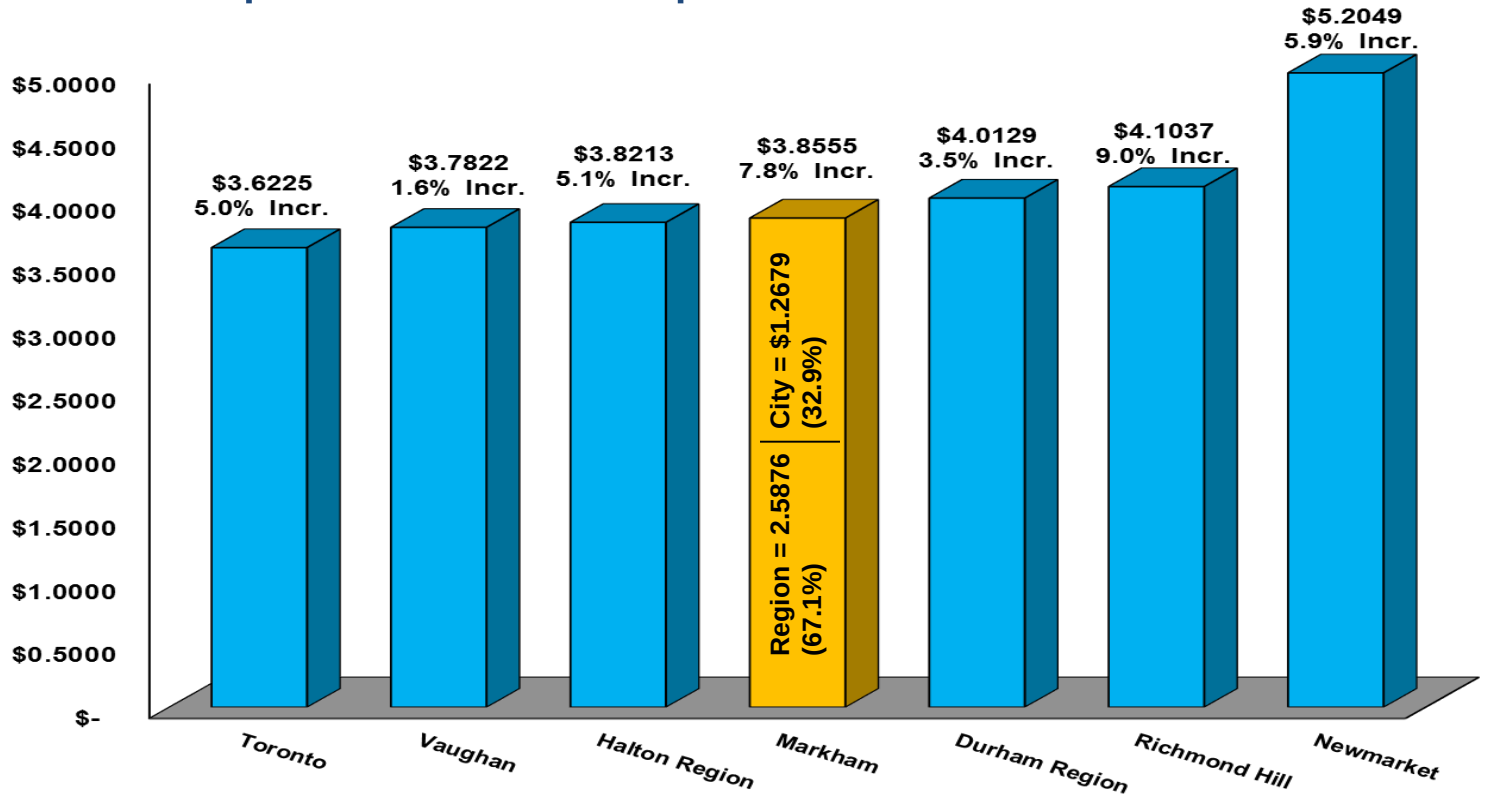
- "Get to Know $H_2O$" school outreach program
  - 52 presentations to 1,300+ students

- Recognized by Ontario Water Works Association
  - "Water Efficiency Award of Excellence" in 2017

# 1. About Markham's Environmental Services Department

- Proactive Capital program to manage water assets
  - Leak Detection; metallic watermain only and associated repairs
  - Cathodic Protection (Ductile Iron)
  - Watermain replacement program
  - Curb Box and water meter replacement
  - Life Cycle condition assessment

# 2. 2017 Comparative Municipal Water/Wastewater Rates ($/m³)




% increase refers to 2017 vs. 2016 rate increase

# 3. Markham Historical Water Rate Increase

| | 2013 | 2014 | 2015 | 2016 | 2017 | Proposed 2018 |
|---|---|---|---|---|---|---|
| Markham Water/Wastewater Rate * | 2.8376 | 3.0649 | 3.3154 | 3.5751 | 3.8555 | 4.1442 |
| % increase vs. prior year | 8.0% | 8.0% | 8.2% | 7.8% | 7.8% | 7.5% |
| Region's Wholesale Rate increase | 10.0% | 10.0% | 10.0% | 9.0% | 9.0% | 9.0% |

* Includes Region's Wholesale Rate increase

- 2017 was the last year of the 10 year phase-in of the infrastructure surcharge of $0.4137 (2008-2017)

# 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. Region Wholesale Rate** – The actual cost Markham pays to buy water from York Region

**B. Operations**

1. **Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer
2. **Operating Expenditures** – Funding needed to operate, upkeep and maintain the water and wastewater systems

**C. Reserve Contribution** – Funding used for long term infrastructure rehabilitation/replacement

# 3. Components of the Water/Wastewater Rate

The City's proposed 2018 Water/Wastewater rate is:

| | 2017 Rate $/m³ | Increase $/m³ | % Increase | 2018 Proposed Rate $/m³ |
|---|---|---|---|---|
| | | | | |
| A. Region's Wholesale Rate | 2.5876 | 0.2329 | 9.0% | 2.8205 |
| B1. Operations: Non-Revenue Water | 0.3198 | 0.0288 | 9.0% | 0.3486 |
| B2. Operations: Operating Expenditures | 0.4155 | 0.0100 | 2.4% | 0.4255 |
| C. Reserve Contribution | 0.5326 | 0.0170 | 3.2% | 0.5496 |
| **City's Retail Rate** | **3.8555** | **0.2887** | **7.5%** | **4.1442** |

**Increase of $0.2887/m³ or 7.5% compared to the 2017 rate**

# 2018 Proposed Water/Wastewater Rates

## A. York Region 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 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.

# 2018 Proposed Water/Wastewater Rates

## A. York Region Wholesale Rate

In October 2015, York Region 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

# 2018 Proposed Water/Wastewater Rates

## A. York Region Wholesale Rate

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

| Year Starting | Wholesale Rate ($/m$^3$) | 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% |

# 2018 Proposed Water/Wastewater Rates

## 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 2017 Wholesale $/m3 | % Increase | $ Increase/$m^3$ | Region's 2018 Wholesale $/m3 |
|---|---|---|---|---|
| **Water and Wastewater Rate** | **2.5876** | **9.0%** | **0.2329** | **2.8205** |

**A. Increase 2018 rate by $0.2329/$m^3$**

# 3. Components of the Water/Wastewater Rate

✓ **A. Region Wholesale Rate** – The actual cost Markham pays to buy water from York Region

**B. Operations**

1. **Non-Revenue Water (NRW)** – Cost of water that is used or 'lost' before reaching the customer
2. **Operating Expenditures** – Funding needed to operate, upkeep and maintain the water and wastewater systems

**C. Reserve Contribution** – Funding used for long term infrastructure rehabilitation/replacement

# 2018 Proposed Water/Wastewater Rates

## B1. Operations: 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, 81.8%)
2. Meter inaccuracies – on YR supply meters and customer meters (12.5 l, 11.4%)
3. Operational Water - System flushing to maintain water quality and other uses such as fire fighting (5 l, 4.5%)
4. Unauthorised Use - Water theft or illegal connections (2.5 l, 2.3%)

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

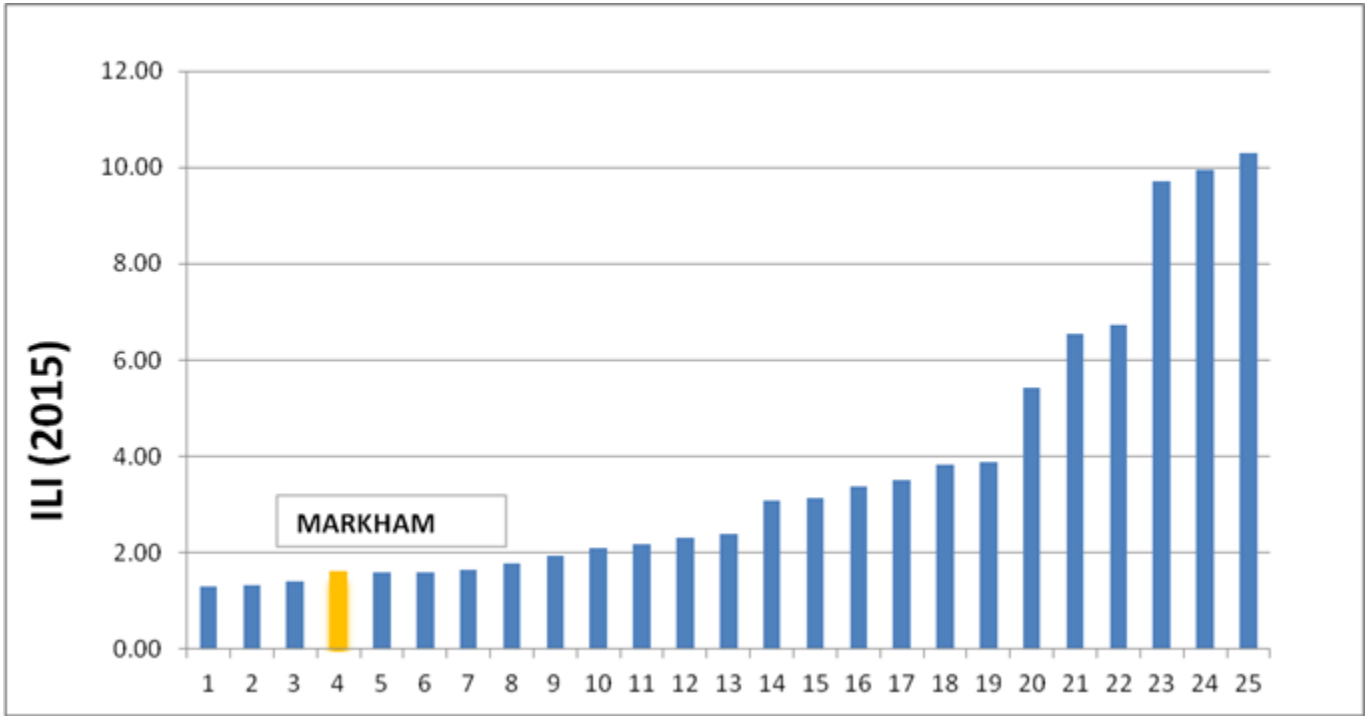
# 2018 Proposed Water/Wastewater Rates

## B1. Operations: Non-Revenue Water (NRW)

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 5 year average ILI is 1.8
  - The 2015 actual ILI for the Canadian municipalities that participated in the national benchmarking survey ranged from 1.0 to 7.8

# B1. Operations: Non-Revenue Water (NRW)




Data provided by AWWA Water Loss Committee

# 2018 Proposed Water/Wastewater Rates

## B1. Operations: Non-Revenue Water

Based on the Region's approved increase of 9.0%, the NRW component of the 2018 Water Rate will be $0.3486/m$^3$ compared to $0.3198/m$^3$

| | City's 2017 NRW Component $/m3 | % Increase | $ Increase/m$^3$ | City's 2018 NRW Component $/m3 |
|---|---|---|---|---|
| **Water and Wastewater Rate** | **0.3198** | **9.0%** | **0.0288** | **0.3486** |

# 3. Components of the Water/Wastewater Rate

✓ **A. Region Wholesale Rate** – The actual cost Markham pays to buy water from York Region

**B. Operations**

✓ 1. **Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer

2. **Operating Expenditures** – Funding needed to operate, upkeep and maintain the water and wastewater systems

**C. Reserve Contribution** – Funding used for long term infrastructure rehabilitation/replacement

# 2018 Proposed Water/Wastewater Rates

## B2. Operations: Operating Expenditures

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

| | City's 2017 Operating Component $/m3 | % Increase | $ Increase/$m^3$ | City's 2018 Operating Component $/m3 |
|---|---|---|---|---|
| **Water and Wastewater Rate** | **0.4155** | **2.4%** | **0.0100** | **0.4255** |

# 2018 Proposed Water/Wastewater Rates

## B. Operations

| | City's 2017 Operations Component $/m3 | % Increase | $ Increase/$m^3$ | City's 2018 Operations Component $/m3 |
|---|---|---|---|---|
| B1. Non-Revenue Water | 0.3198 | 9.0% | 0.0288 | 0.3486 |
| B2. Operating Expenditures | 0.4155 | 2.4% | 0.0100 | 0.4255 |
| **Water and Wastewater Rate** | **0.7353** | **5.3%** | **0.0388** | **0.7741** |

**B. Increase 2018 rate by $0.0388/$m^3$**

# 3. Components of the Water/Wastewater Rate

✓ **A. Region Wholesale Rate** – The actual cost Markham pays to buy water from York Region

**B. Operations**

✓ **1. Non-Revenue Water** – Cost of water that is used or 'lost' before reaching the customer

✓ **2. Operating Expenditure** – Funding needed to operate, upkeep and maintain the water and wastewater systems

**C. Reserve Contribution** – Funding used for long term infrastructure rehabilitation/replacement

# 2017 Water & Wastewater Reserve Study Update

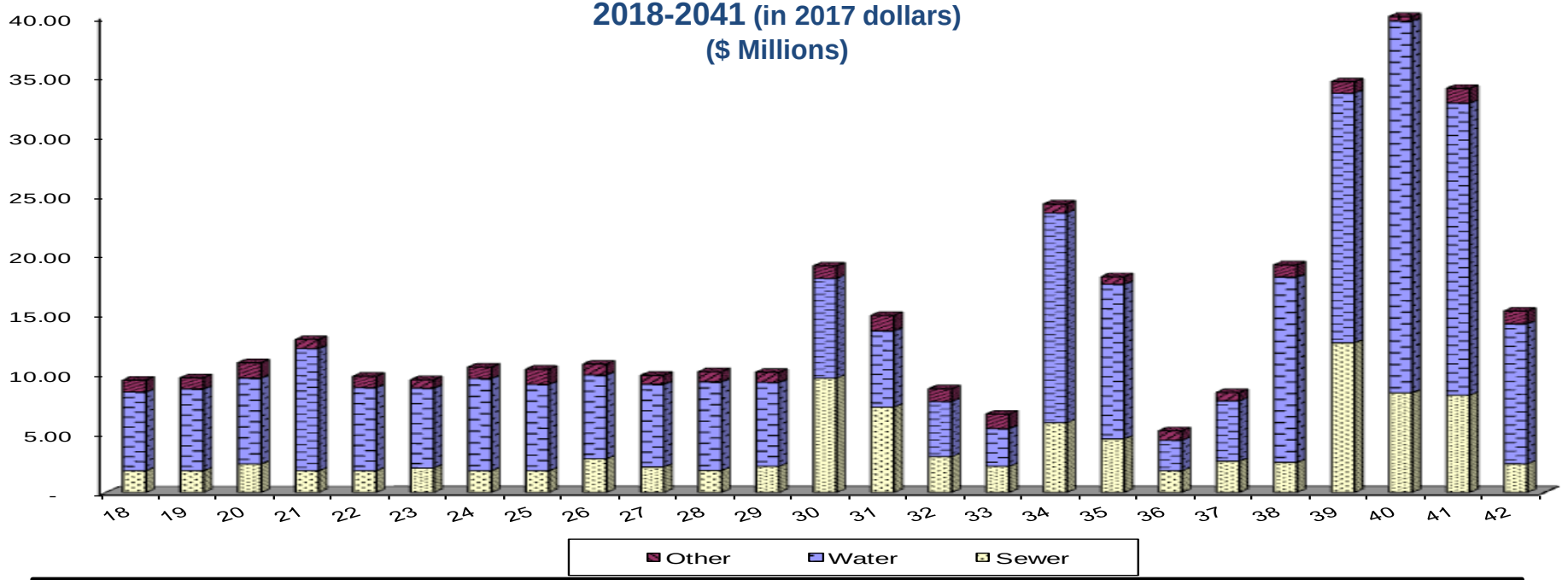
## C. Reserve Contribution

- 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

# 2017 Water & Wastewater Reserve Study Update

## 25-Year Projected Life Cycle Expenditures – By Component

**2018-2041 (in 2017 dollars)**
**($ Millions)**




Total projected expenditures of $373M (Average $14.9M/year) for the next 25 years or $523M inflated dollars (Average $20.9M inflated dollars/year)

# 2018 Proposed Water/Wastewater Rates

## C. Reserve Contribution

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

| | City's 2017 Transfer to Reserve $/m³ | $ Increase/m³ | City's 2018 Transfer to Reserve $/m³ |
|---|---|---|---|
| **Water and Wastewater Rate** | **0.5326** | **0.0170** | **0.5496** |

**C. Increase 2018 rate by $0.0170/m³**

# 3. Components of the Water/Wastewater Rate

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

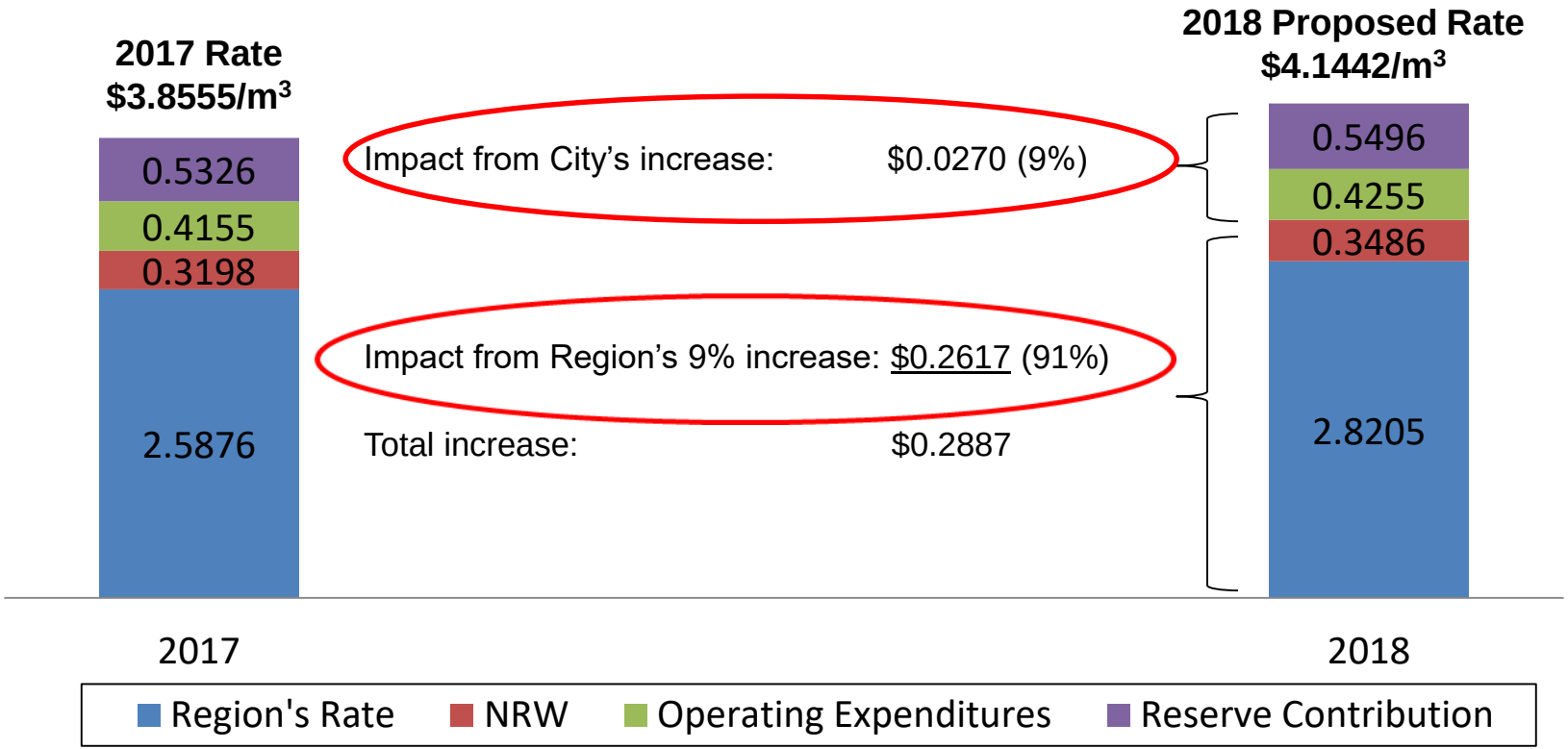
# 4. Summary of 2018 Proposed Water/Wastewater Rates

- The City's proposed 2018 Water/Wastewater rate is:

| | **$/m³** |
|---|---|
| 2017 Approved Rate | 3.8555 |
| A. Regional Wholesale Rate | 0.2329 |
| B1. Operations: Non-Revenue Water | 0.0288 |
| B2. Operations: Operating Expenditures | 0.0100 |
| C. Reserve Contribution | 0.0170 |
| City's 2018 Proposed Retail Rate | **4.1442** |

**Increase of $0.2887/m³ or 7.5% compared to the 2017 rate**
**(2018 proposed rate includes Region's increase of 9.0%)**

# 4. Summary of 2018 Proposed Water/Wastewater Rates



# 4. Summary of 2018 Proposed Water/Wastewater Rates

- 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

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

Proposed 2018 water/wastewater rate of $4.1442m^3$

Rate increase of $0.2887/m^3$ (Region's rate increase of $0.2617/m^3$, City's increase $0.0270/m^3$)

### Year over Year Impact to Residents

| Year | Water Rate | Average Consumption | Average Water Bill |
|---|---|---|---|
| 2017 (A) | $3.8555/m^3$ | 225 $m^3$ per year | $867 |
| 2018 (B) | $4.1442/m^3$ | 225 $m^3$ per year | $932 |
| **Difference (C=B-A)** | **7.5% Increase** | | **$65** |

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

Proposed 2018 water/wastewater rate of $4.1442/m$^3$

Rate increase of $0.2887/m$^3$ (Region's rate increase of $0.2617/m$^3$, City's increase $0.0270/m$^3$)

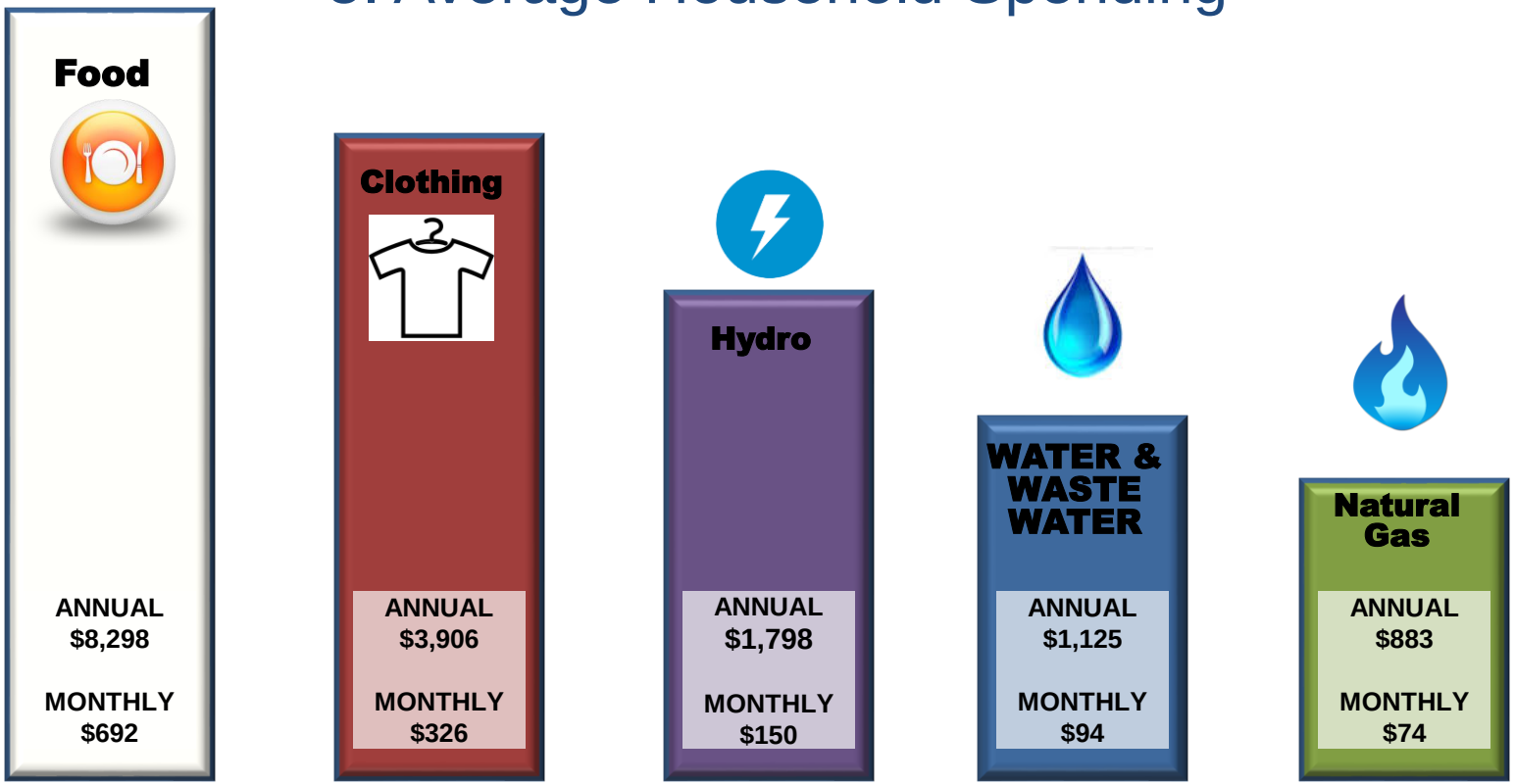
- **Increase ranges from $22k to $32k per year**

**(**Top 10 list includes manufacturers and hospitality providers)

Region's increase $20K to $29K

City's increase $2K to $3K

# 5. Average Household Spending




* York Region publication: "Water is safe, clean and affordable – How your water dollars are invested" - 2016

# 6. Reserve Balance

| In Millions | 2017 Projection | 2018 Budget |
|---|---|---|
| **Opening Balance** | 51.77 | 60.75 |
| **Transfer from Reserve, year-end unfavourable variance** | (0.76) | 0.00 |
| **Transfer to Capital Budget** | (9.42) | (10.08) |
| **Interest Income** | 0.35 | 0.43 |
| **Transfer from closed capital projects** | 3.89 | 0.00 |
| **Transfer to Reserve** | 14.92 | 15.28 |
| **Waterworks Reserve Ending Balance** | **60.75** | **66.38** |

2018 Projected Reserve Balance of $66.38M represents 1.8% of the total replacement cost of $3.68B for waterworks infrastructure. Other municipalities range from 2.8% to 13.0%.

# 7. Next Steps

- General Committee – Monday, December 4, 2017
- Council Decision – Tuesday, December 12, 2017
- Implementation of 2018 Water/Wastewater Rate - April 1, 2018