



# WATER AND WASTEWATER CAPITAL INFRASTRUCTURE STATUS UPDATE

Presented to  
**COMMITTEE OF THE WHOLE**

Presented by  
**PINA ACCARDI**

Presented on  
**MAY 9, 2024**



# Presentation Objectives

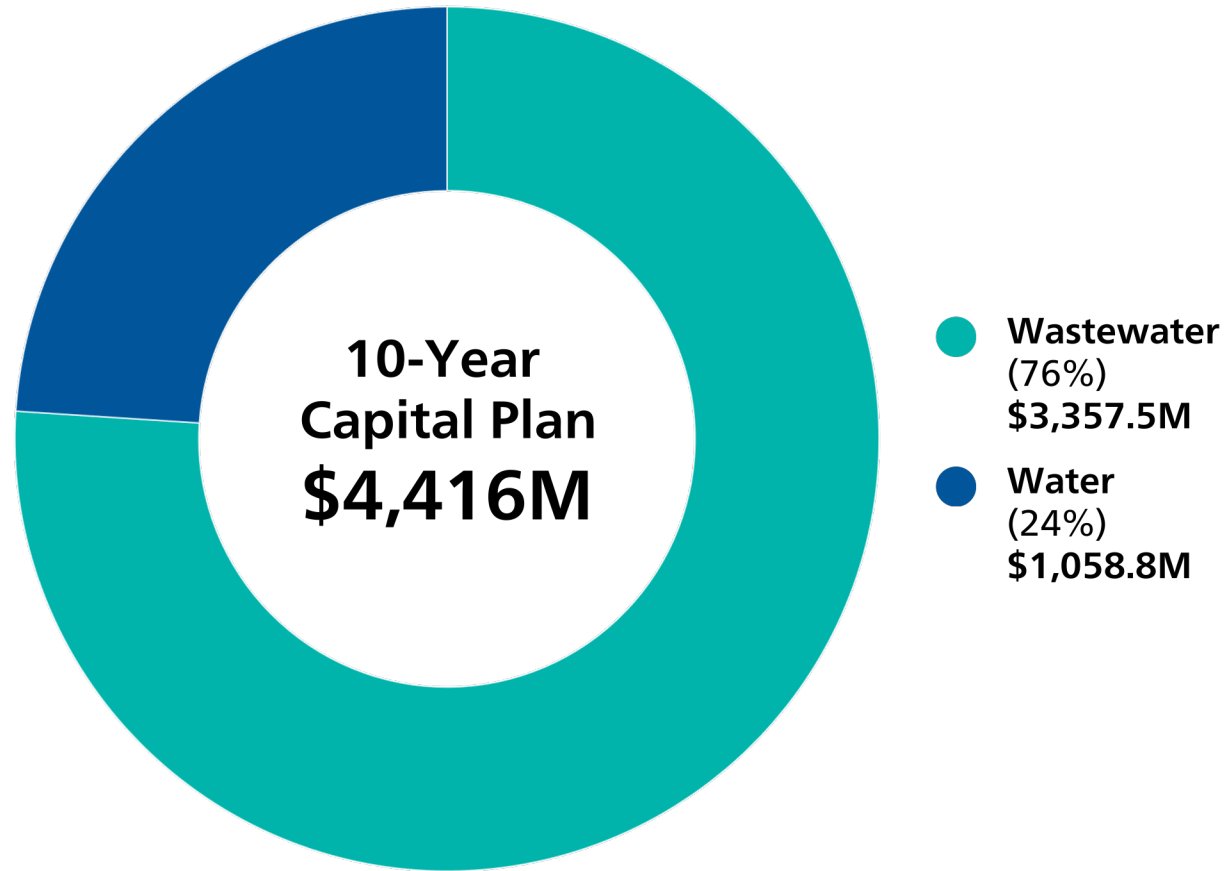
- 2024 10-Year Capital Water and Wastewater Program Overview
- Accomplishments
- Key Growth Infrastructure
- Supporting Growth Infrastructure
- Asset Management
  - Linear Infrastructure
  - Facilities
  - Duffin Creek Plant
- Market Landscape



**WATER AND WASTEWATER**

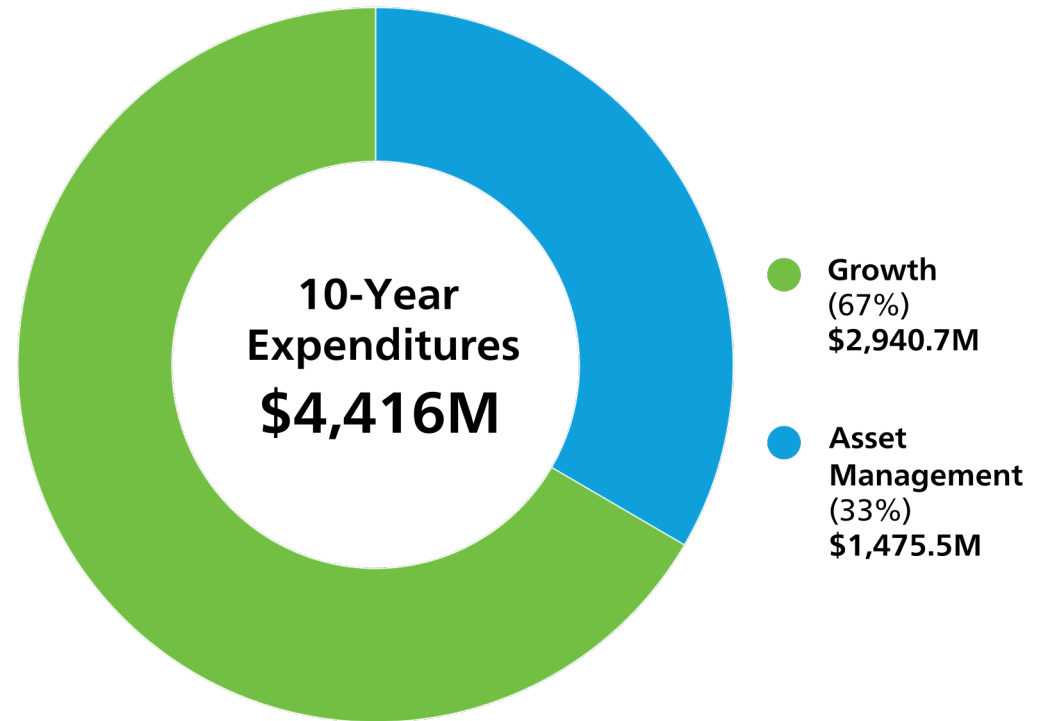
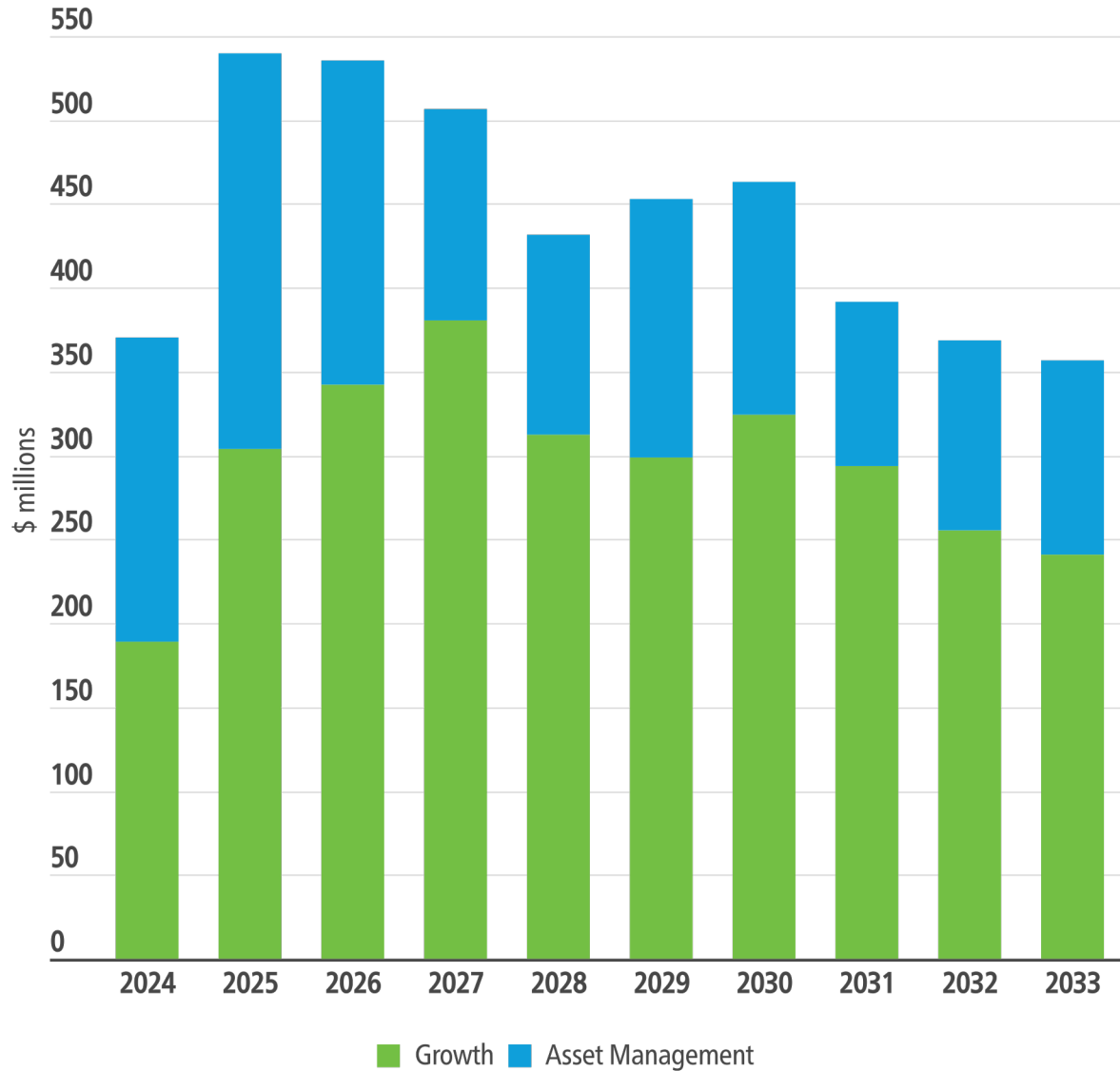
**2024 10-YEAR CAPITAL PROGRAM OVERVIEW**

# \$4.4 billion 10-Year Water and Wastewater Capital Budget



Water and Wastewater is 51% of Public Works' capital spending

# \$2.9 billion in Growth and \$1.5 billion in Asset Management



# Water and Wastewater Growth Deliverables



## Growth

55 km of sewer

35 km of watermain

3 new sewage pumping stations

2 new water pumping stations

5 new water storage facilities

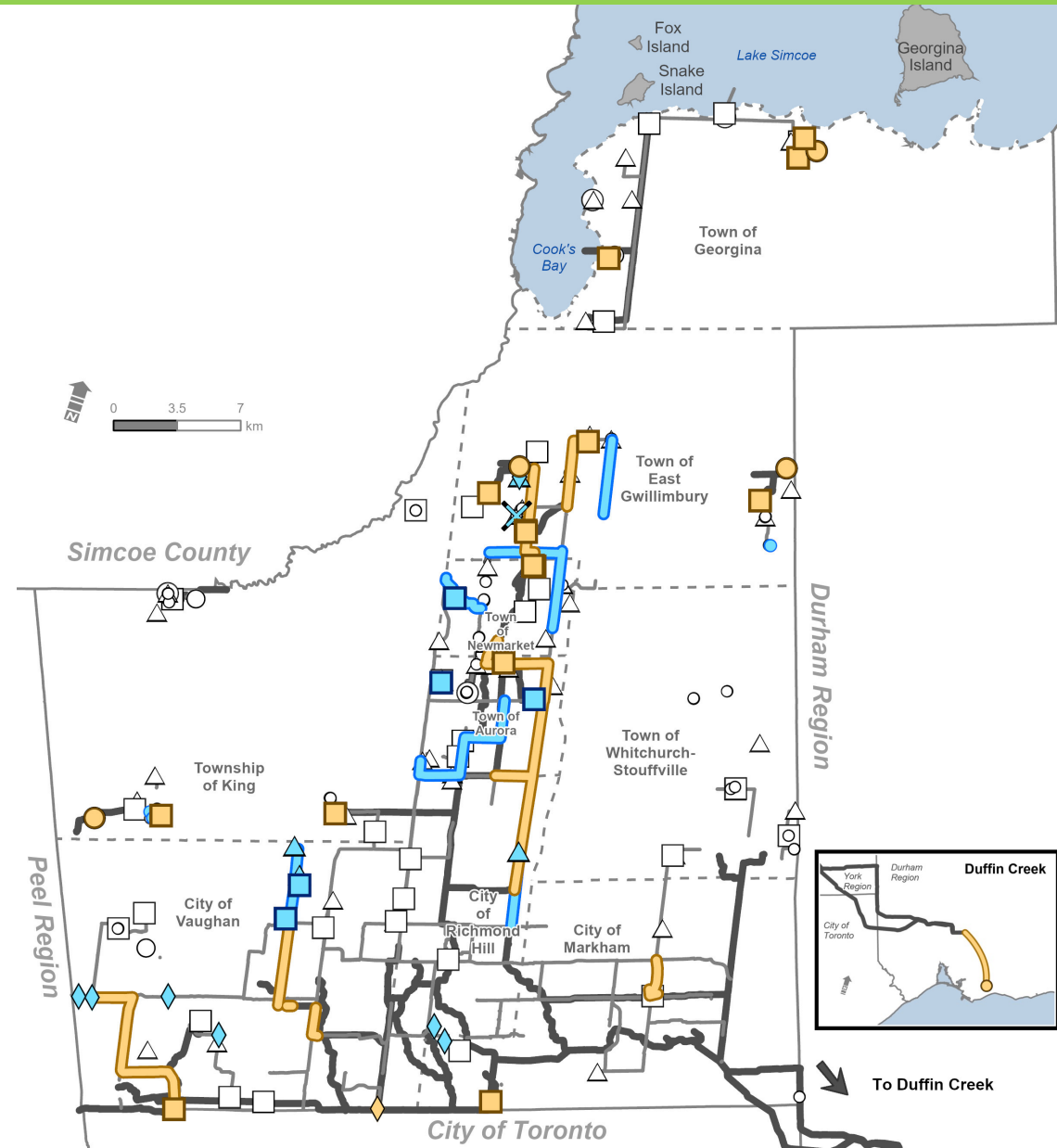
8 wastewater facility expansions

5 water facility expansions

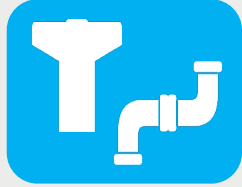
- | Water |                       |
|-------|-----------------------|
|       | Watermain             |
|       | Water Storage         |
|       | Pumping Station       |
|       | Water Treatment Plant |
|       | Interconnection       |
|       | Ground Water Well     |
- 
- | Wastewater |                                  |
|------------|----------------------------------|
|            | Gravity Sewer / Forcemain        |
|            | Equalization Tank                |
|            | Pumping Station                  |
|            | Water Resource Recovery Facility |
|            | Odour Control Facility           |
|            | Interconnection                  |

### BASE MAP INFORMATION

- |  |  |
|--|--|
|  | Existing Watermain                                       |
|  | Existing Trunk Sewer                                     |
|  | Equalization Tank / Water Storage                        |
|  | Pumping Station  |
|  | Water Resource Recovery Facility / Water Treatment Plant |
|  | Ground Water Well  |
|  | Odour Control Facility                                   |
|  | Interconnection  |
|  | To Be Decommissioned                                     |
|  | Chippewas of Georgina Island First Nation                |



# Water and Wastewater Asset Management Deliverables



## Asset Management

22 km of watermain

15 km of sewer

10 km of forcemain

100+ chambers to be rehabilitated

7 surface water facility upgrades

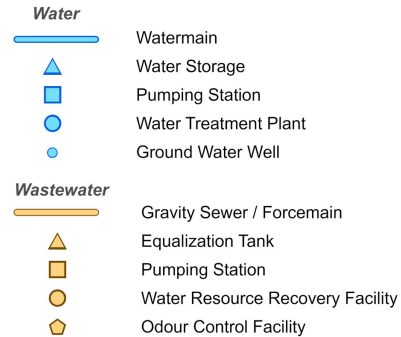
3 water pumping stations upgrades

14 groundwater treatment facility upgrades

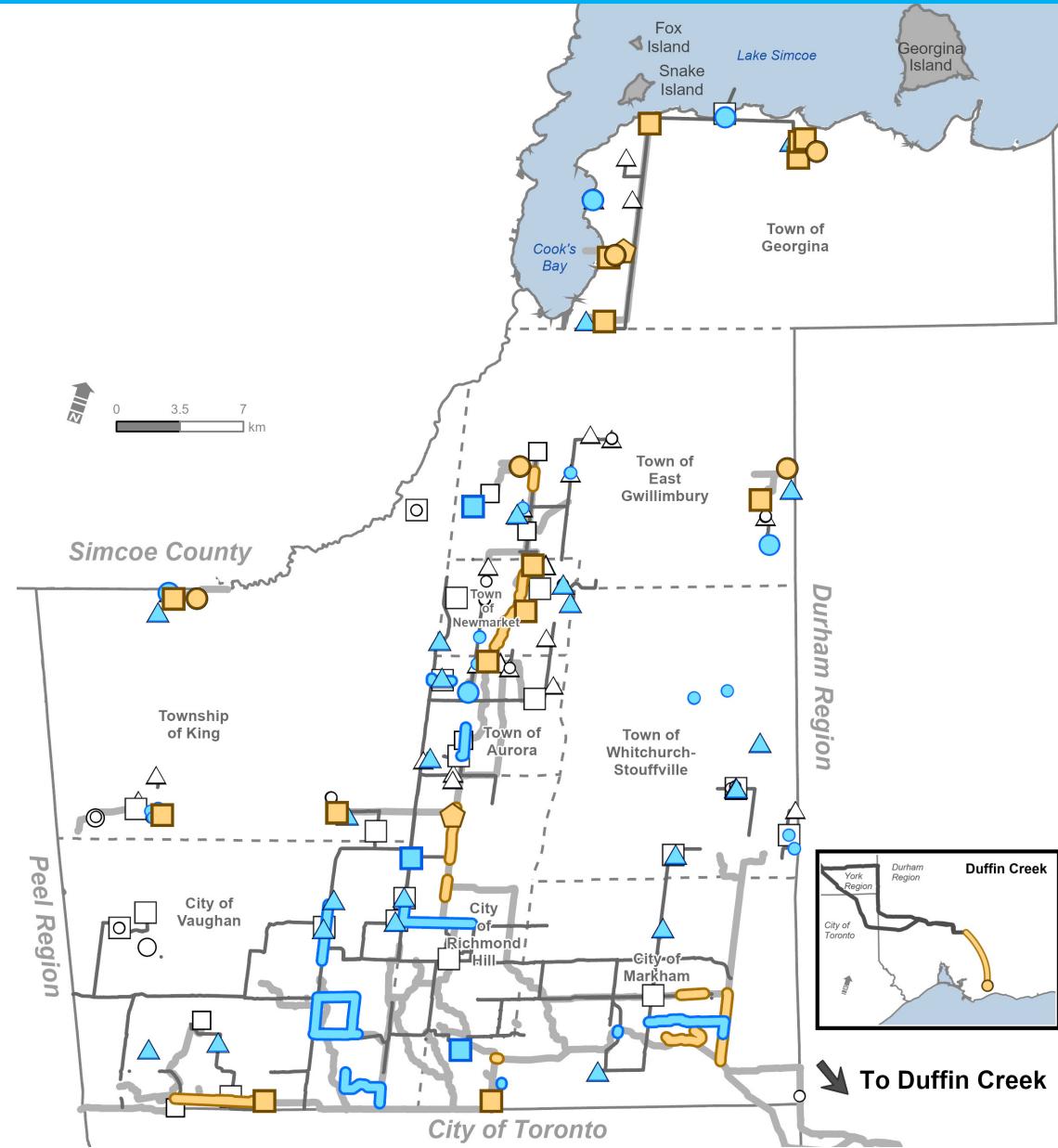
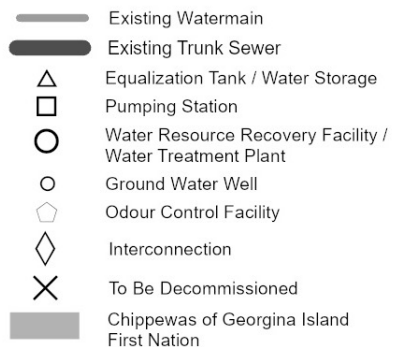
10 elevated tanks recoating and/or upgrades

5 in-ground storage reservoir rehabilitations

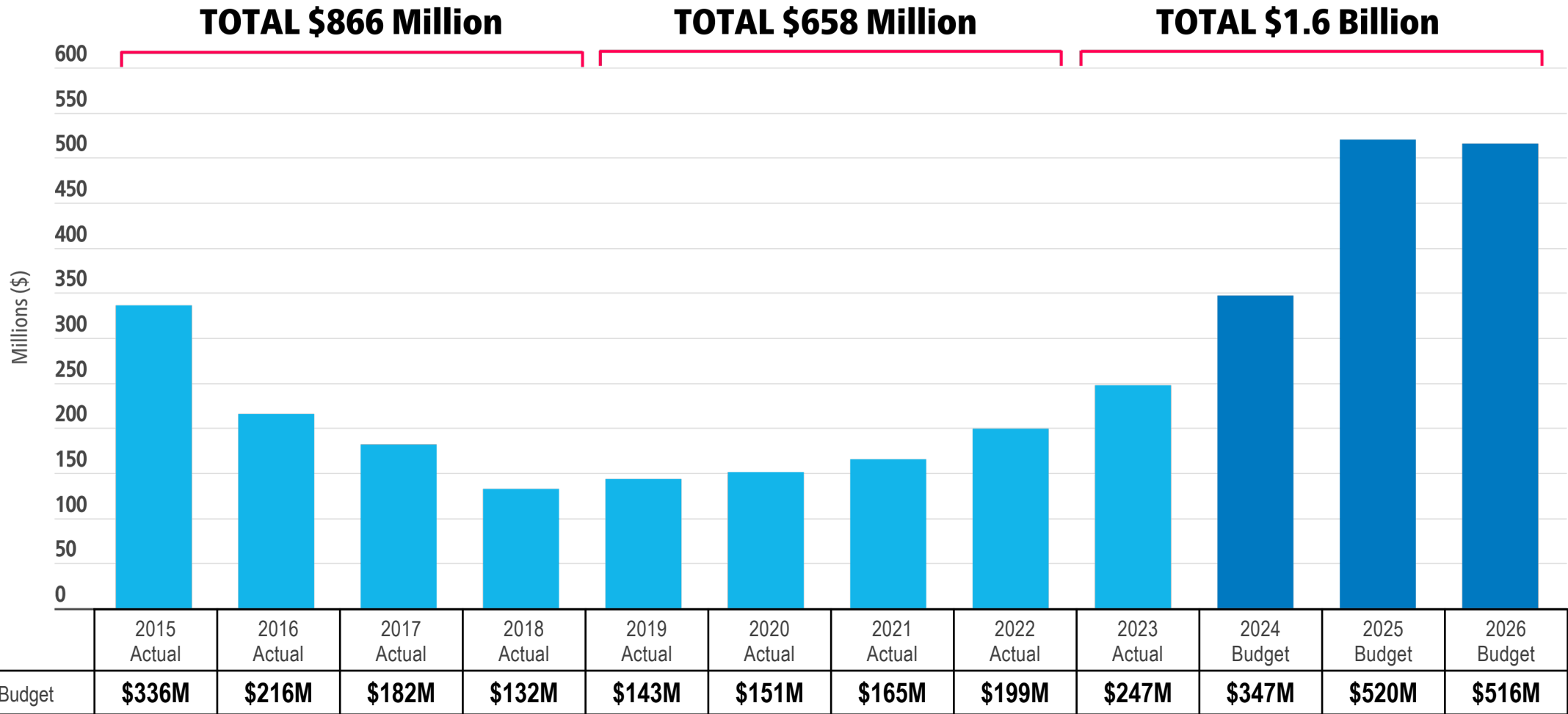
3 at-grade storage reservoir rehabilitations



### BASE MAP INFORMATION



# Record Investment in Water and Wastewater Programs

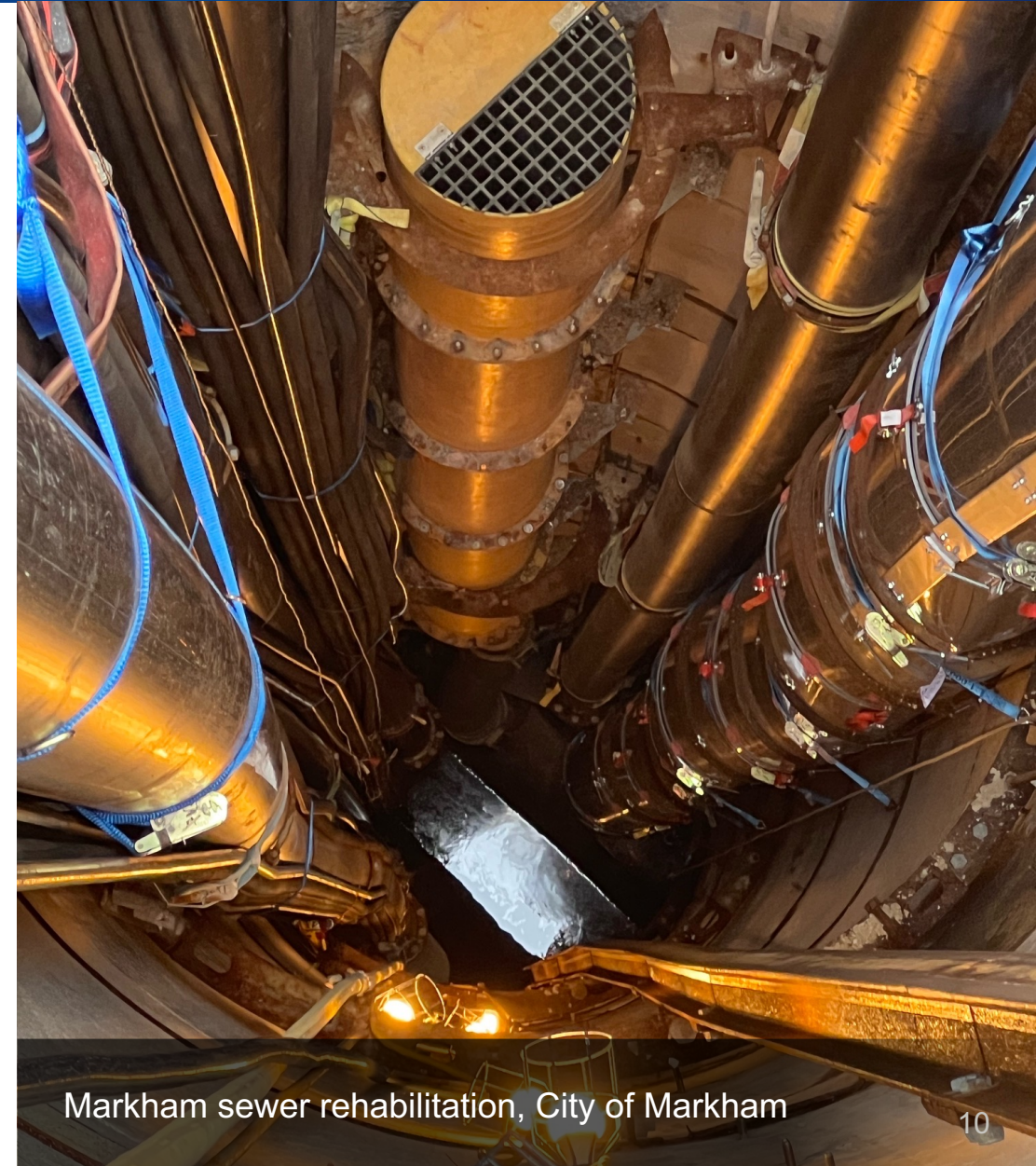




**ACCOMPLISHMENTS**

# Key Completions Towards Growth and System Resilience

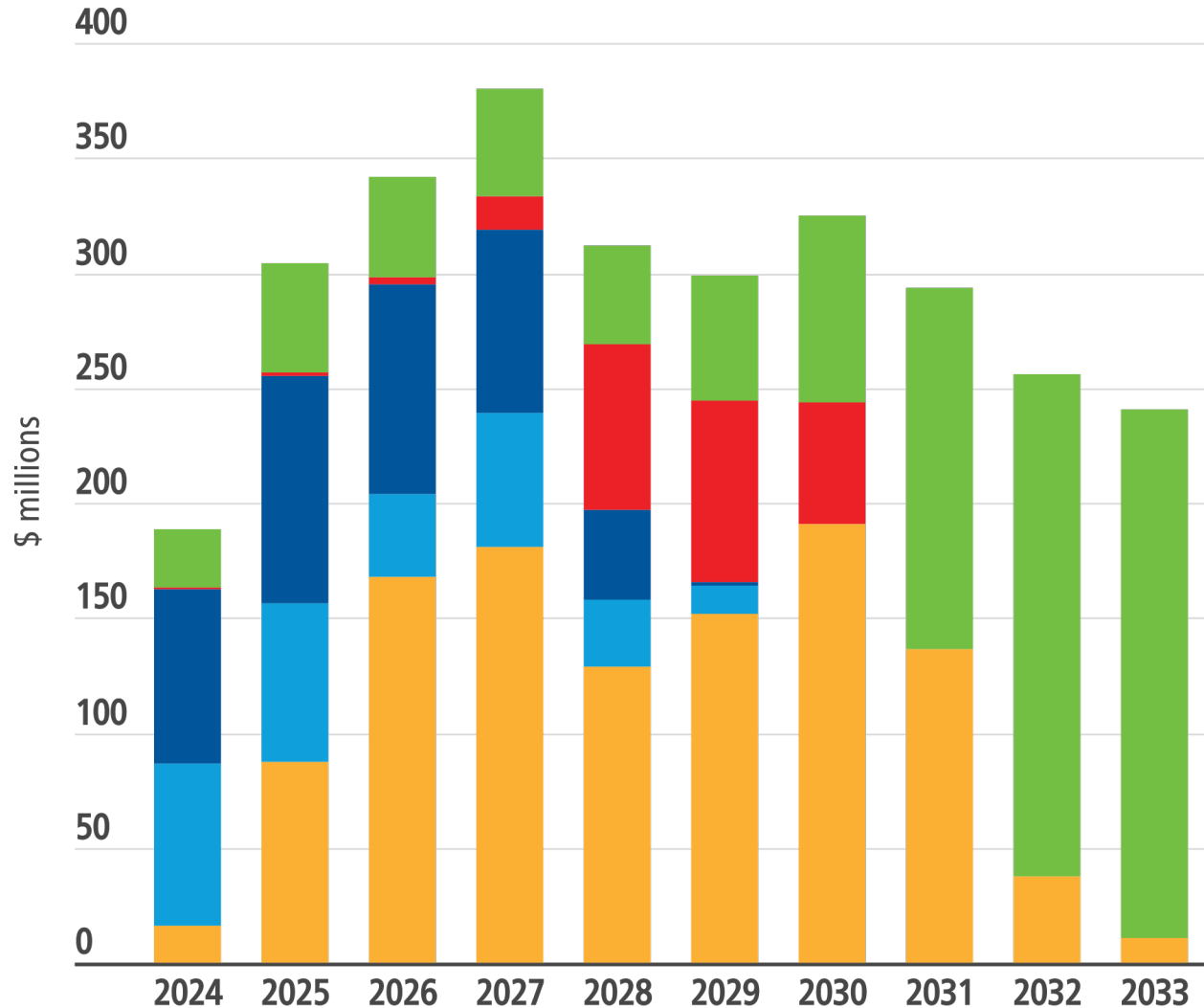
- York Region Sewage Works Project Provincial Approval
- Projects Commissioned
  - Henderson Sewage Pumping Station
  - Duffin Creek Phosphorus Reduction Action Plan Upgrades
- Key Growth Tenders Released
  - West Vaughan Wastewater Servicing – Tunnel
  - Northeast Vaughan Water and Wastewater Servicing – Phase 1
- Contract negotiations and agreements
  - Duffin Creek Engineering Services Partnership Agreement








Markham sewer rehabilitation, City of Markham

# KEY GROWTH INFRASTRUCTURE

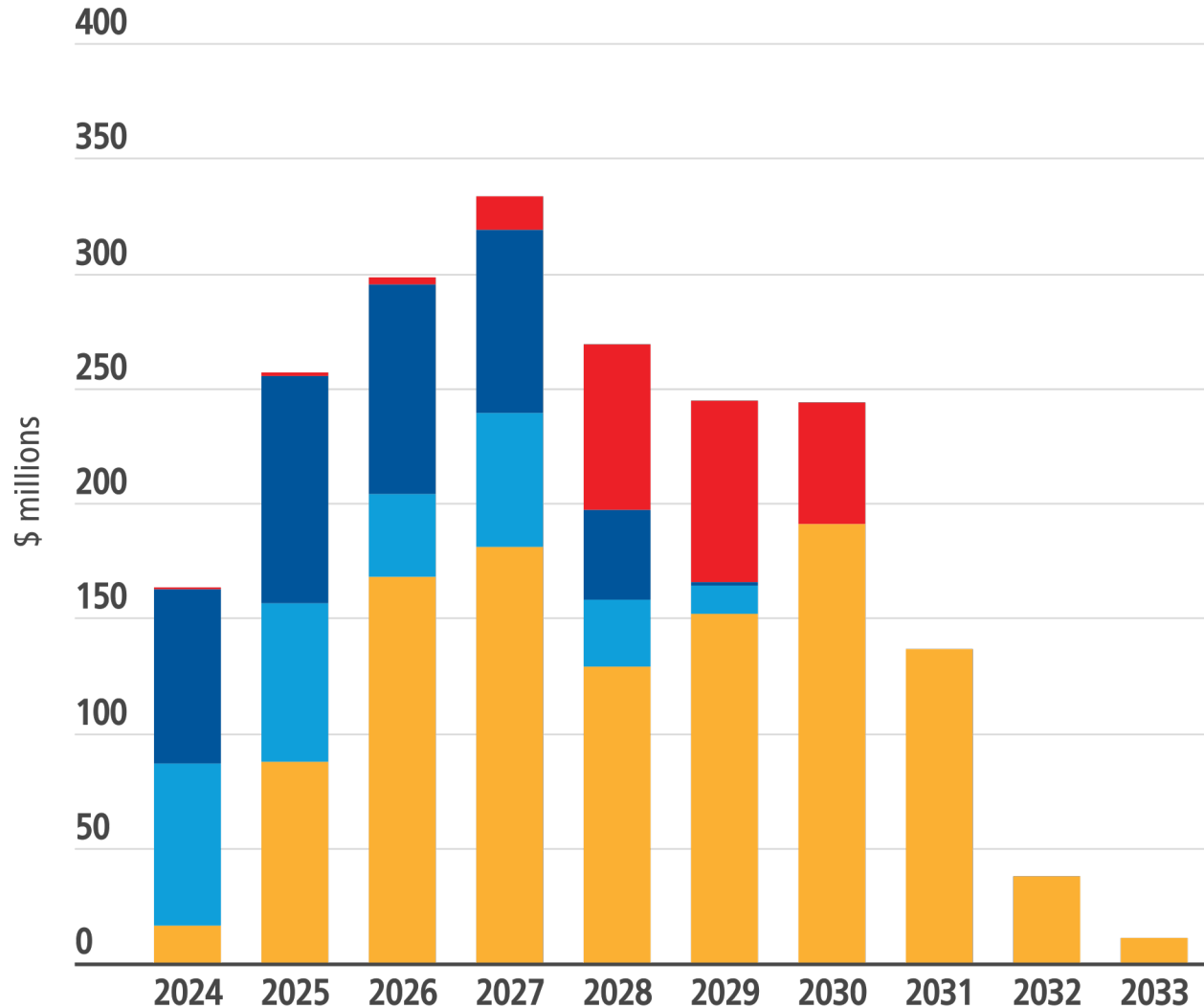
# 10-Year Capital Plan - Key Growth Infrastructure



**\$2.9B**





	Other	\$947.9M
	Primary Trunk Sewer Twinning	\$222.9M
	West Vaughan Sewage Servicing	\$387.7M
	Northeast Vaughan Servicing	\$274.2M
	North YDSS (York Durham Sewage System) Expansion	\$1,108.1M

# 10-Year Capital Plan - Key Growth Infrastructure



**\$2.0B**

**These 4 projects represent 68% of growth expenditures in the 10-Year Capital Plan**

	Primary Trunk Sewer Twinning	\$222.9M
	West Vaughan Sewage Servicing	\$387.7M
	Northeast Vaughan Servicing	\$274.2M
	North YDSS (York Durham Sewage System) Expansion	\$1,108.1M

# North YDSS Expansion



STATUS  
PRE-DESIGN



501.0M  
(PHASE 1)



## Proposed Projects and Phasing

### Phase 1 (2023 - 2028)

Estimated Cost \$500+ million

- Y1-A1 Leslie Street Trunk Sewer
- Y4 Newmarket SPS Upgrade
- Y6 2nd Concession SPS Upgrade
- Y10 Aurora SPS Gravity Sewer Twinning
- Y12-A/B 2nd Concession North and South Gravity Sewer
- Y14 Bloomington Interceptor Sewer

### Phase 2 (2026 - 2031)

Estimated Cost \$550-650 million

- Y1-A2 Leslie Street Trunk Sewer
- Y3-A/C Aurora East SPS Gravity Interconnection and Forcemain
- Y3-B Aurora East SPS
- Y11-A Queensville East SPS
- Y11-B Queensville East Forcemain
- Holland Landing Lagoons Decommissioning

### Phase 3 (2029 - 2041)

Estimated Cost \$500-600 million

- Y1-B Yonge Street Sewer Rehabilitation
- Y5 Bogart SPS Upgrade
- Y7 Queensville West SPS Upgrade
- Y8 Holland Landing SPS Upgrade
- Y9-A Newmarket East SPS
- Y9-B Newmarket East Forcemain
- Y13-A/C Leslie Street Trunk Sewer Phase 3, Forcemain
- Y13-B Leslie Street Trunk Sewer Phase 3, Mulock SPS

### Legend

- Existing York Durham Sewage System
- Municipal Boundary
- Oak Ridges Moraine

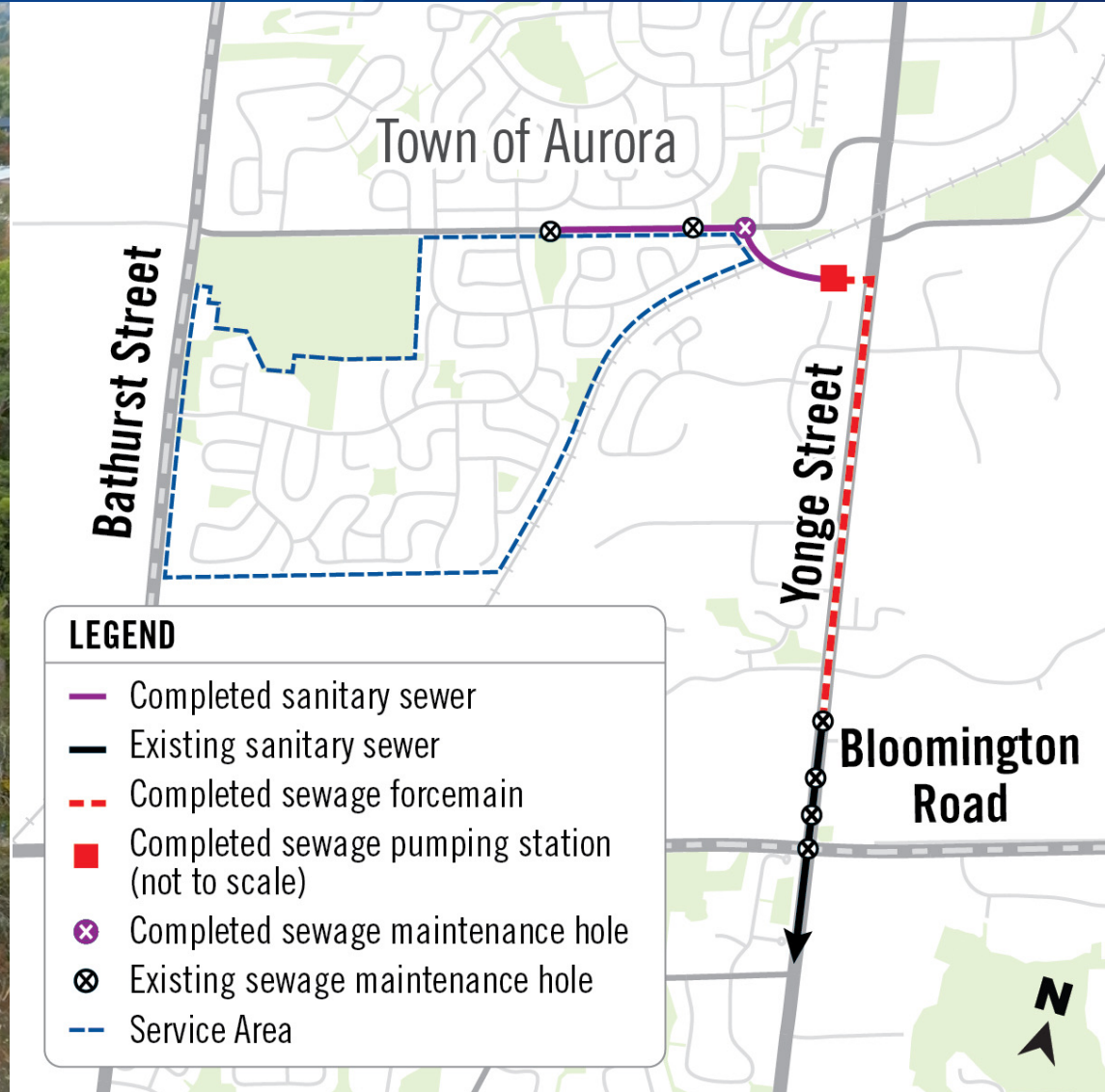
# Interim Servicing: Henderson Pumping Station

 STATUS COMPLETE

 44.6M



Henderson Pumping Station, Town of Aurora



Disaster Mitigation and Adaptation Funding

# Duffin Creek Phosphorus Reduction Action Plan Upgrades



STATUS  
COMPLETE



13.7M



Installed Density Current Baffles for Stage 1 Secondary Clarifiers (part of Phosphorus Action Reduction Plan project), City of Pickering



# Primary Trunk Sewer



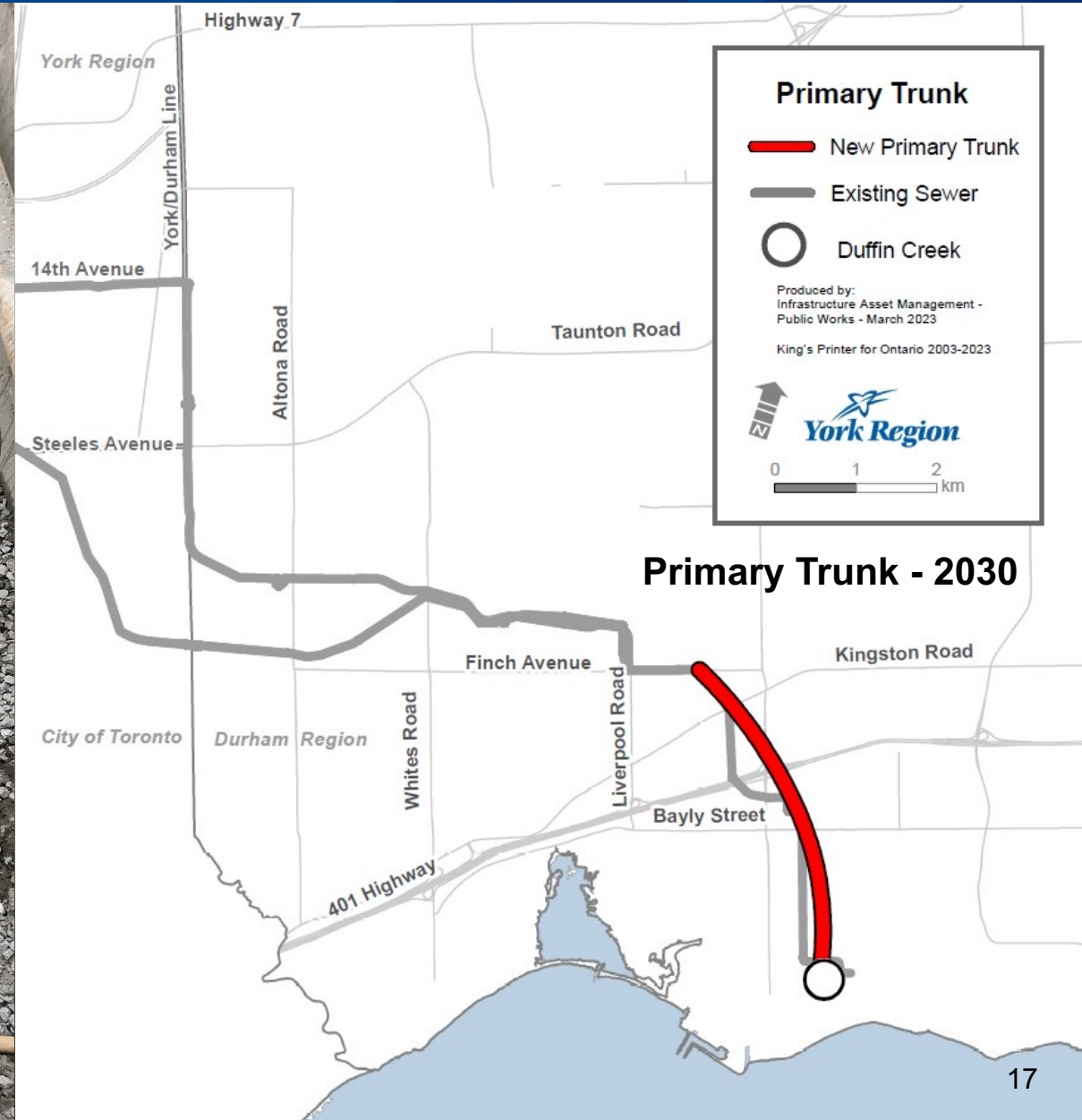
STATUS  
PRE-DESIGN



230.6M



Structural condition assessment on the Primary Trunk Sewer



# West Vaughan Sewage Servicing



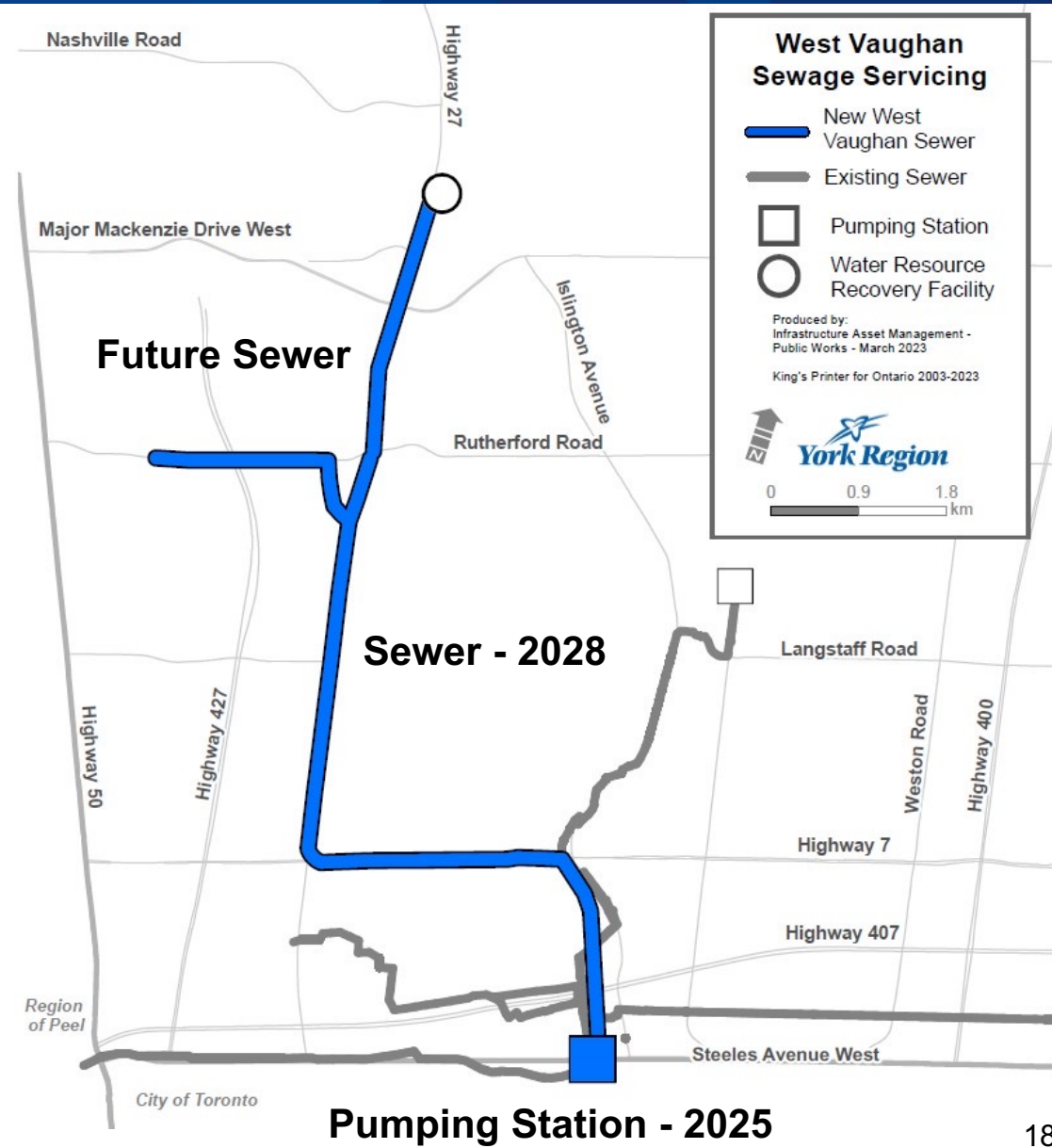
STATUS  
CONSTRUCTION



519.2M



Construction of the Humber Sewage Pumping Station, City of Vaughan



# Northeast Vaughan Servicing - Wastewater



STATUS (PHASE 1)  
TENDERING



203.8M



Alignment of the Northeast Vaughan sewer on Keele Street, City of Vaughan

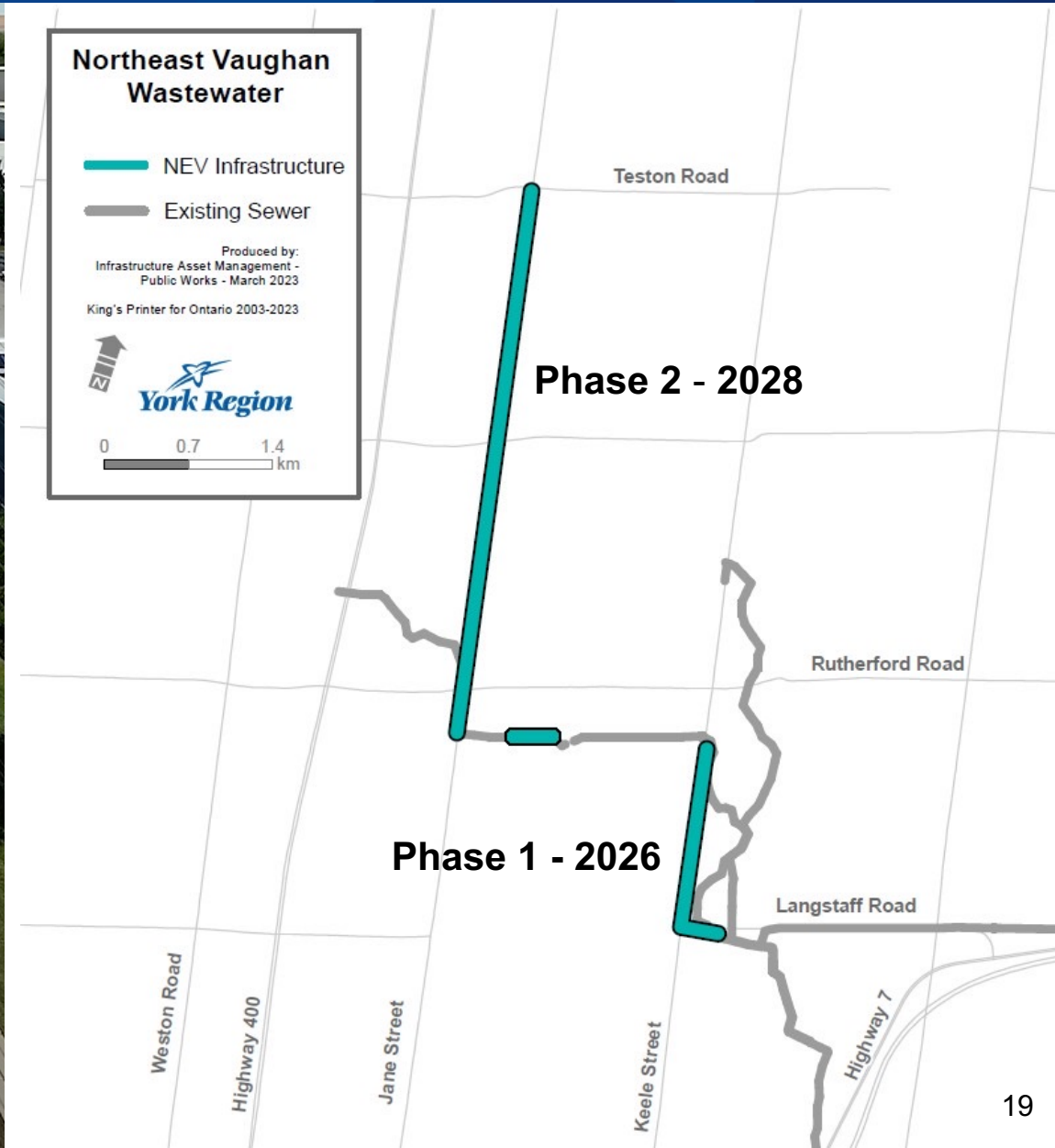
**Northeast Vaughan Wastewater**

— NEV Infrastructure  
— Existing Sewer

Produced by:  
Infrastructure Asset Management -  
Public Works - March 2023

King's Printer for Ontario 2003-2023

0 0.7 1.4 km



# Northeast Vaughan Servicing - Water



STATUS (PHASE 1)  
TENDERING



130.9M



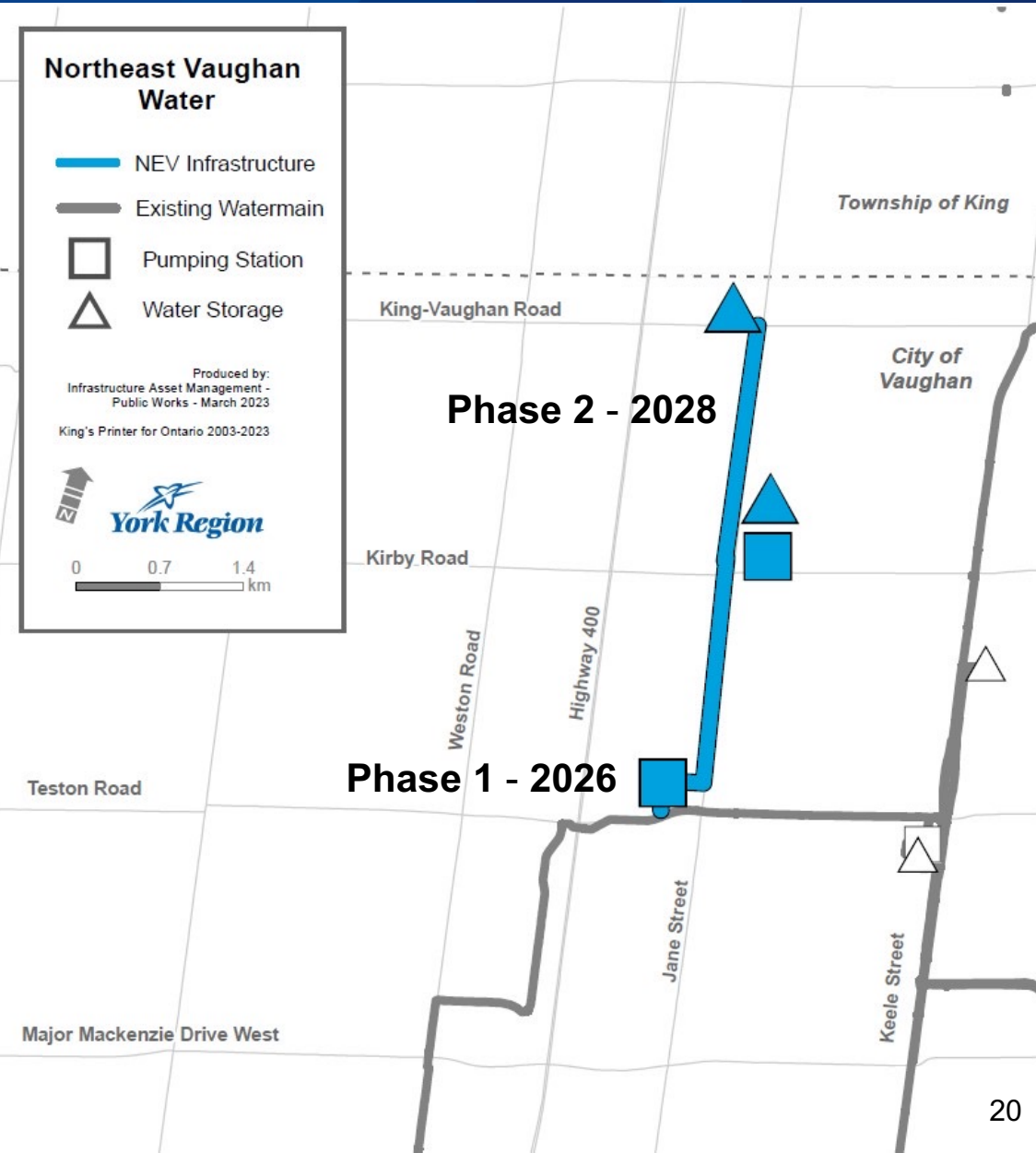
View of elevated tank (rendering) looking northwest, City of Vaughan

**Northeast Vaughan Water**

- NEV Infrastructure
- Existing Watermain
- Pumping Station
- Water Storage

Produced by:  
Infrastructure Asset Management -  
Public Works - March 2023  
King's Printer for Ontario 2003-2023

0 0.7 1.4 km

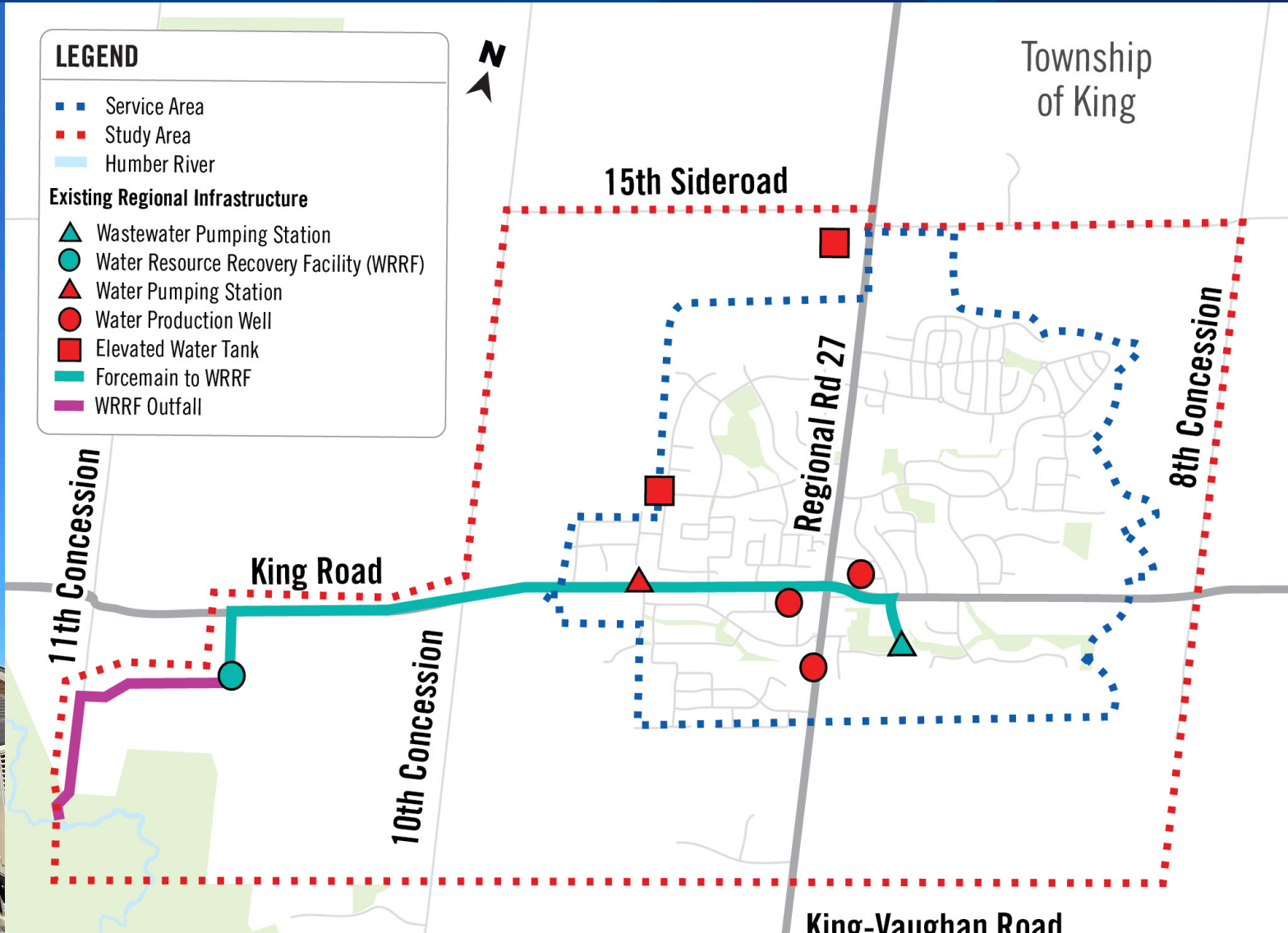


**SUPPORTING GROWTH INFRASTRUCTURE**

# Nobleton Water and Wastewater Servicing

STATUS DESIGN

\$ 30.2M



Construction of Nobleton Well 7 (left); Nobleton Class Environmental Assessment Service and Study Area map (right), Township of King

# Sutton Wastewater Servicing



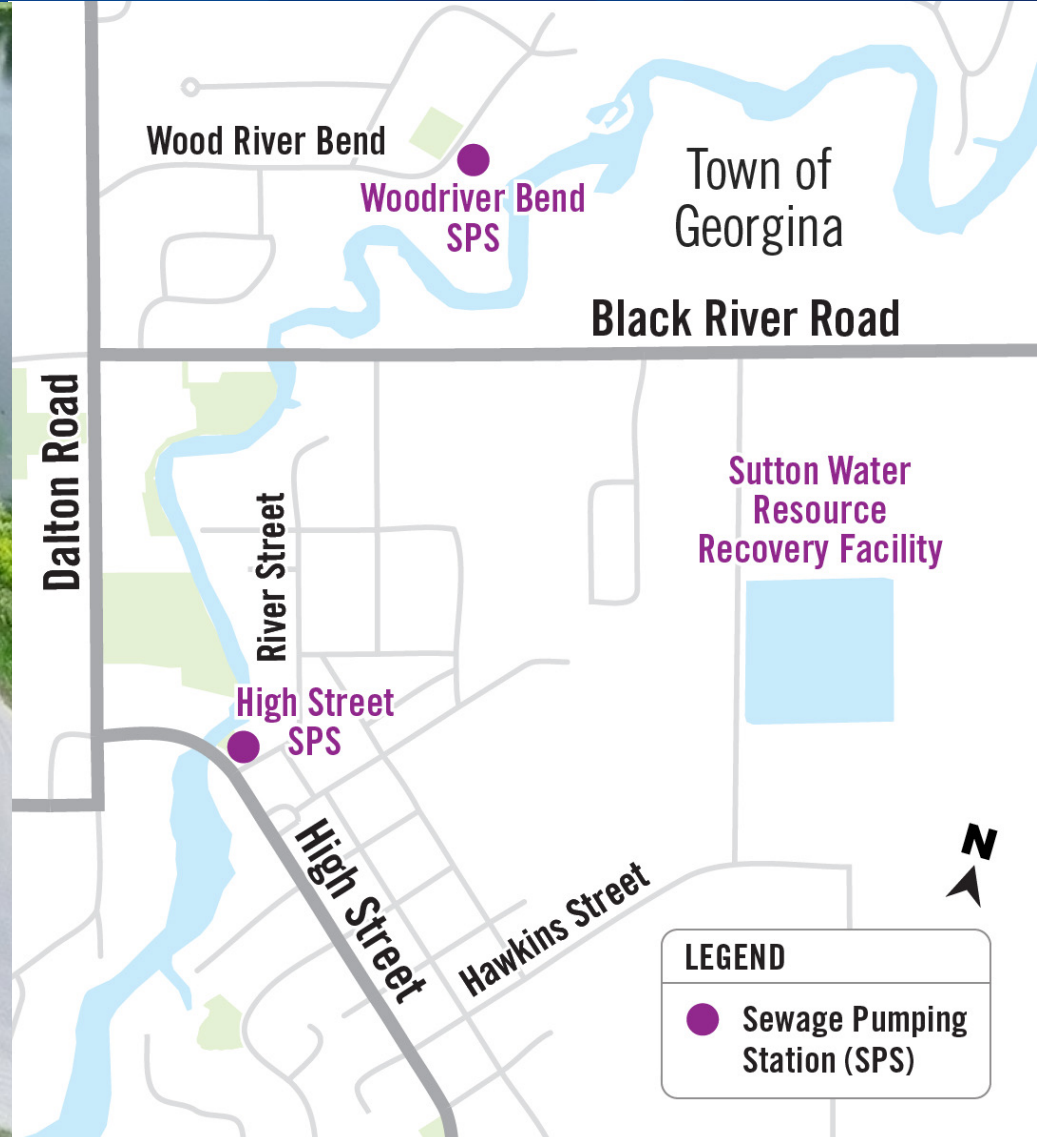
STATUS  
STUDY



PROJECT COST  
66.6M



COMPLETION  
2033



Sutton Water Resource Recovery Facility, Town of Georgina

# North Markham Water and Wastewater Servicing



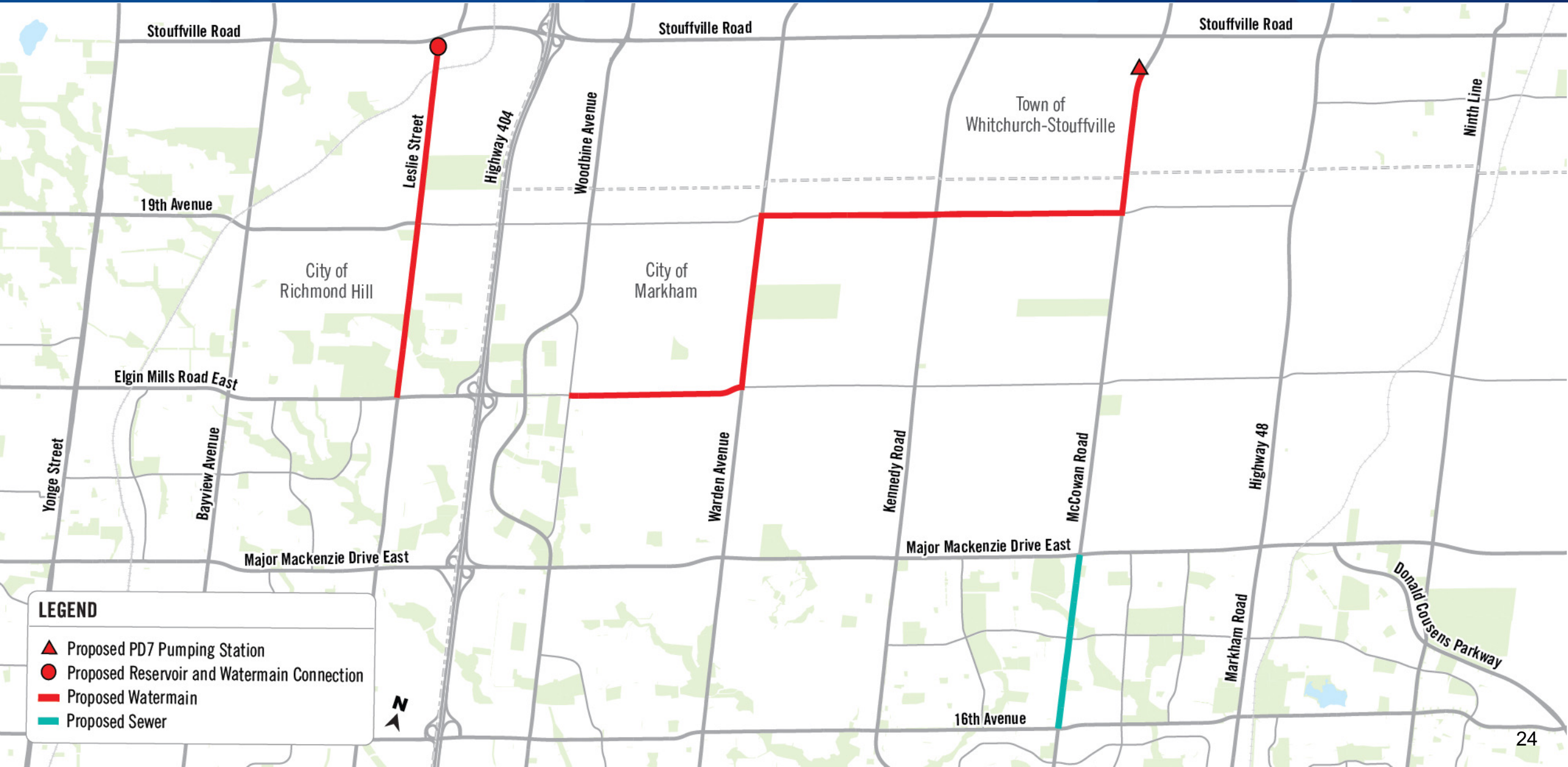
STATUS  
STUDY



PROJECT COST  
195.7M



COMPLETION  
2035



## LEGEND

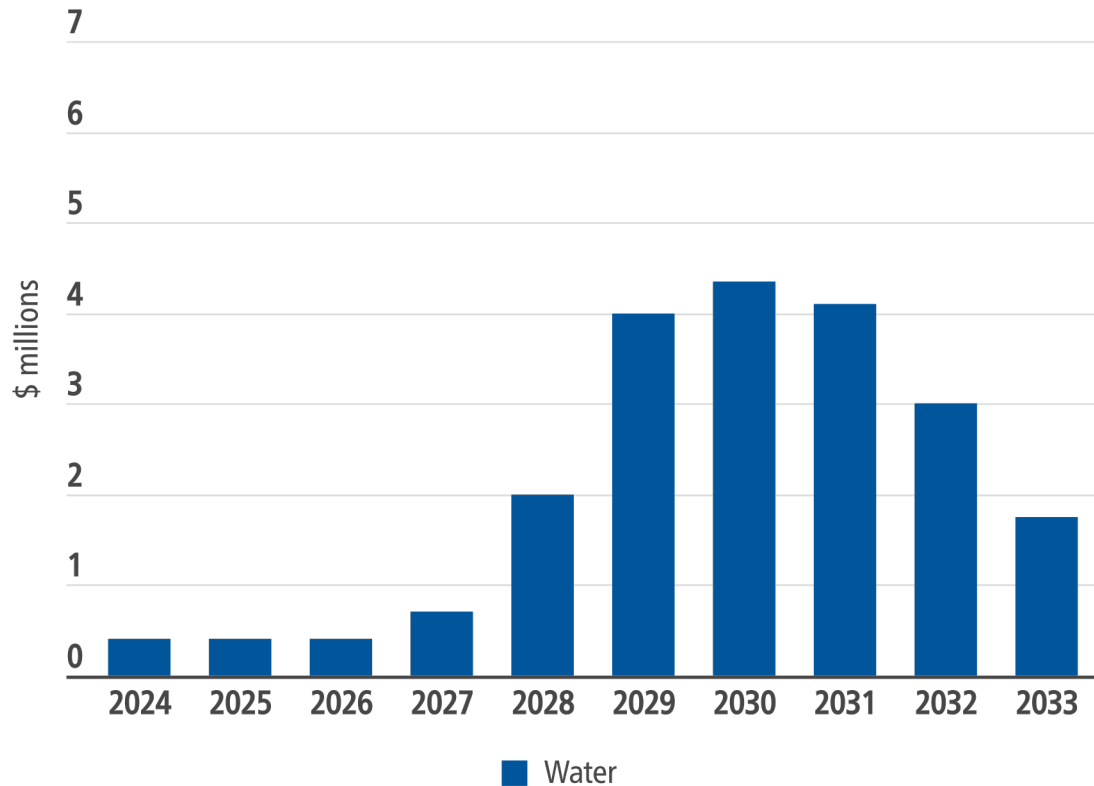
- ▲ Proposed PD7 Pumping Station
- Proposed Reservoir and Watermain Connection
- Proposed Watermain
- Proposed Sewer





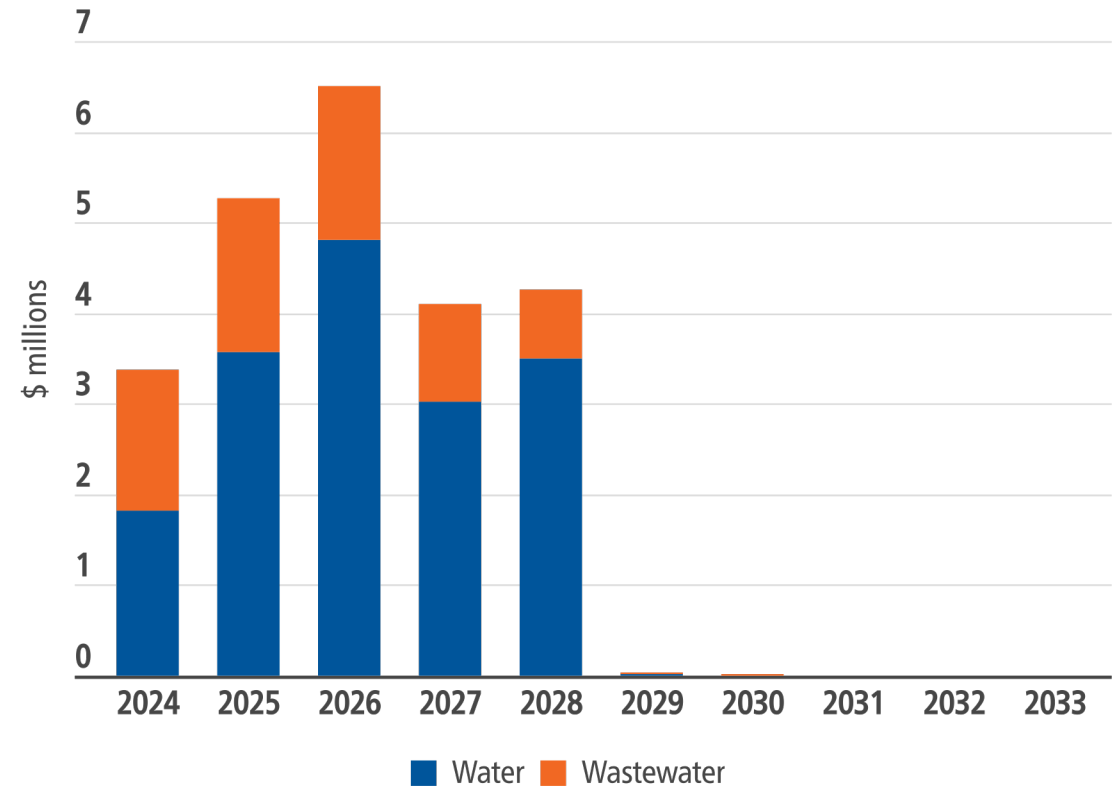
# Water and Wastewater Cost-Shared

**Toronto Projects (Water \$21.1M)\***



- West Toronto Pumping Station Standby Power
- Richview Pumping Station Standby Power

**Peel Projects (Water \$16.7M, Wastewater \$6.8M)\***

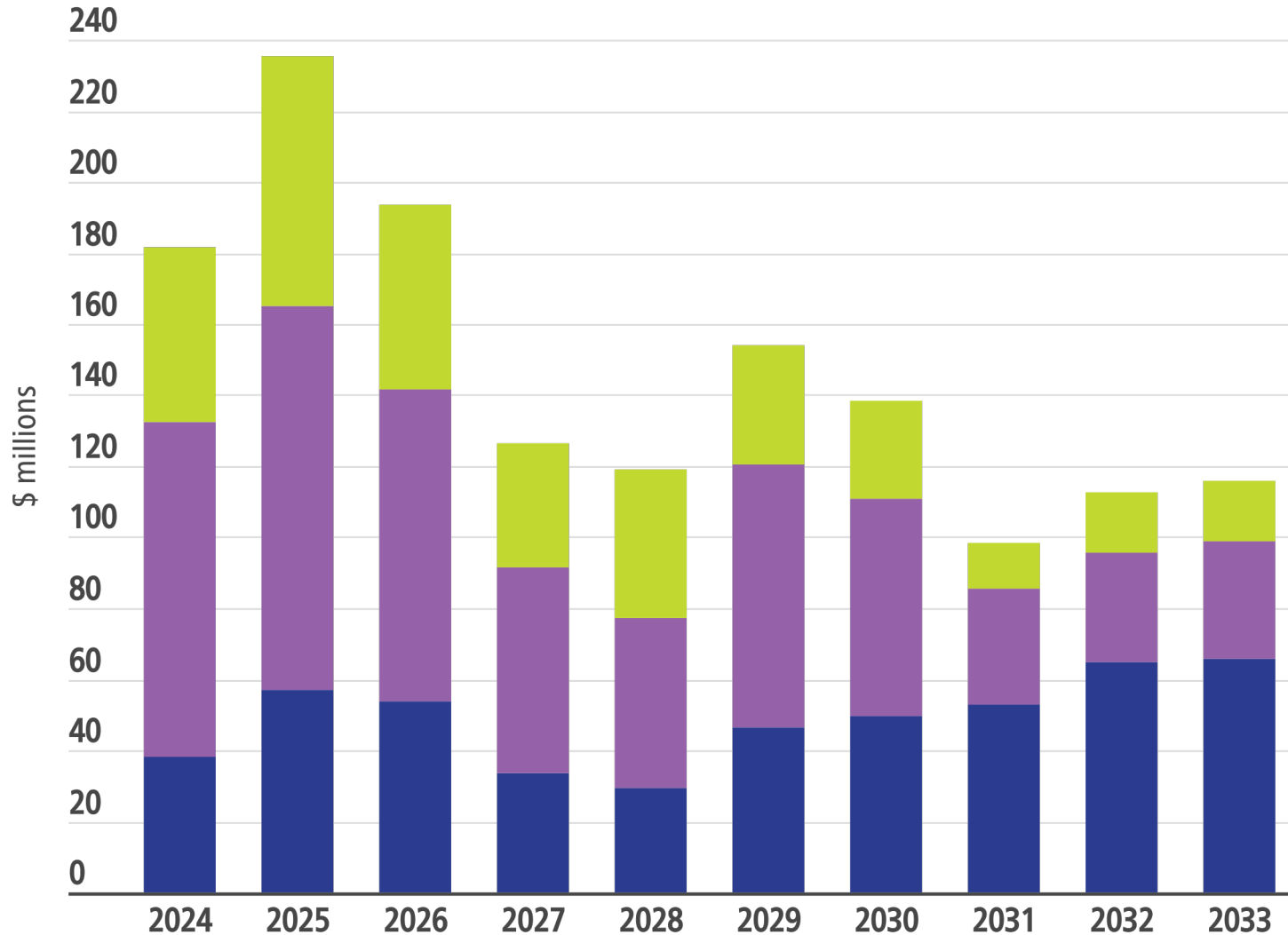


- Hanlan Watermain Interconnection
- GE Booth Lakeview Wastewater Treatment Plant Capacity Recovery Project




\*10-Year Capital Plan Totals

**ASSET MANAGEMENT**

# 10-Year Capital Plan - Asset Management



**\$1.5B**

	Duffin Creek Plant	\$356.8M
	Facilities	\$627.7M
	Linear	\$491.0M

# LINEAR INFRASTRUCTURE

# 16th Avenue Sewer Rehabilitation - Phase 2



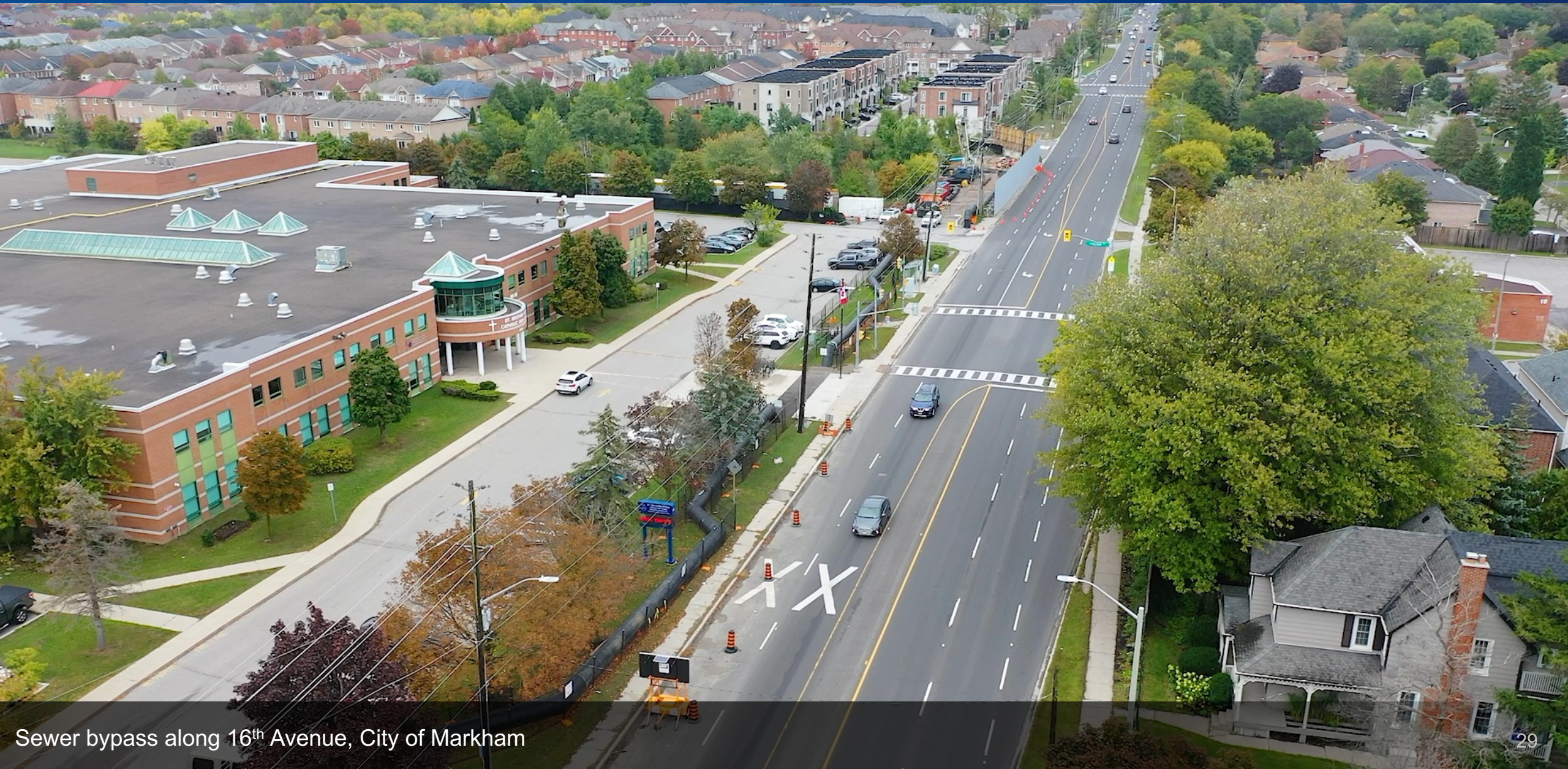
STATUS  
CONSTRUCTION



PROJECT COST  
74.9M



COMPLETION  
2024



Sewer bypass along 16<sup>th</sup> Avenue, City of Markham

# Tuclor Lane Gravity Sewer Rehabilitation



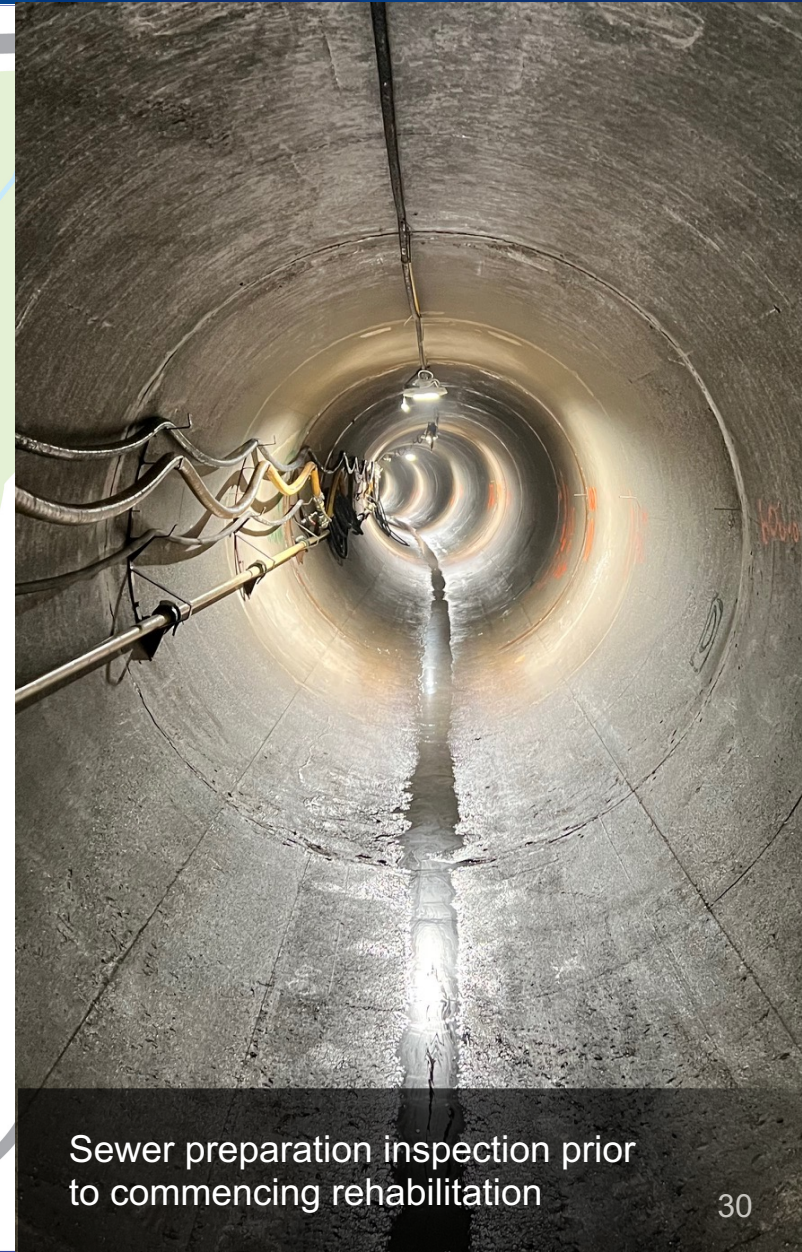
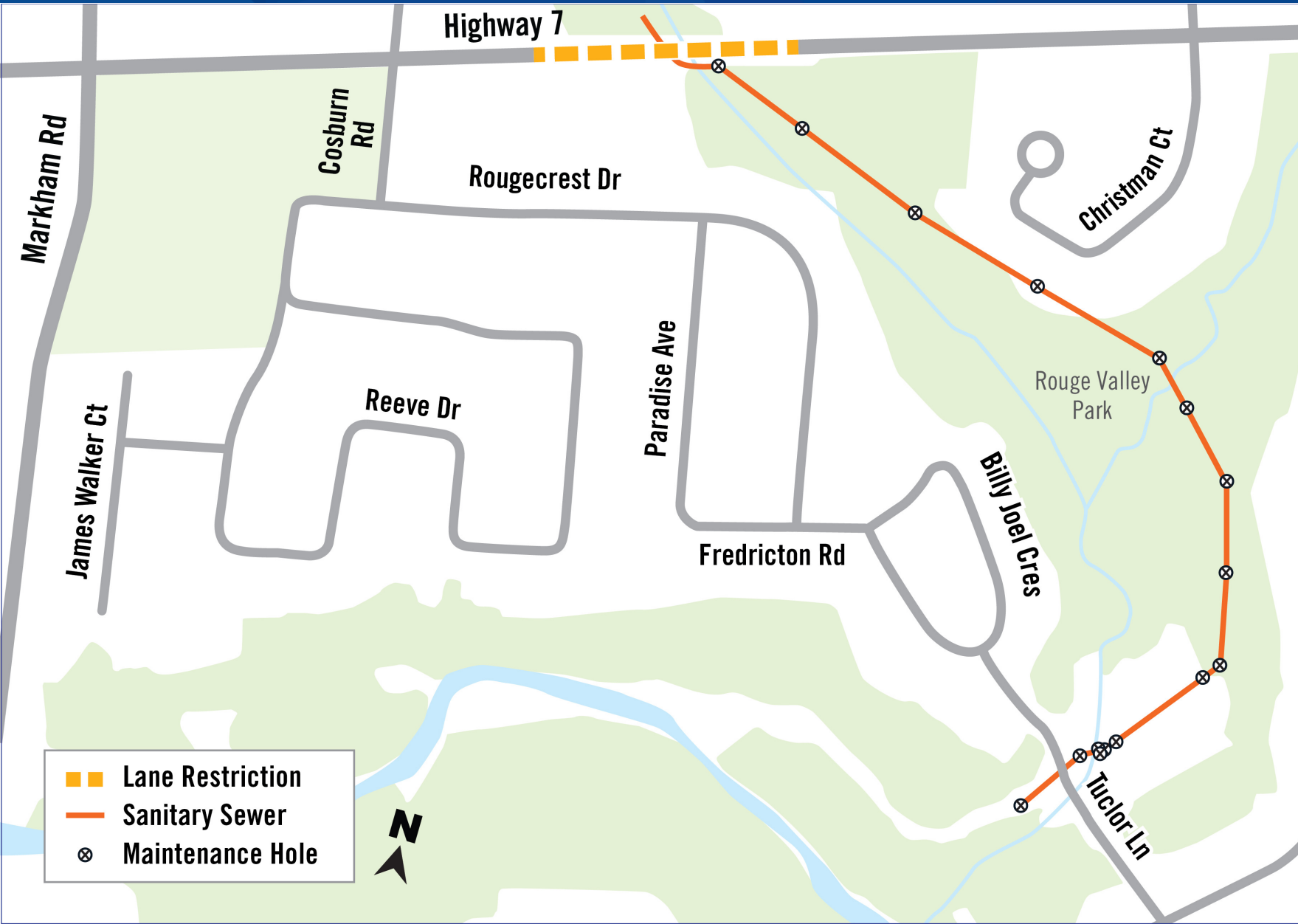
STATUS  
CONSTRUCTION



PROJECT COST  
18.1M



COMPLETION  
2025



Sewer preparation inspection prior to commencing rehabilitation

# Forcemain Rehabilitation Program

\$ 47.5M

## Humber to Black Creek Pumping Station Forcemain



STATUS  
DESIGN

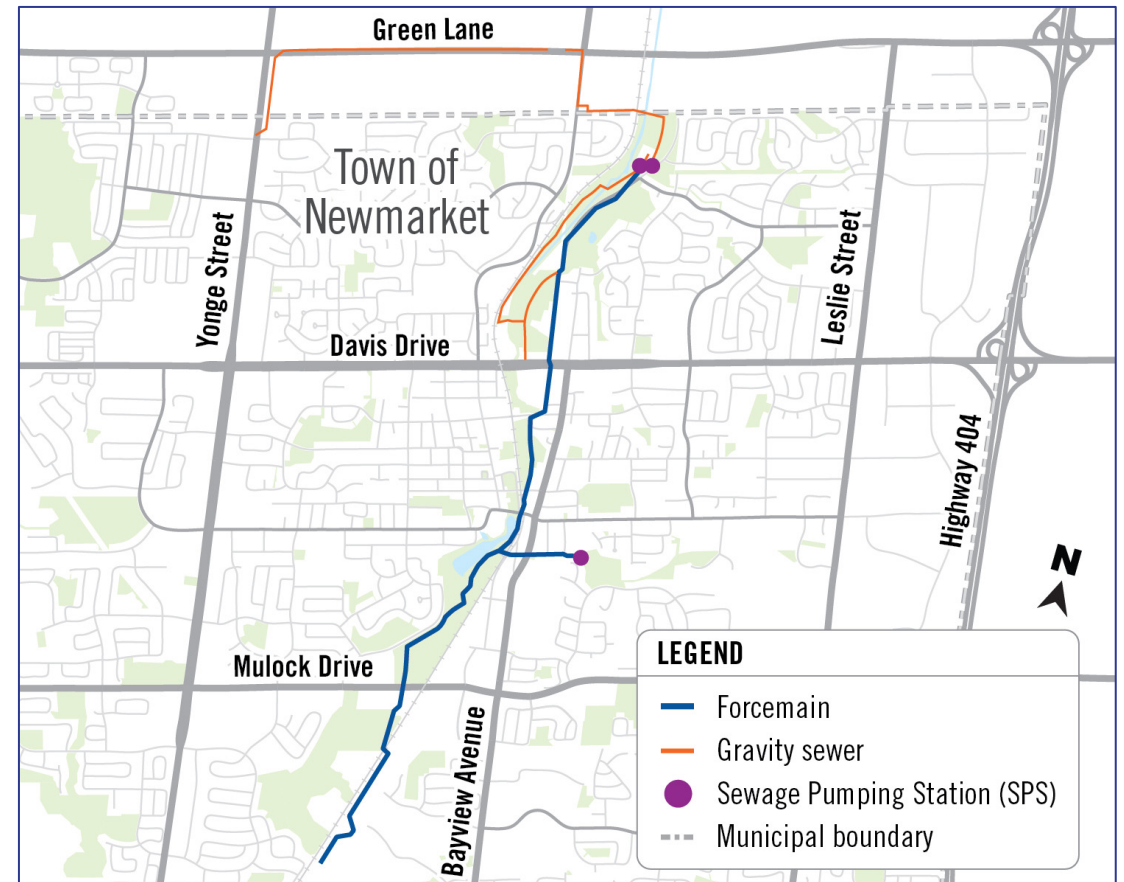


DESIGN COST  
4.4M



COMPLETION  
2027

## Newmarket Forcemain



STATUS  
DESIGN



DESIGN COST  
1.0M



COMPLETION  
2027

**FACILITIES**



# Keswick Sewage Pumping Station Upgrades

 STATUS  
CONSTRUCTION

 PROJECT COST  
41.4M

 COMPLETION  
2024



Construction of new air management and generator building, Town of Georgina

# Reservoir Rehabilitation and Upgrades Program

\$ 41.9M



Construction of the Maple North Reservoir, City of Vaughan

# Oak Ridges Air Management Facility



STATUS  
CONSTRUCTION



PROJECT COST  
20.6M



COMPLETION  
2024



Construction of the Oak Ridges Air Management Facility, Township of King

# Elevated Tank Rehabilitation Program

\$ 44.4M



Before



Current

Rehabilitating the Newmarket East Elevated Tank, Town of Newmarket

# DUFFIN CREEK PLANT

# Duffin Creek Incinerators 1 and 2



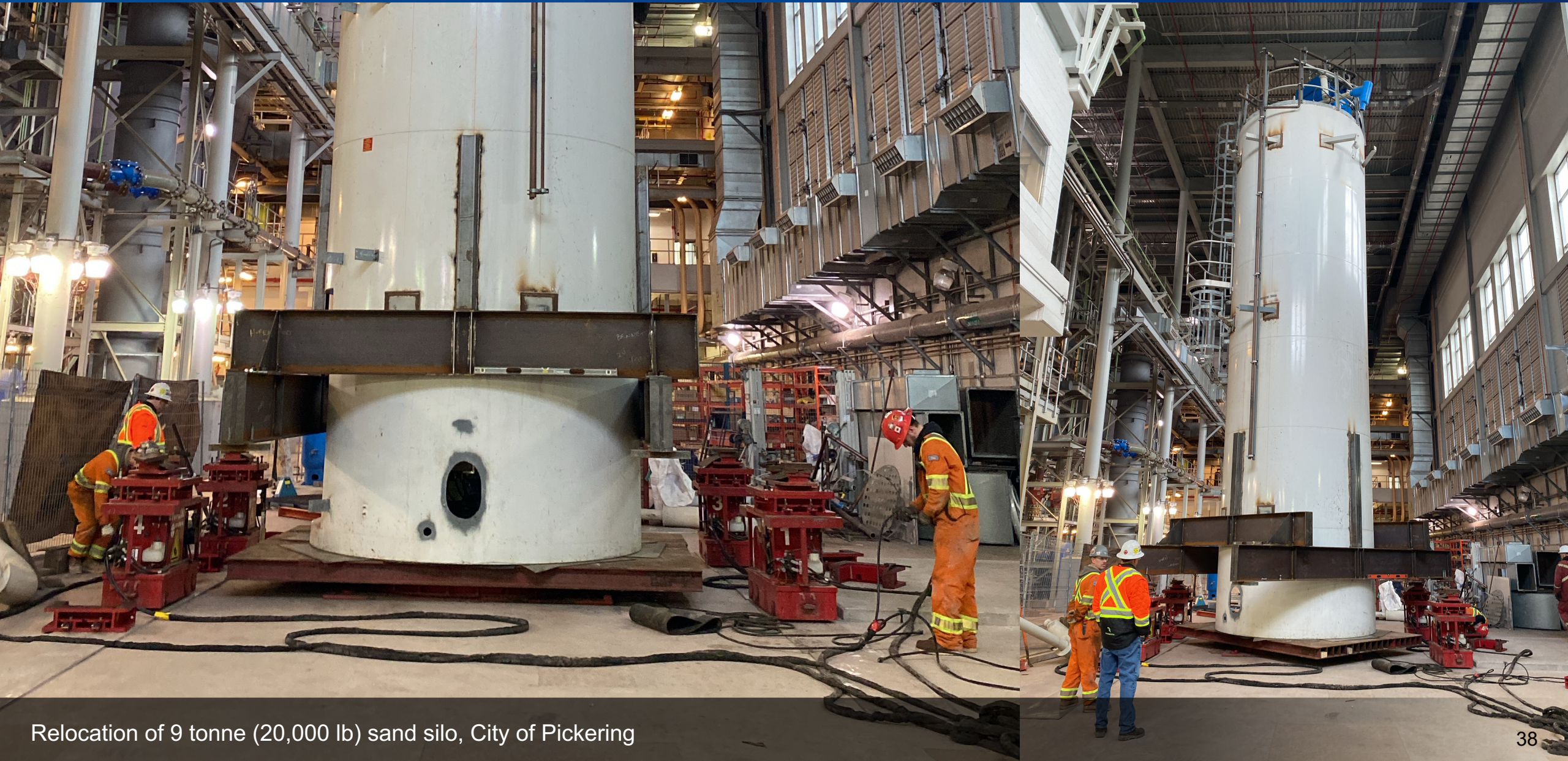
STATUS  
DESIGN/CONSTRUCTION



PROJECT COST  
292.2M



COMPLETION  
2030



Relocation of 9 tonne (20,000 lb) sand silo, City of Pickering

# Duffin Creek Digester Mixing Upgrades

 STATUS  
CONSTRUCTION

 PROJECT COST  
67.4M

 COMPLETION  
2028



Replacement of digester covers, City of Pickering

# MARKET LANDSCAPE



# Collaborative Management of Market Landscape

Common risks to Water/Wastewater and Transportation capital infrastructure delivery:

- High inflationary times
  - Shared risk approach
- Resource shortage
  - Skilled-labour force
- Regulatory changes
  - Excess Soils
  - Dedicated Locator
  - New Municipal Project Assessment Process (MPAP)



Aurora Yonge Street Watermain, horizontal directional drilling entry shaft, Town of Aurora

# Key Messages

1. Largest water and wastewater 10-year Capital Plan in the last 10 years (\$4.4 billion).
2. 2024 Capital Plan includes impacts of *Supporting Growth and Housing in York and Durham Regions Act, 2022*.
3. Significant number of active projects (176) in various delivery phases.
4. Average budget spend of 95% over the last 10 years totaling \$2.24B.
5. Continued Council investment in an optimal balance of growth and infrastructure management.



16<sup>th</sup> Avenue Sewer Rehabilitation,  
City of Markham

# Questions / Discussion



# Thank You

For more information:

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1-877-464-9675 ext. 75355

