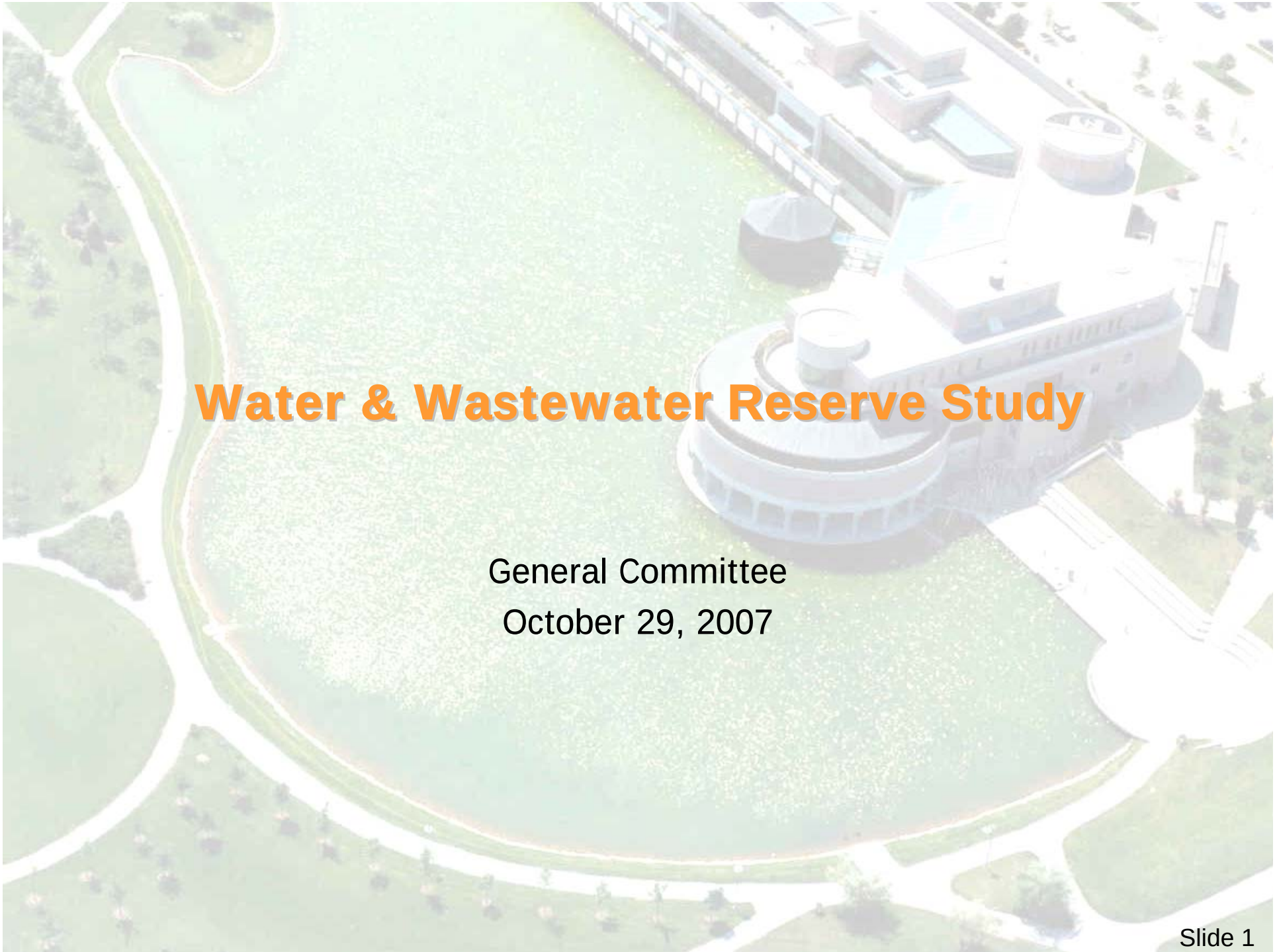


Water & Wastewater Reserve Study

General Committee

October 29, 2007

Agenda

- Purpose
- Executive Summary
- Key Assumptions
- Replacement/Rehabilitation Costs & Impact on Reserve Balance
- Comparison of 2007 Water Rates
- Policy, Options Considered & Recommendation
- Impact on Average Household and Top 10 Institutional, Commercial, Industrial (ICI) Customers
- Reserve Balance with Implementation of Recommended Rate Increase
- Next Steps

Water & Wastewater Reserve Study

Purpose

- To address ongoing replacements and rehabilitation requirements for Waterworks Infrastructure and other Waterworks related capital assets (i.e. Fleet, Facilities, ITS infrastructure) over their useful lives

- Pro-active in addressing funding requirements now for the significant future replacement costs of the aging Waterworks infrastructure in advance of pending legislation

- Similar to the Life Cycle & Capital Reserve Study, establish policy to ensure adequate funding in Reserve to sustain future Waterworks replacement/rehabilitation requirements

Waterworks Reserve Balance

Balance **(as at the end of September 2007)** $8,764,534

Executive Summary

- Assets to the end of December 2006
- Incorporate projection on future population growth and the impact on sale and purchase of water
- Industry standards, consultant study, estimates, and statistical data are used to determine replacement cycle and asset replacement values
- The Reserve Study will be updated annually to account for new inventory and to monitor the adequacy of the Reserve to sustain planned future replacements
- Similar to the capital budgets of replacements/rehabilitation of non-Waterworks assets, future year Waterworks capital budgets will be based upon the Water & Wastewater Reserve Study (for asset repairs/replacements) should condition assessments determine the replacements are required
- The Reserve Study addresses capital replacement/rehabilitation requirements and provides for capital induced operating costs & non-replacement programs

Existing Waterworks Inventory & Related Life Cycle Assumptions

	Type	Life Cycle	Inventory
Sewer	Sewer Main *	73	778 km
	Sewage Service *	50	67,039 Connections
	Manholes	100	11,384 Manholes
	Manholes - ICI property line	100	approx. 1,870 Manholes ***
	Lift Station	50	5
Water	Water Main *		Total 918 km
	Asbestos Cement	77	4.5 km
	Cast Iron	92	76 km
	Copper	85	16.7 km
	Concrete Pressure Pipe	108	15.9 km
	Ductile Iron	68	236.1 km
	Polybutylene	88	1.4 km
	Polyethylene	88	1.3 km
	Polyvinyl Chloride (PVC)	88	565.5 km
	Steel	68	0.3 km
	Water Service	63	67,039 Connections
	Water Metre **	20	67,039
	Fire Hydrant *	61	7,132
	Water Valve Chamber *	50	6,887
	Water Valve * (includes In-Chamber 7,742 & Curb Box 1,054)	59	8,796

* Life Cycle based on Consultant Report (Delcan)
** Life Cycle based on York Region Average
*** Based on number of Water Meters with ratio assumption of 1 Water Meter to 1 Manhole

Other Major Assumptions

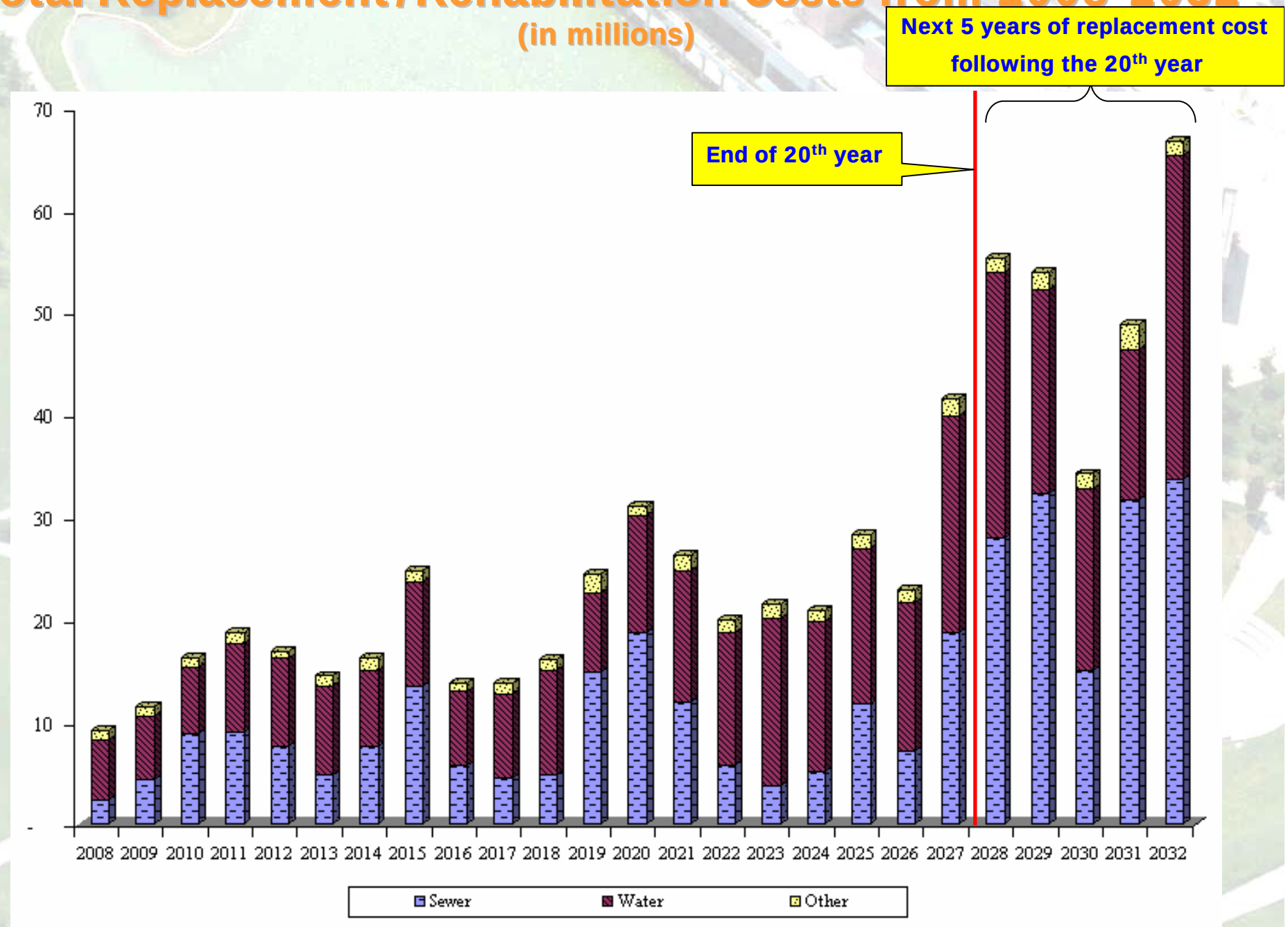
- Inflation at 5% from 2008 to 2012 (based on average Construction Price Index* from past 5 years) and at 2% starting in 2013
- Region's Water rate increase of 3%/yr with Town matching Region's increase of 3%/yr
- Population Growth rate** at:
  - 2% from 2008 to 2016
  - 0.5% from 2017 to 2047
  - By 2048, maximum population will be reached
- Water loss at 7.5%
- Accelerated Cast Iron Replacement Program

* From the Construction Price Index used in the Development Charge Background Study

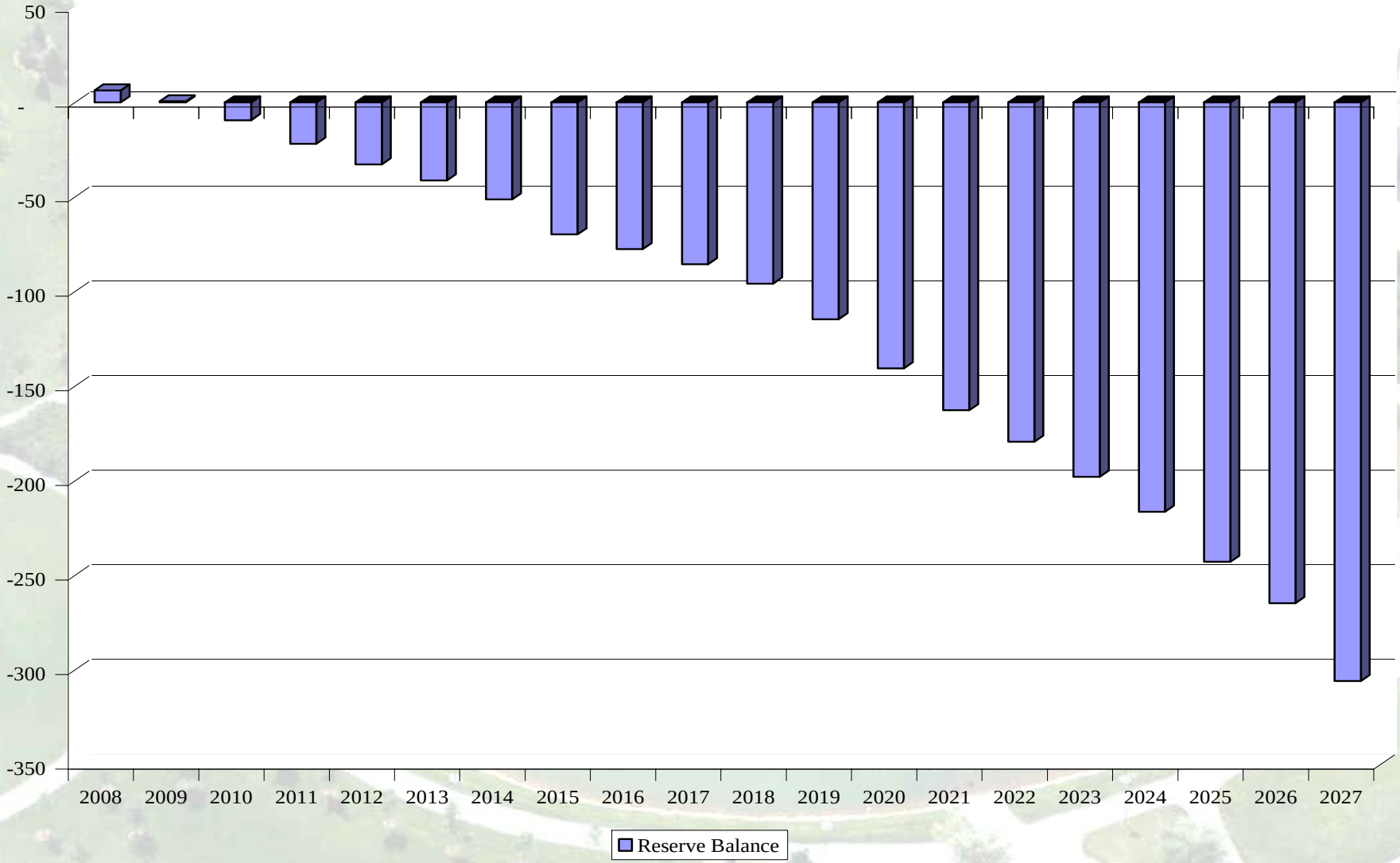
** Population Growth rate from Hemson

Total Replacement / Rehabilitation Costs from 2008-2032

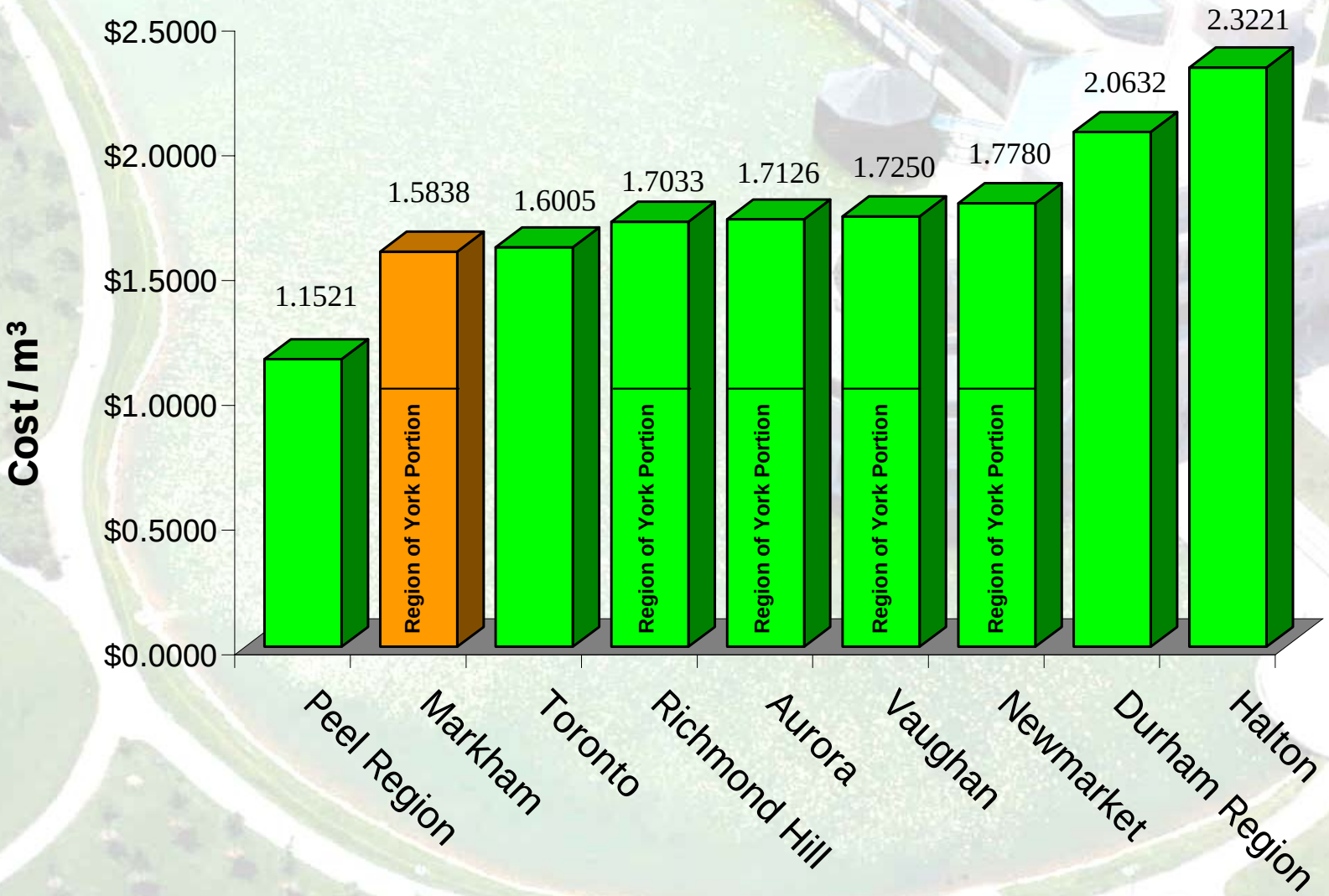
(in millions)



Impact on Reserve Balance with no Infrastructure Rate Increase
(in millions)



Comparative 2007 Water / Wastewater Rates ($/m³)



- Toronto has various rates, based on consumption. The rate shown here represents an average based upon projected consumption for a residential home.
- Durham Region includes a service charge of $0.5745/ m³. Halton Region includes a service charge of $0.8092/ m3
- York Region's wholesale rate is $1.0507/m³

Policy

- Reserve Study is based on a 20 year rolling period
- Similar to the Life Cycle & Capital Reserve Study, the Water & Wastewater Reserve Study will have sufficient funds for the next 20 years (2008 to 2027) and sustainable funds for the following 5 years of Operations

Rate Increase Options Considered

1. Full increase in 2008
   - (at $0.3576 starting in 2008 & beyond)
2. Phase-in over 2 years
   - ($0.1837 increase/yr in 2008 & 2009, full rate at $0.3674 starting in 2009 & beyond)
3. Phase-in evenly over 4 years
   - ($0.0971 increase/yr from 2008 to 2011, full rate at $0.3883 starting in 2011 & beyond)
4. Phase-in evenly over 5 years
   - ($0.0799 increase/yr from 2008 to 2012, full rate at $0.3994 starting in 2012 & beyond)
5. Phase-in over 5 years with 40% of total increase in 2008 with remaining increase spread evenly over the following 4 years
   - ($0.1552 increase in 2008 and $0.0582 increase/year from 2009 to 2012, full rate at $0.3881 starting in 2012 & beyond)

Recommendation
Option 4 – Phase-in evenly over 5 years

- Rate increase of $0.3994 (in addition to Region's rate increase) to be phased-in over 5 years

Year	$
2008	0.0799
2009	0.1598
2010	0.2396
2011	0.3195
2012	0.3994

Incremental increase of $0.0799 up to 2012

Based on the recommendation :

By 2027, target Water & Wastewater Reserve Balance should be at $93M

Impact to Average Household
&
Top 10 Institutional, Commercial, Industrial (ICI) Customers

Rate increase of $0.0799 in 2008 (excludes Region's rate increase)

Average household annual consumption is 365m³

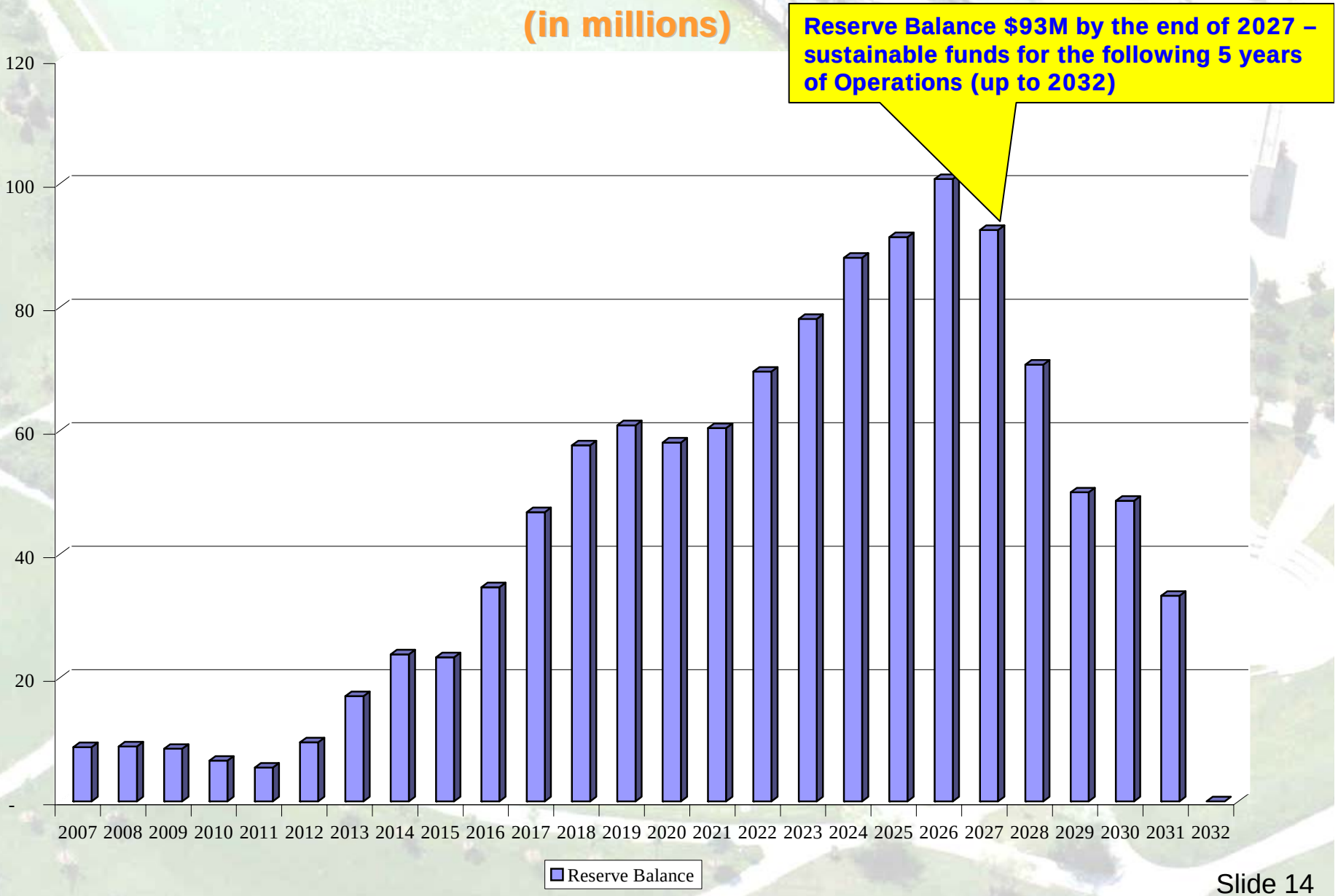
Increase of $29.16 in 2008 (in addition to Region's rate increase)

Impact on ICI customers ranges from $12K to $23K

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

Reserve Balance with Phase-in of Recommended Increase evenly over 5 Years

(in millions)



Next Steps

- Report to General Committee on November 5:
  - Rate increase
  - 1st notice of public meeting (November 15)
  - 2nd notice of public meeting (November 22)
  - Public meeting date (November 27)