

C 15
COMMUNICATION
OW (WORKING SESSION)
June 1/16
ITEM - 10

Water and Wastewater Master Plan Update

Presentation to
City of Vaughan
Committee of the Whole

Stephen Fung
Director, Infrastructure Asset Management

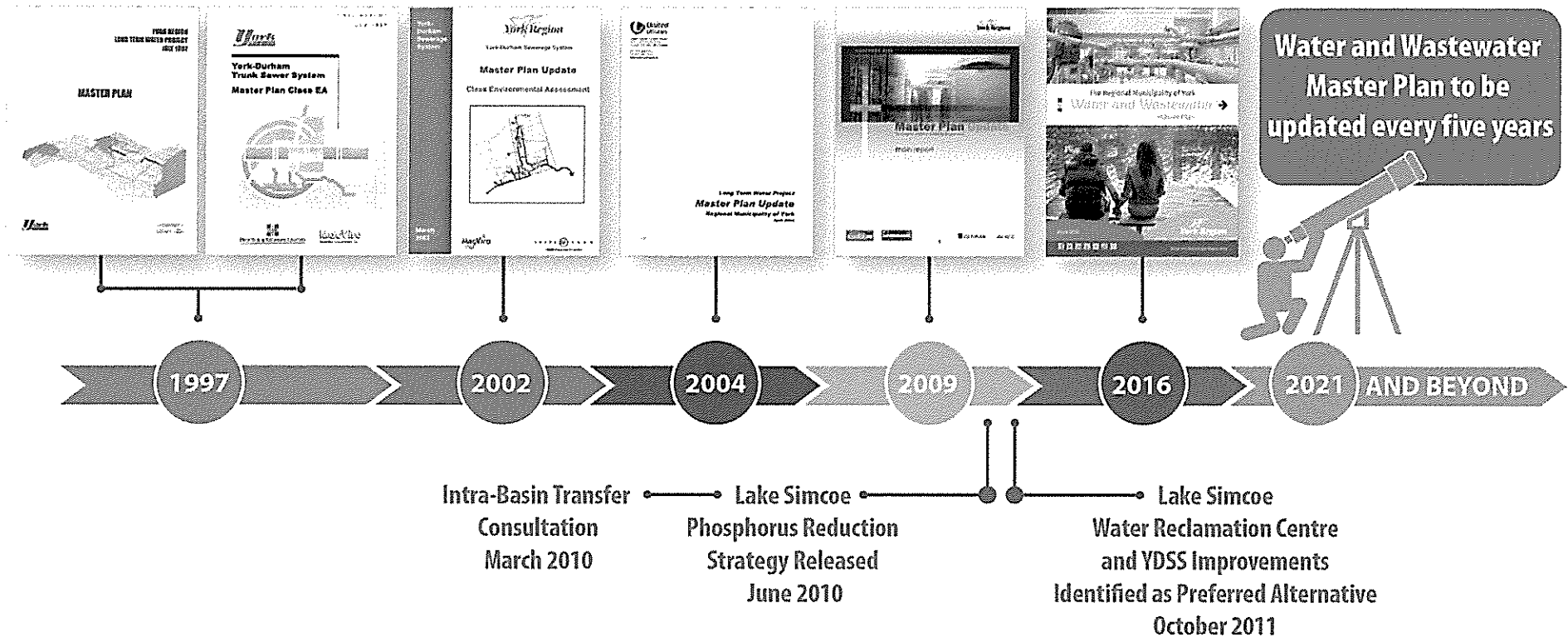
June 1st, 2016



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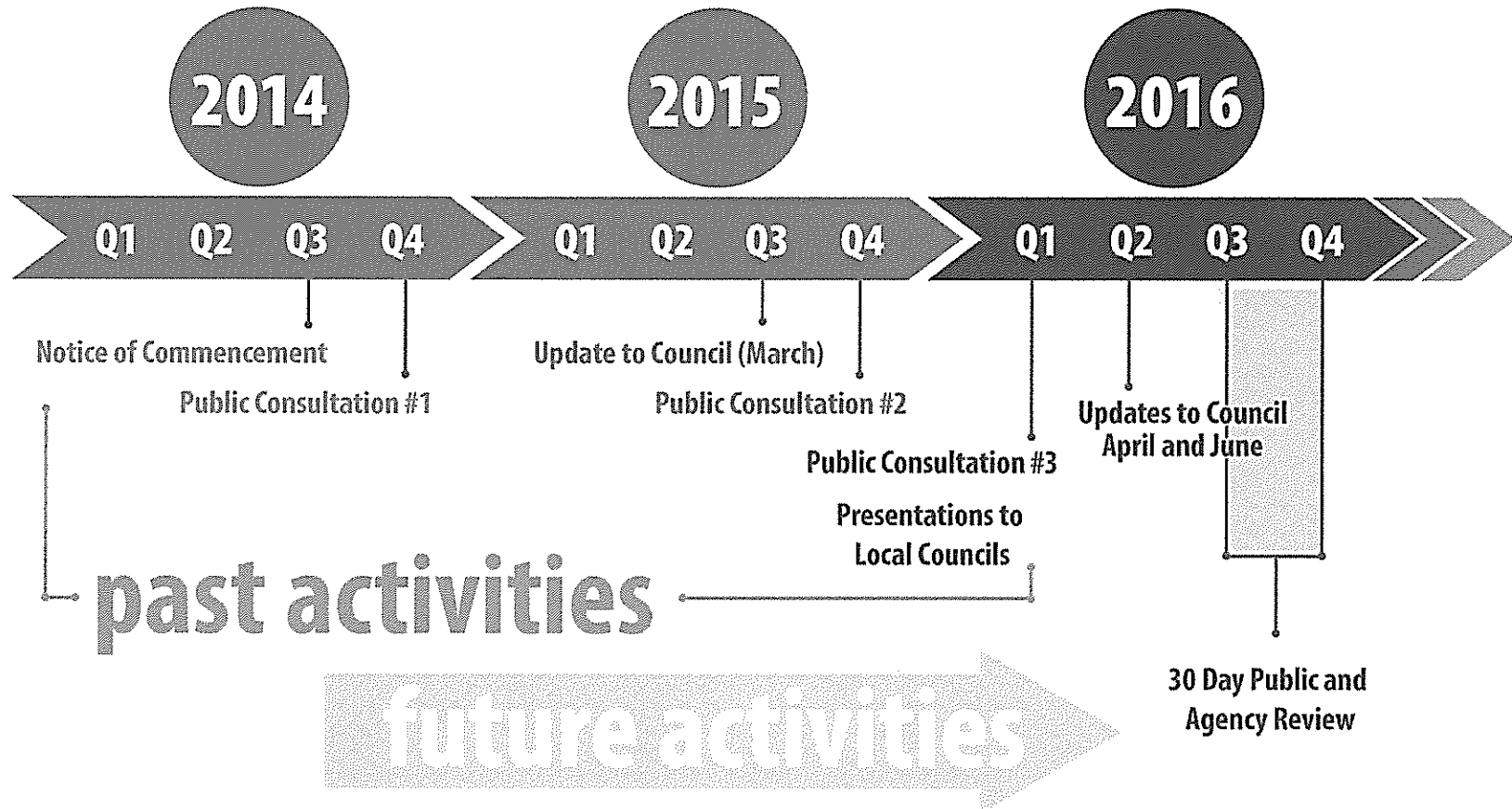
C15 10

Water and Wastewater Master Plan: Living Process



Master Plan is a Living Document That Builds Upon Earlier Work

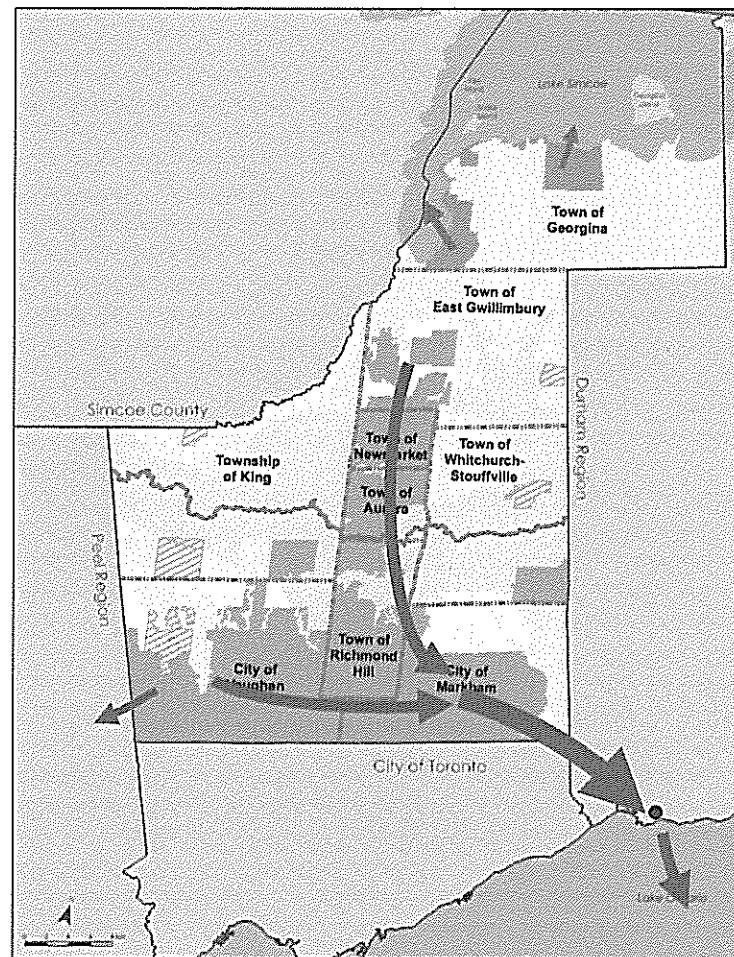
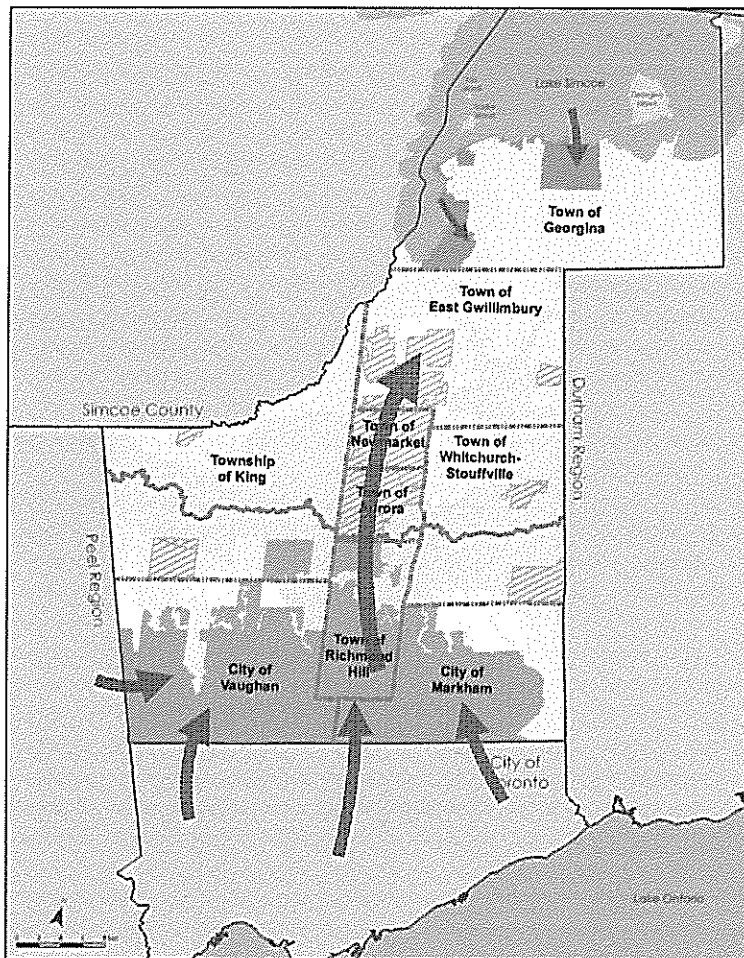
Master Plan Schedule



Regional Council Endorsement Planned for June 2016

2009 Master Plan

Water & Wastewater Servicing Strategy

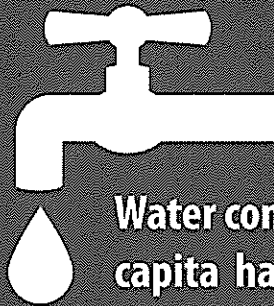


**2009 Master Plan Recommended Servicing East Gwillimbury
From Lake Ontario and Through Expansion of YDSS**

What Has Changed Since 2009 Master Plan?

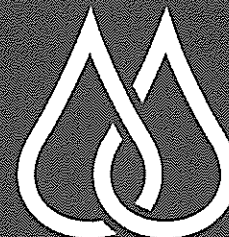


**Completion of Upper York
Sewage Solutions Individual
Environmental Assessment**



**Water consumption per
capita has dropped by**

20%
since 2009

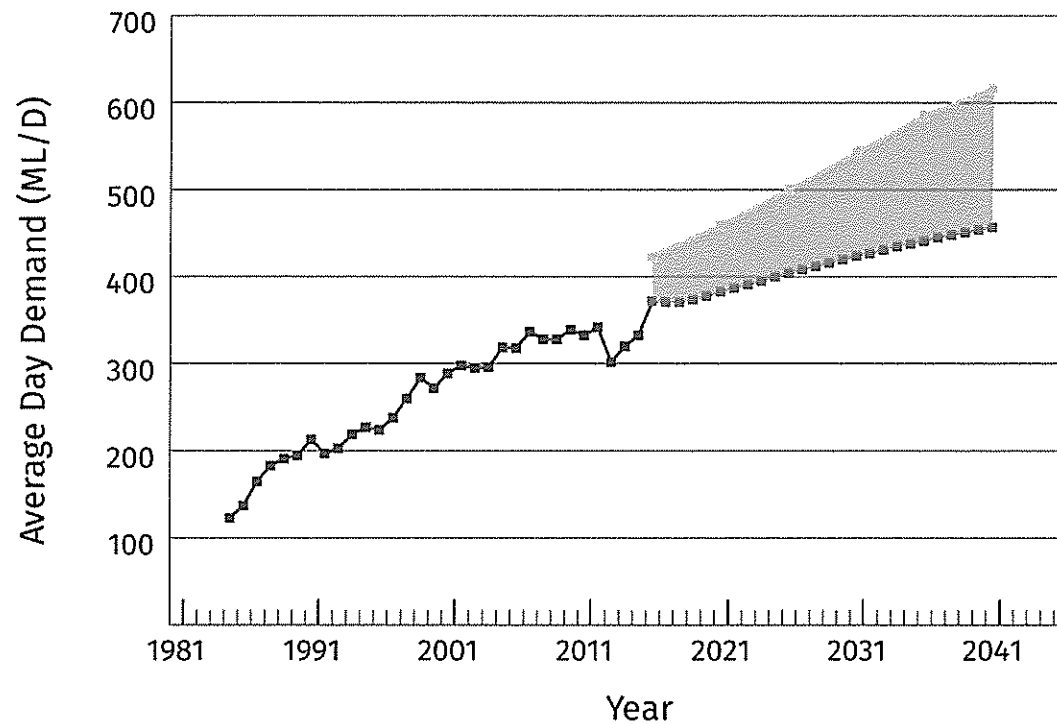


**Intra-basin Transfer
from Lake Ontario
limited to 105 MLD**

**Upper York Environmental Assessment Changed
2009 Master Plan Servicing Strategy**

What Has Changed Since 2009 Master Plan?

York Region Average Day Demand Projection

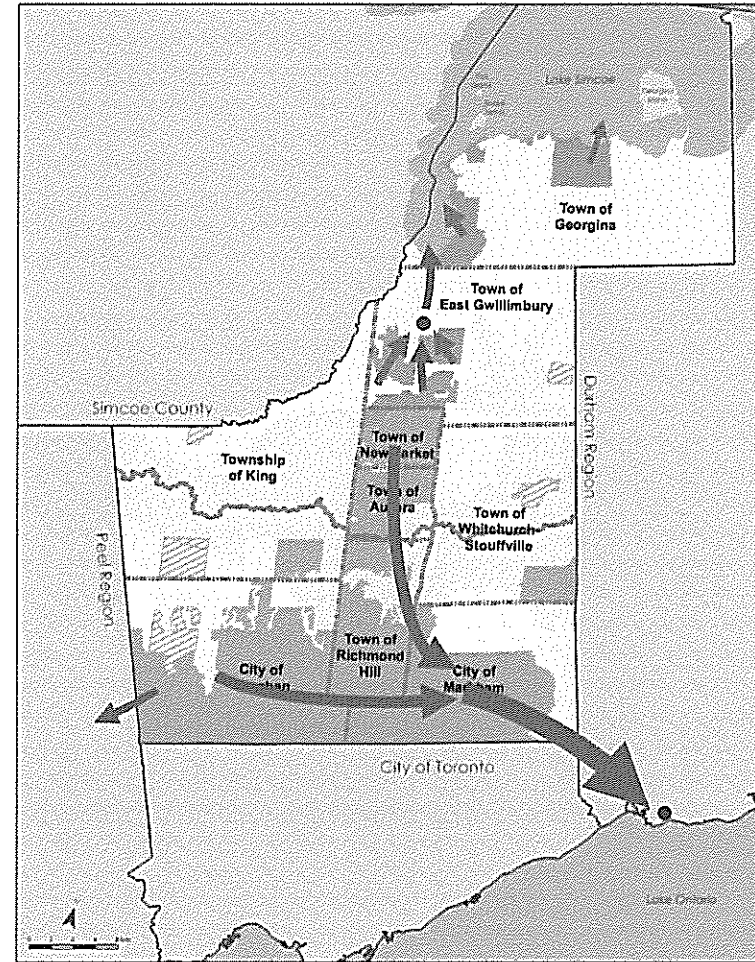
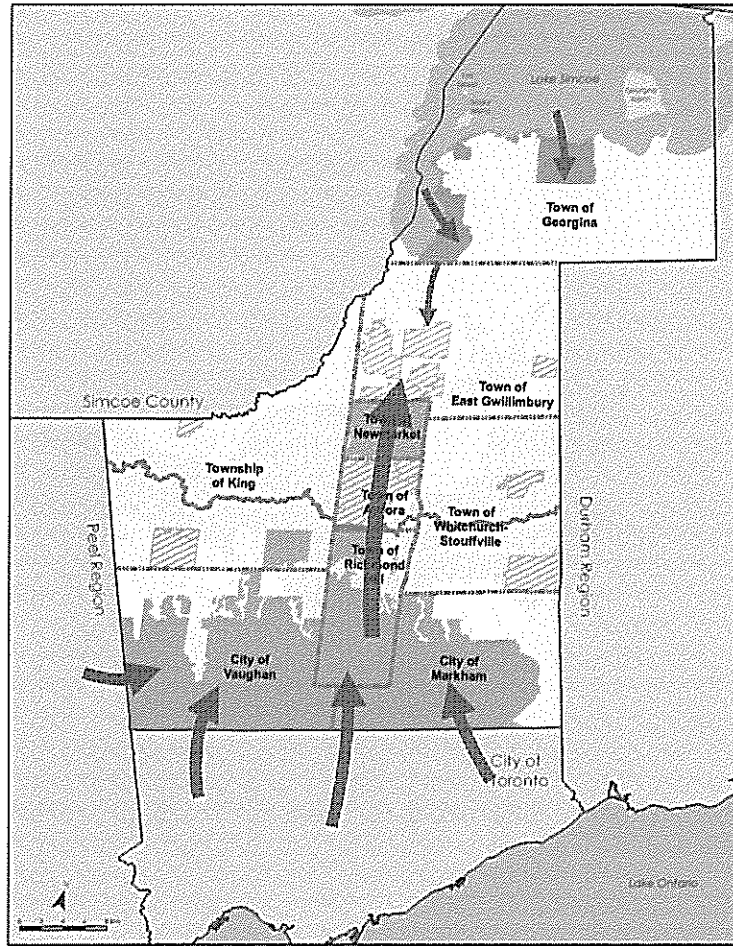


—■— Historical Average Day Demand - - - 2009 Master Plan Average Day Demand
- - - 2016 Master Plan Average Day Demand ■ Water Savings Due to Conservation

Water Conservation Has Successfully Reduced Demand

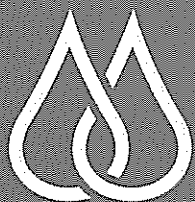
2016 Master Plan

Water & Wastewater Servicing Strategy

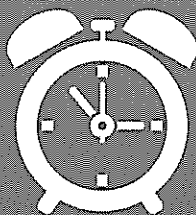


**2016 Master Plan Recommendation in Alignment with
Upper York Sewage Solutions Environmental Assessment**

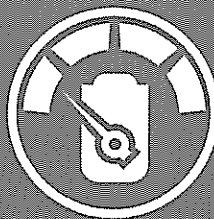
Benefits of Supplementing with Lake Simcoe Water



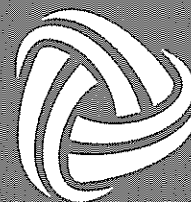
**Less Intra-basin
Transfer**



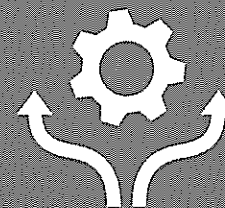
**Shorter
Water Age**



**Less Energy
Consumption =
Fewer Greenhouse
Gas Emissions**



**Diversity of
Supply**



**Operational
Flexibility**

**Lake Simcoe Strategy Better Aligns with Provincial Legislation
and Provides Technical and Environmental Benefits**

Non Infrastructure Solutions to meet Growth Demand

- Long-Term Water Conservation Strategy updated in March 2016
- Increase focus in water reuse
- No additional water supply capacity is required from Toronto and Peel beyond the existing servicing agreements

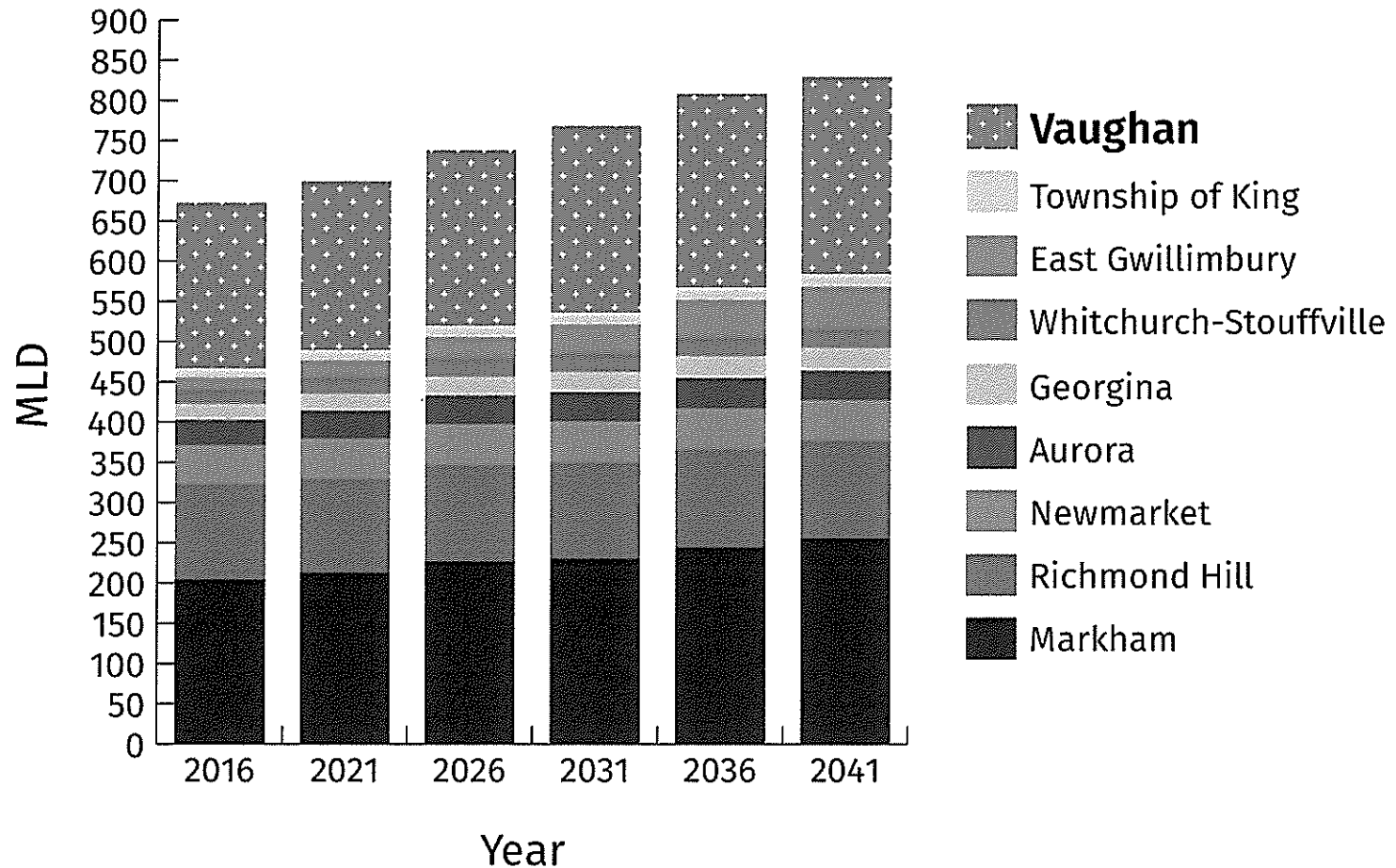
Water Conservation is integral part of Master Plan Servicing Strategy

Non Infrastructure Solutions to meet Growth Demand

- Inflow and Infiltration Reduction Strategy updated in March 2016
- Increase focus in reducing inflow and infiltration from new developments and private properties
- Wastewater treatment capacity under existing agreement with Peel is sufficient to service west Vaughan to 2041 and beyond
- Duffin Creek Outfall and Primary Trunk are major downstream system improvement projects required before 2041

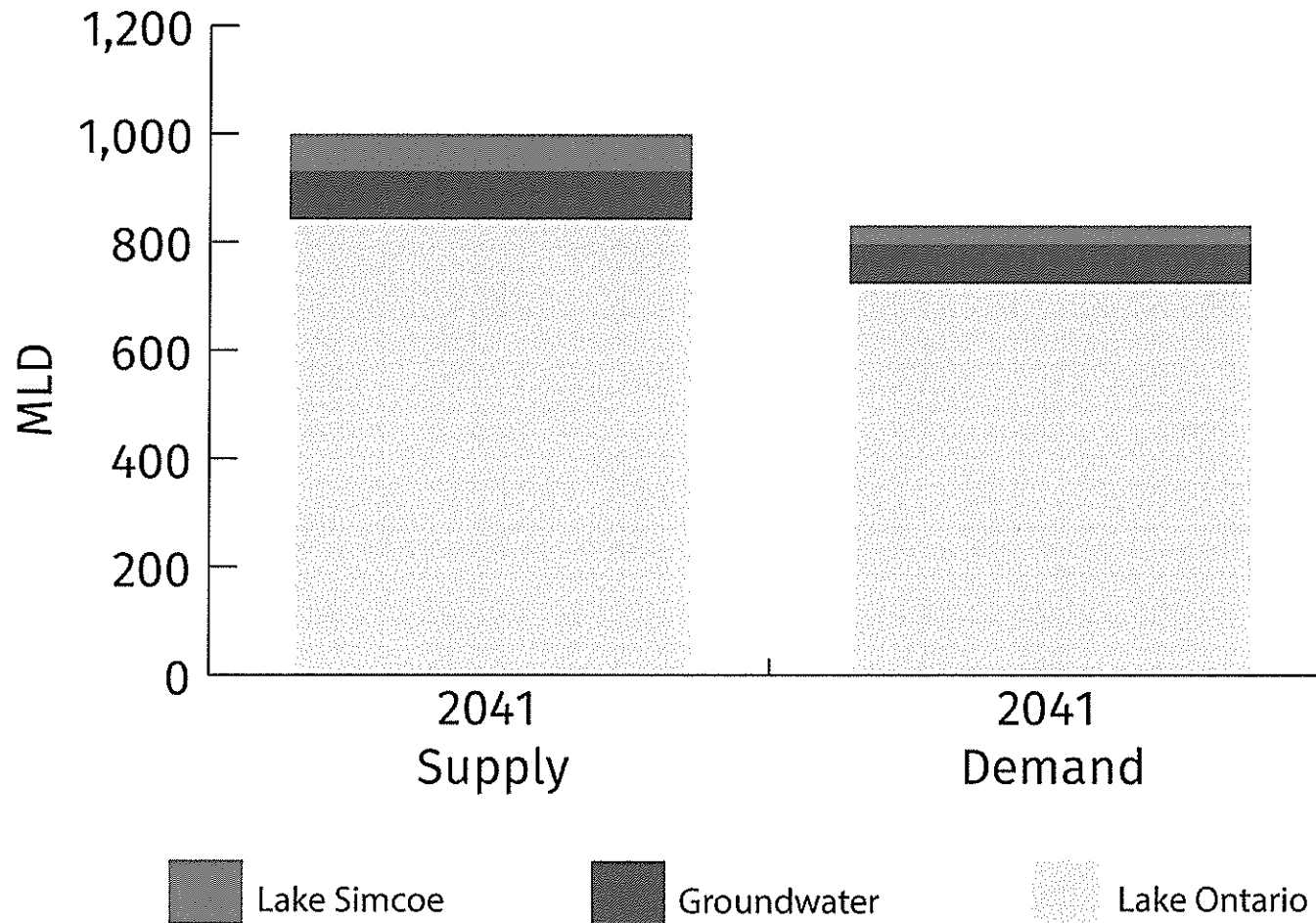
Inflow and Infiltration is integral part of Master Plan Servicing Strategy

Regional Water Demand



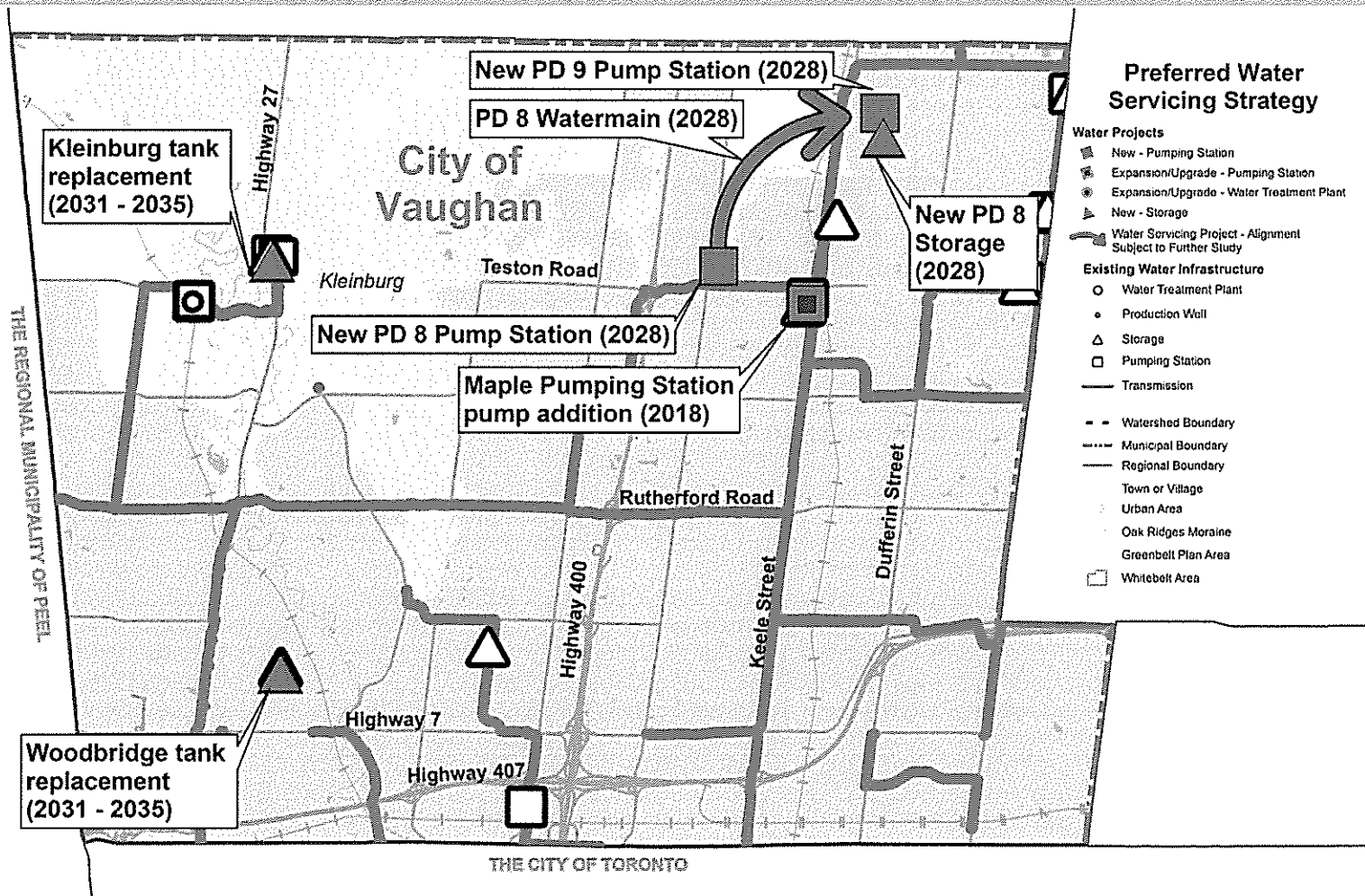
Vaughan Drinking Water Demand is 30% of Region's Total

York Region Water Supply Sources



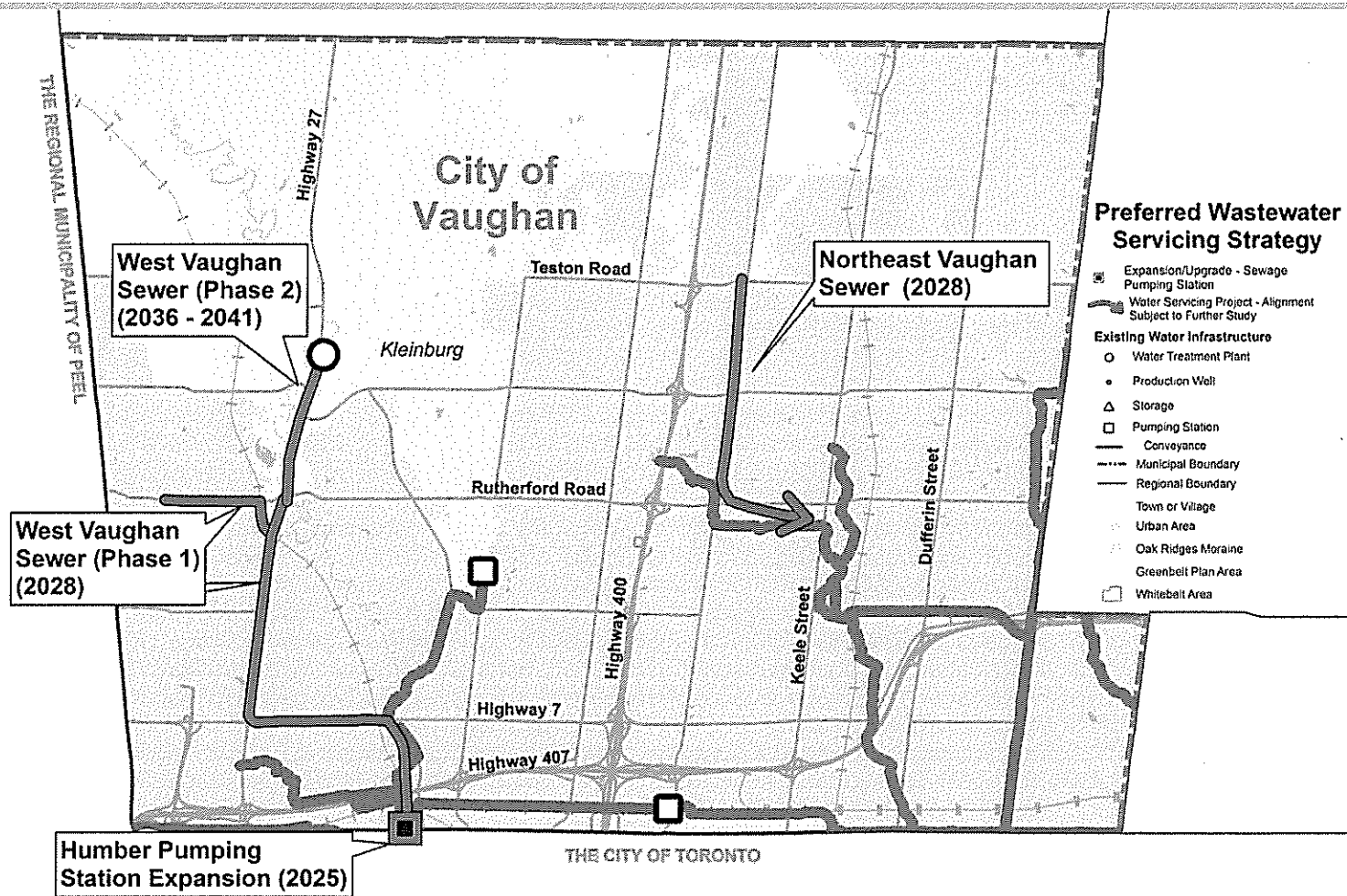
Supply Greater Than 2041 Demand

Major Water Infrastructure in Vaughan



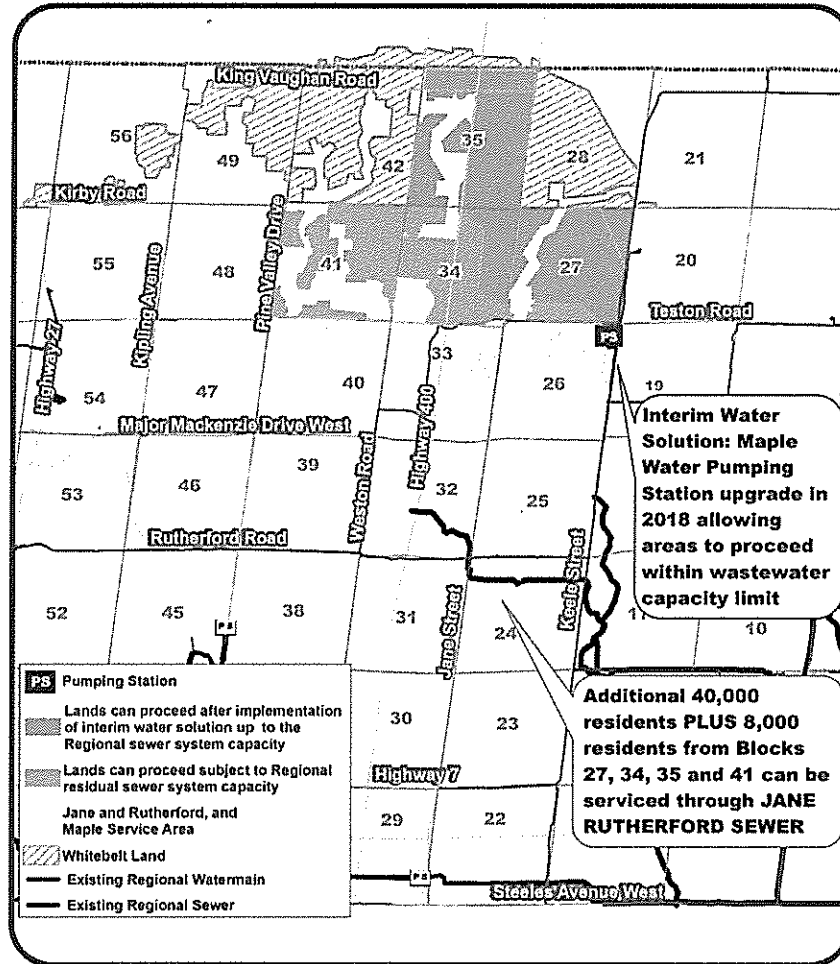
Total Cost of Water Infrastructure: \$96M

Major Wastewater Infrastructure in Vaughan



Total Cost of Water Infrastructure: \$402M

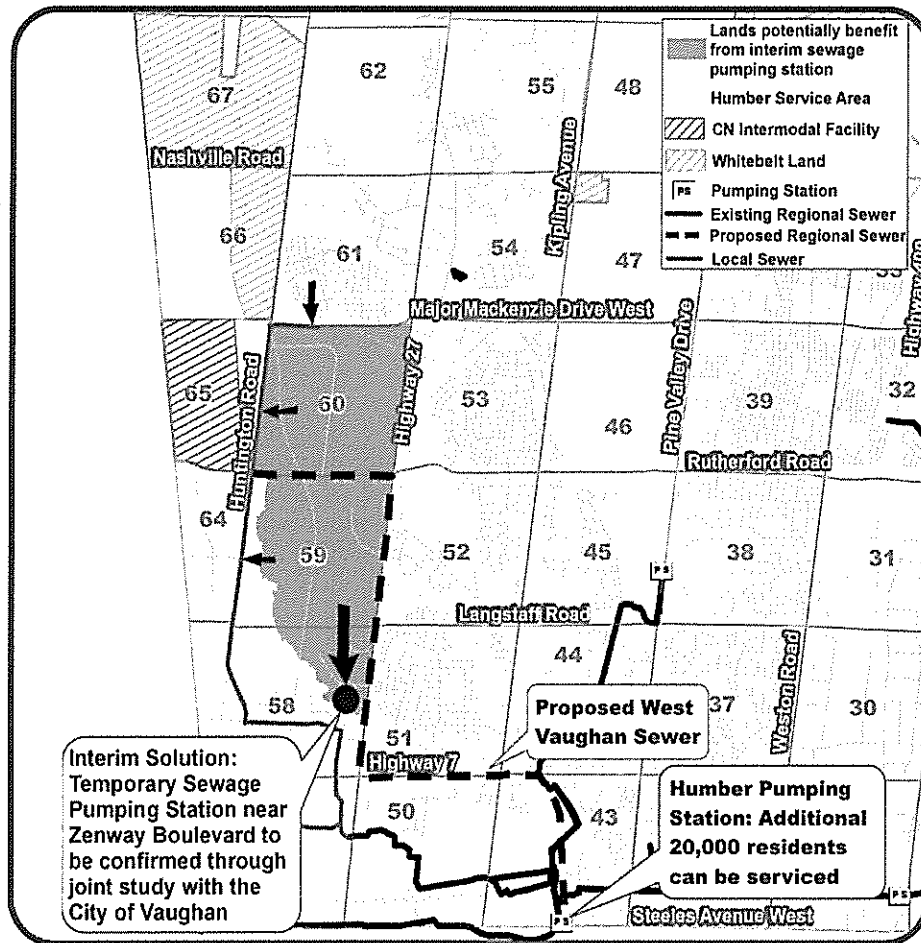
Northeast Vaughan Interim Servicing



- Northeast Vaughan water and wastewater servicing project scheduled for completion in 2028
- Prior to completion of Northeast Vaughan project, Regional Jane Rutherford Sewer can accommodate an additional 48,000 residents
- Upgrade to Maple Water Pumping Station in 2018 will provide interim water capacity

Continue to monitor wastewater flows and work with development industry

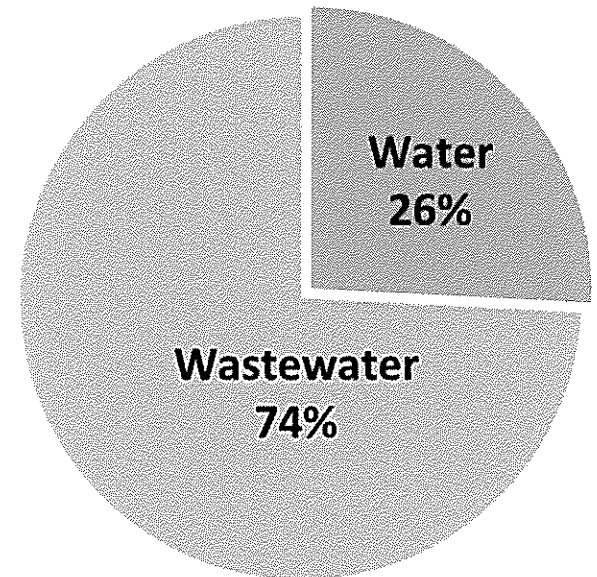
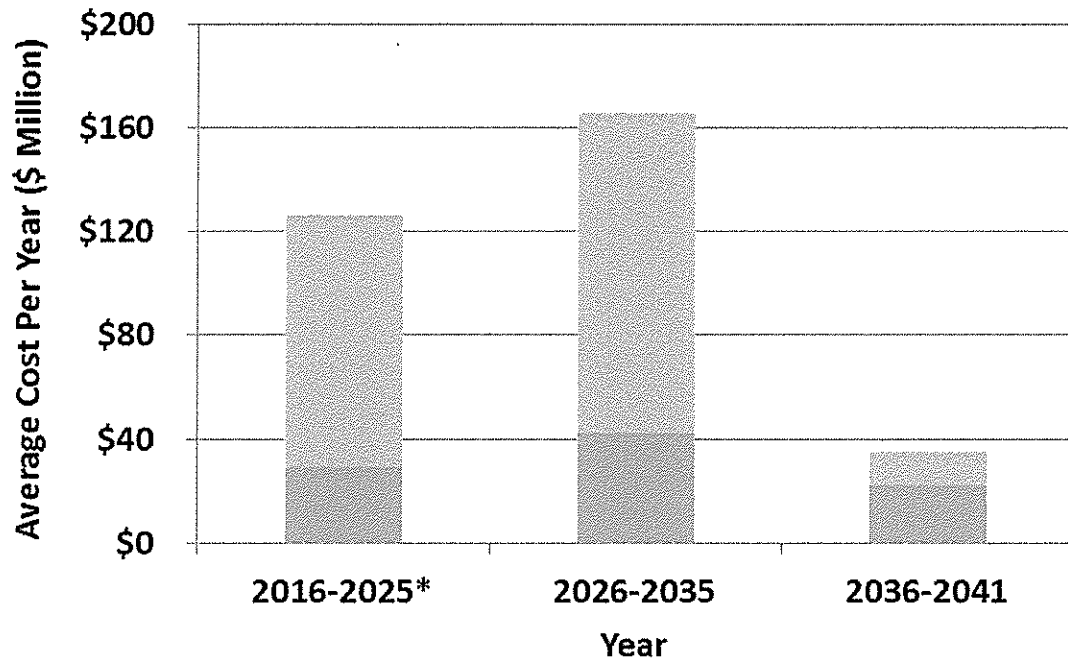
West Vaughan Interim Servicing



- West Vaughan Servicing to be completed in 3 stages:
 1. Humber Pumping Station Expansion (2025)
 2. West Vaughan Sewer - Phase 1 from Humber Pumping Station to Rutherford Rd. (2028)
 3. West Vaughan Sewer - Phase 2 extension from Rutherford Rd. to Kleinburg WRRF (between 2036 and 2041)
- Prior to completion of above works, Regional system can support an additional 20,000 people, with electrical upgrades to Humber Pumping Station recently completed

Continue to explore interim solutions through joint study

Master Plan Project Costs



* First ten year cost is in line with 2016 10-year capital plan

**Cost of Master Plan Projects is Approximately \$3.1B;
\$1.3B is Included in 2016 Ten Year Capital Plan**