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ENGINEERING AND CONSTRUCTION SERVICES STORMWATER MANAGEMENT INFRASTRUCTURE

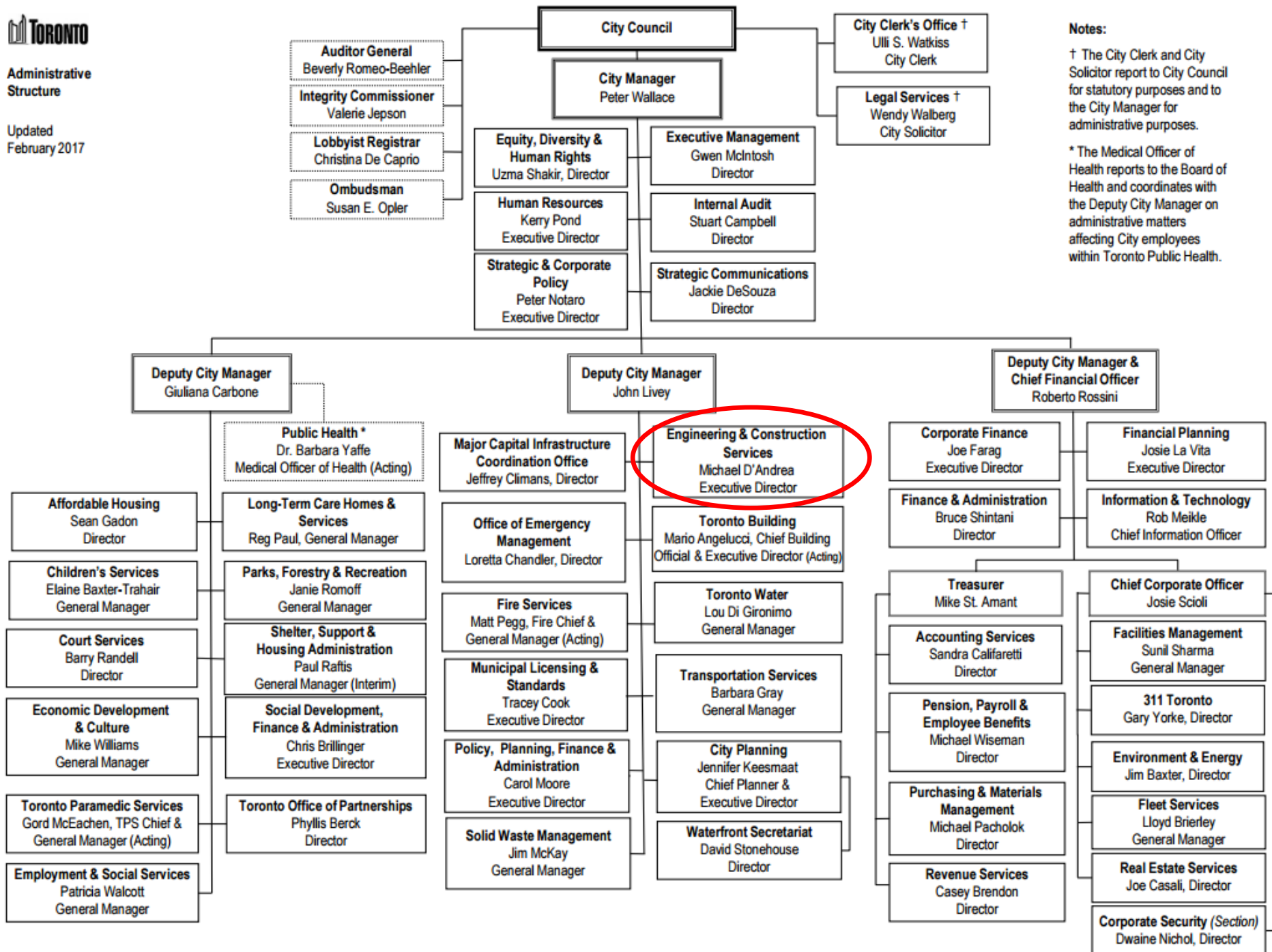
Kumar Sivakumaran
Daniel McCreery
City of Toronto
March 23, 2017

TODAY'S AGENDA

An overview of the City of Toronto's Engineering and Construction Services division

An introduction to the new City of Toronto Stormwater Management Infrastructure Group

Example Project – Earl Bales Park Stormwater Management Facility



Notes:

† The City Clerk and City Solicitor report to City Council for statutory purposes and to the City Manager for administrative purposes.

* The Medical Officer of Health reports to the Board of Health and coordinates with the Deputy City Manager on administrative matters affecting City employees within Toronto Public Health.

Engineering & Construction Services (ECS)

Mission

"To build safe and sustainable infrastructure that enhances the quality of life for the people of Toronto"

Vision

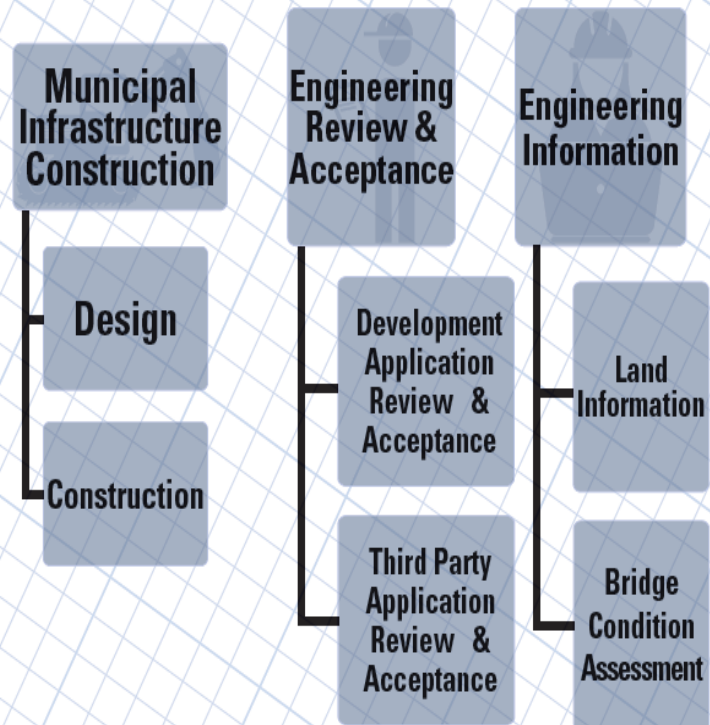
"Be an industry leader in delivering municipal infrastructure engineering services with integrity and pride"

Values

Service: responsive, cooperative, fair and professional in dealings with our stakeholders

Stewardship: responsibly balance economic, social and environmental needs in the delivery of our mandate

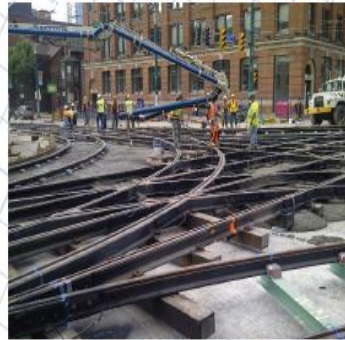
Commitment: to collaboration, organizational excellence, accountability, respect



Municipal Infrastructure Design and Construction

Engineering and project management services for the construction of new and upgraded infrastructure including:

- Roads & Bridges
- Sewers & Watermains
- Stormwater Management Facilities
- Water and Wastewater Treatment Facilities
- Solid Waste Management Facilities



Track Reconstruction at
Intersection of
Spadina Avenue and King Street



Ashbridges Bay Wastewater
Treatment Plant



Emery Creek Water Quality Ponds



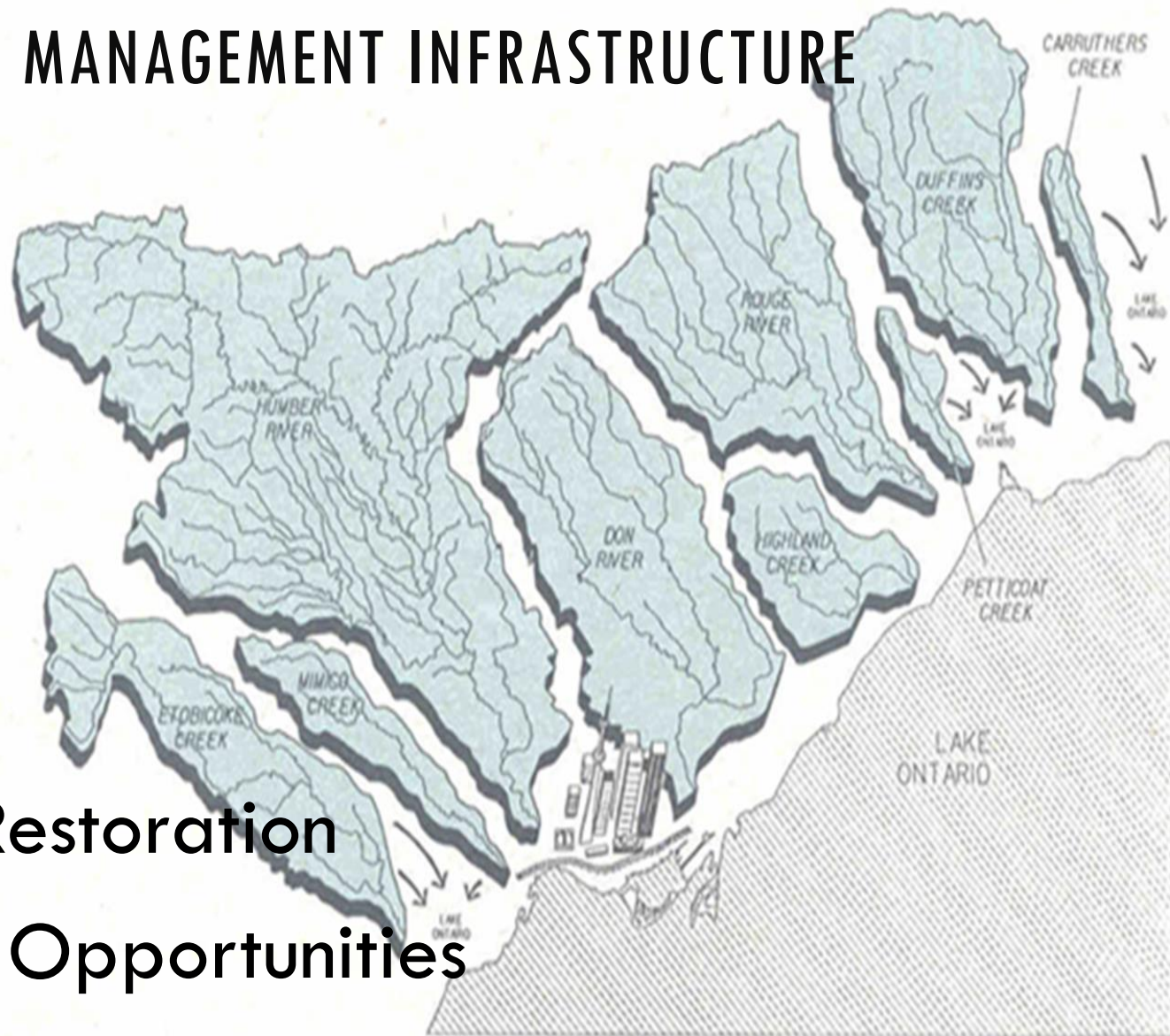
F.G. Gardiner Expressway
West Deck Replacement



Basement Flooding
Protection Program

STORMWATER MANAGEMENT INFRASTRUCTURE GROUP

1. Purpose
2. Projects
3. Stream Restoration
4. Unifying Opportunities



WET WEATHER FLOW MASTER PLAN



THE BONAR CREEK STORMWATER MANAGEMENT FACILITY

The proposed SWMF will provide water quality treatment for a drainage area of 365 ha, which currently drains untreated to Mimico Creek and Lake Ontario.





STREAM RESTORATION

Studies and RFPs

1. Highland Creek
2. Duncan Creek
3. Mimico Creek EA
4. Taylor Massey Master Plan
5. Chapman Ravine EA
6. West Humber Study
7. Priority Outfalls Study
8. Burke Brook EA
9. Yellow Creek Study

4988 Highland Creek and New Highway Bridge. (Comm). June 10/27.

STREAM RESTORATION

Roster Assignments

1. Mimico Creek at Royal York
2. Yellow Creek at St. Clair
3. Rouge Hills Drive
4. Mimico Creek at Berry Road



EARL BALES PARK STORMWATER MANAGEMENT FACILITY



THREE INTERRELATED SOURCES INITIATED THE PROJECT

1. The City of Toronto Wet Weather Flow Management Master Plan.
2. Toronto Region Conservation Authority's Earl Bales Park Management Planning Process.
3. A requirement from the redevelopment of the Downsview Base Lands, which lie within a subcatchment of the West Don River and drain to an outlet in Earl Bales Park.

OVERVIEW

The Earl Bales Stormwater Management Facility provides water quality improvement for 550 hectares of developed area west of Bathurst Street in North York.

The project includes a water supply system to provide water from the pond to the Don Valley Golf Course for irrigation and the Earl Bales Park ski hill for snow making.

1. Total storage volume 103,611 m³
2. Permanent pool volume 44,078 m³
3. Active storage volume 59,533 m³
4. Total pond surface area 26,055 m²

IMPLEMENTATION AND APPROVALS

Timeline:

The Environmental Study was completed in 2007

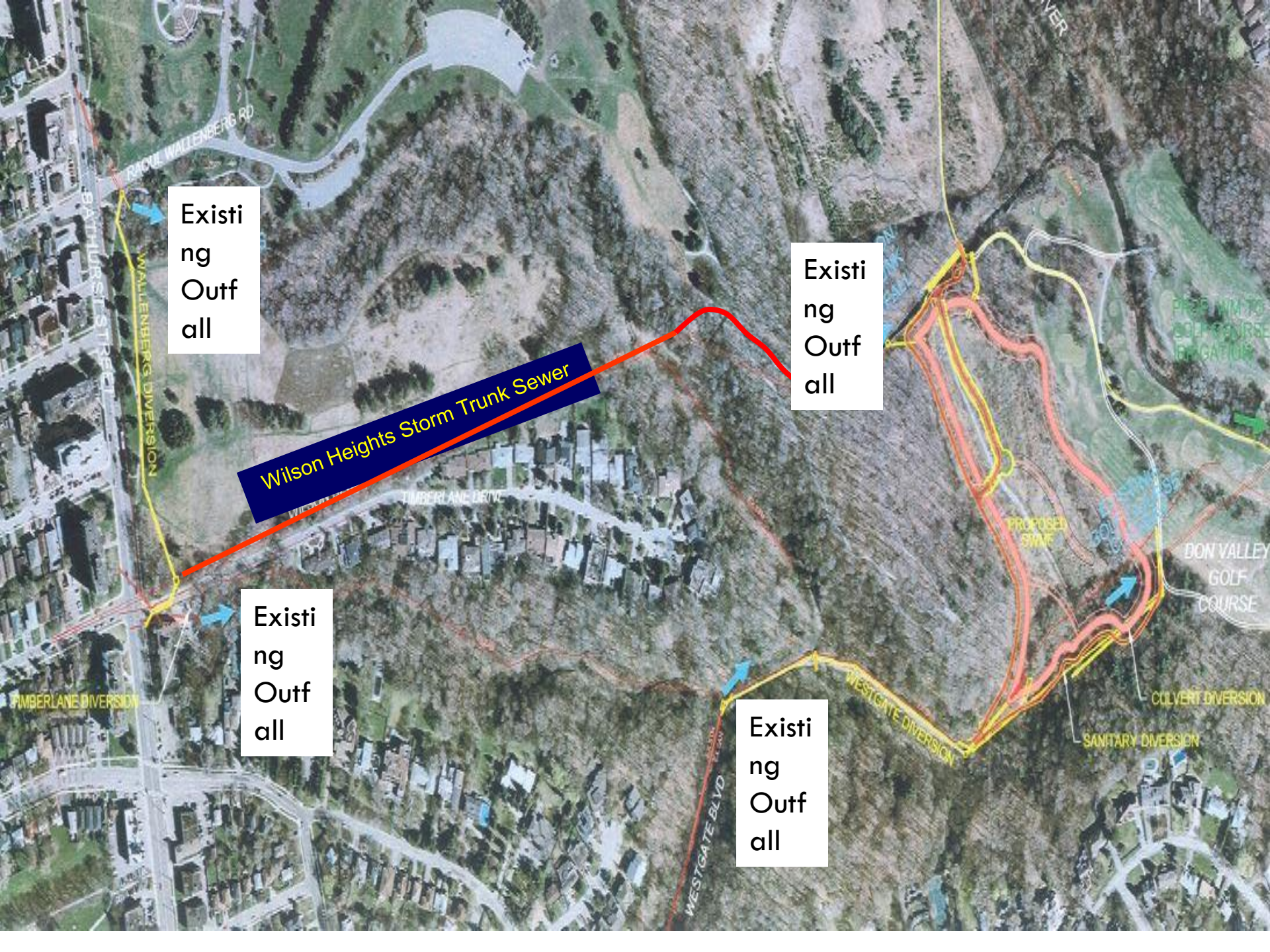
Detailed Design was completed in 2010

Phase 1 Construction - Summer 2010 to spring 2012

Phase 2 Construction - Winter 2015 to ongoing

Approvals:

1. Toronto & Region Conservation Authority
2. Ministry of Environment
3. Ministry of Natural Resources
4. City Parks Department & Urban Forestry
5. Toronto Building Department



Existing
Outfall

Wilson Heights Storm Trunk Sewer

Existing
Outfall

Existing
Outfall

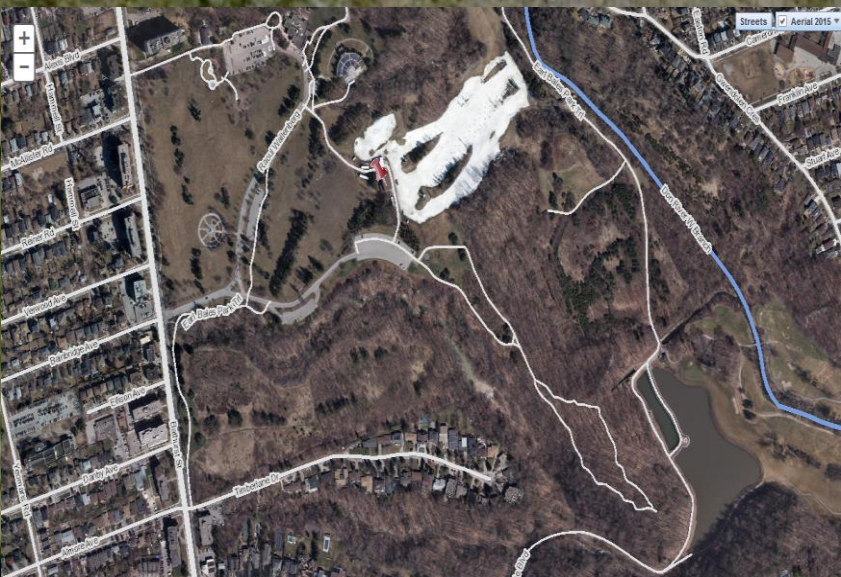
Existing
Outfall

West Don
River

Wilson Heights
Outfall

Don Valley Golf
Course

Proposed
pond
location



PHASE 1 BEFORE CONSTRUCTION



This site was the location of the former Glendale sewage treatment plant which was demolished in the 1960s. The site was then used by the City as a leaf composting area.

PHASE 1 DURING CONSTRUCTION



maximumvantagepoint.ca



Inlet from Wilson
Heights Outfall

Inlet from Westgate
Outfall

Primary Forebay

Outlet
and
Pump
House

Secondary
Forebay

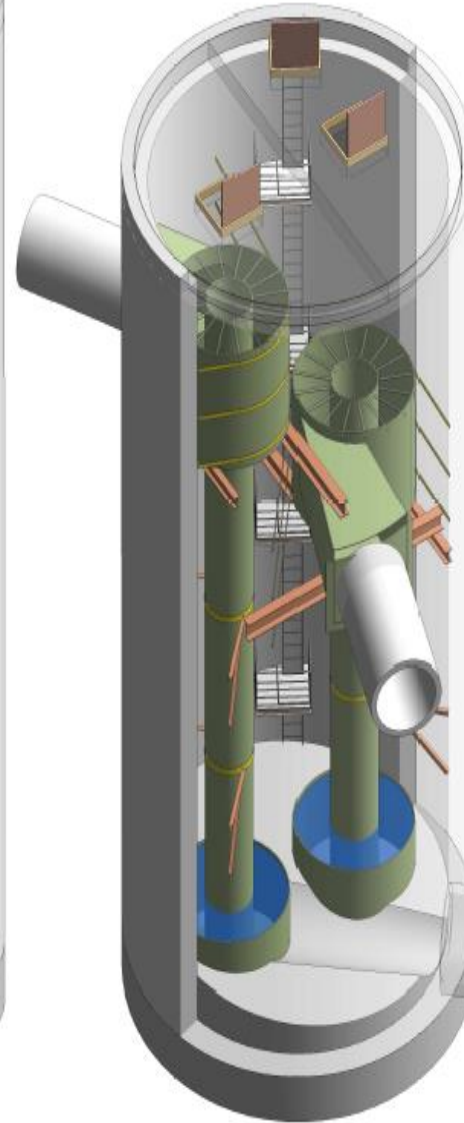
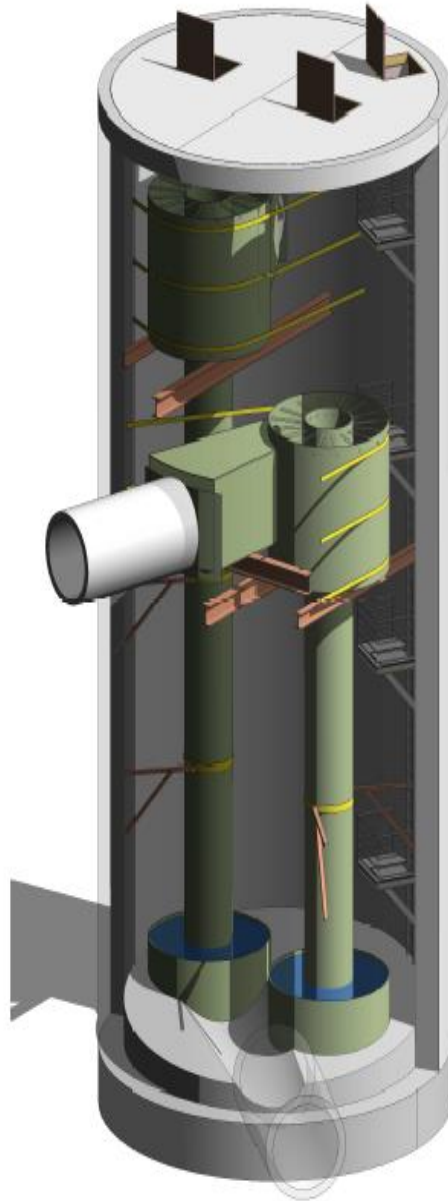
Main Cell

Submerged
Berms

PHASE 1 AFTER CONSTRUCTION

Construction cost \$11 million – a third was funded by the Federal Government

PHASE 2 CONSTRUCTION



PHASE 2 CONSTRUCTION



LESSONS LEARNT



QUESTIONS



4986 Foot Bridge at Highland Creek (Comm.) June 10/21.