



SOURCE FOR STREAM

2023 Conference

Canada's Premier
Stormwater and Erosion
and Sediment Control
Conference

Thank you to our sponsors!

EXECUTIVE SPONSORS



Canadian Society for
Civil Engineering



Société canadienne
de génie civil



OPPORTUNITIES SPONSOR



MEDIA SPONSORS



HOSTS

Presented by:



In association with:



Erosion Control Infrastructure Asset Operation & Management Plans

Erosion Risk Management, Restoration & Infrastructure

Presented by:

Matt Johnston, Associate Director

David Gingerich, Manager

March 23, 2023

Erosion Risk Management | A Brief History

ERM Program Overview



Erosion Hazard
Identification



Monitoring



Engineering
Investigation



Risk Assessment
Review



Remediation
Prioritization



Erosion Hazard
Remediation



Asset Management

2020s

Dufferin

Simcoe

Durham

Erosion Control Structures in our Jurisdiction

Wellington

Peel

Toronto

- Structures
- Structures with unknown construction date

Regulations | What happened while we were away ?

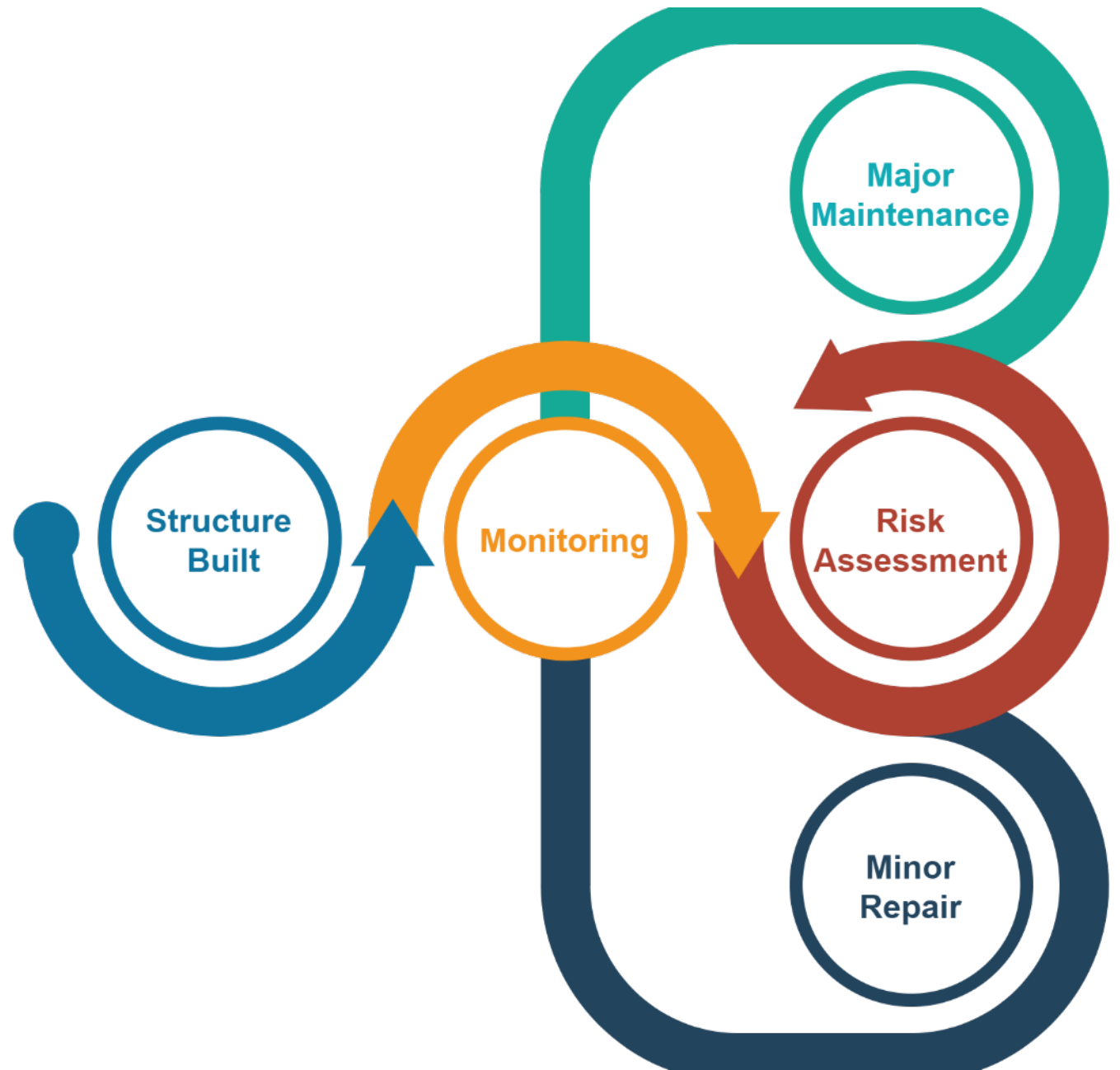
O.Reg. 686/21

Mandatory Programs and Services

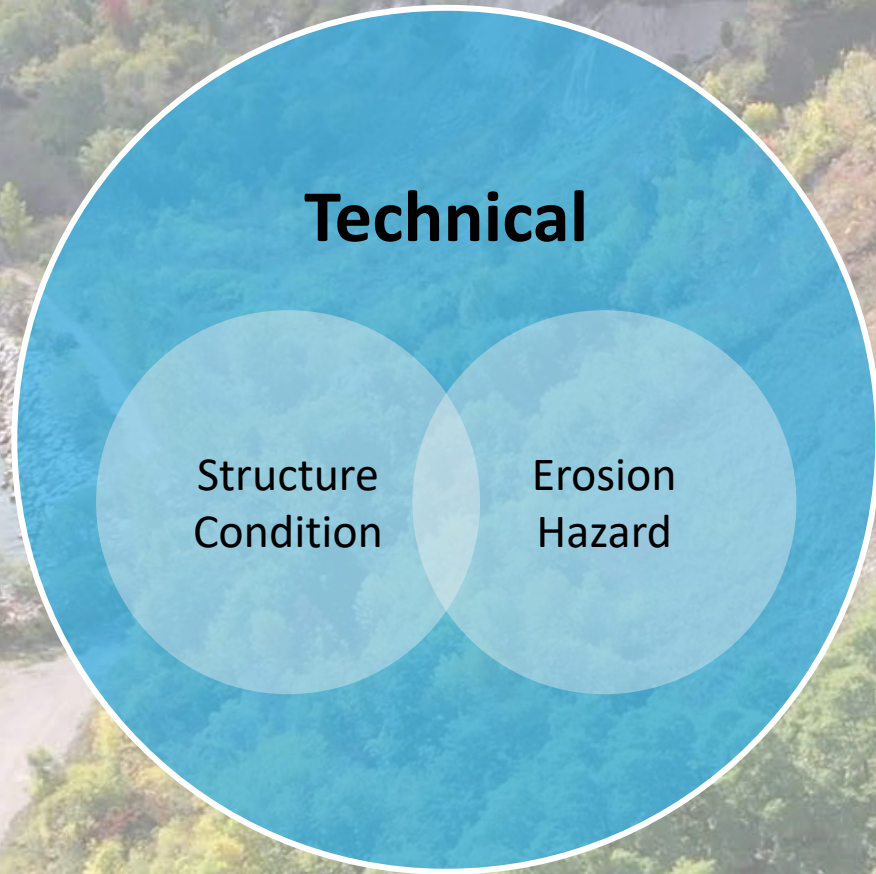
- ... shall provide programs and services ... related to erosion hazards
- ... shall provide programs and services that support the *operation, maintenance, repair and decommissioning* of ... owned or managed ...
- ... erosion control infrastructure



Asset Lifecycle



Level of Service Assessment



Asset Operational Plan

Monitoring

Monitoring of erosion hazard risk to:

- public safety;
- essential infrastructure; and
- municipal assets

3,390 sites / yr

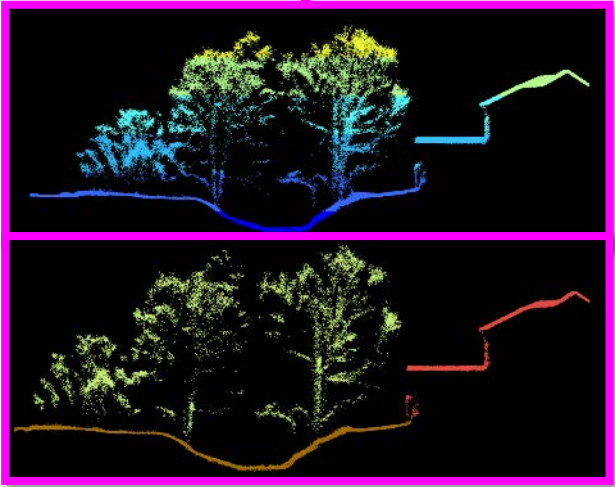
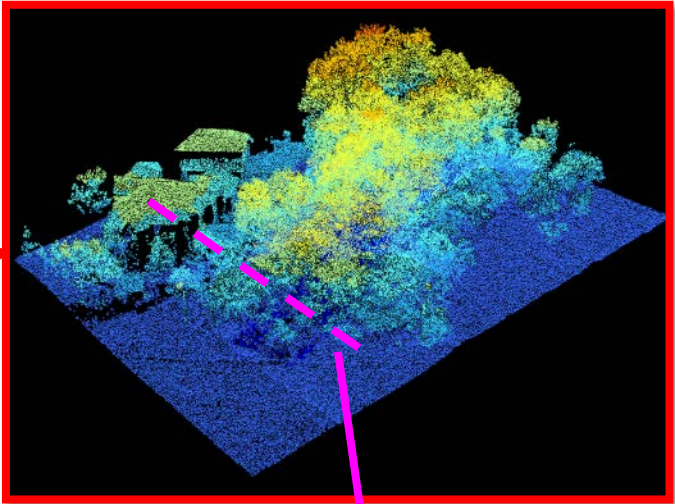
Average annual site inspections (2017-2019)

5,015 sites / yr

Average annual site inspections (2020-2022)



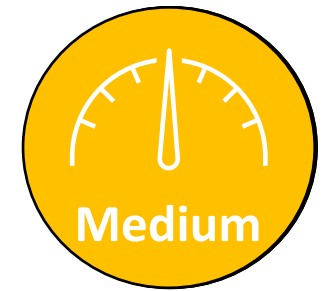
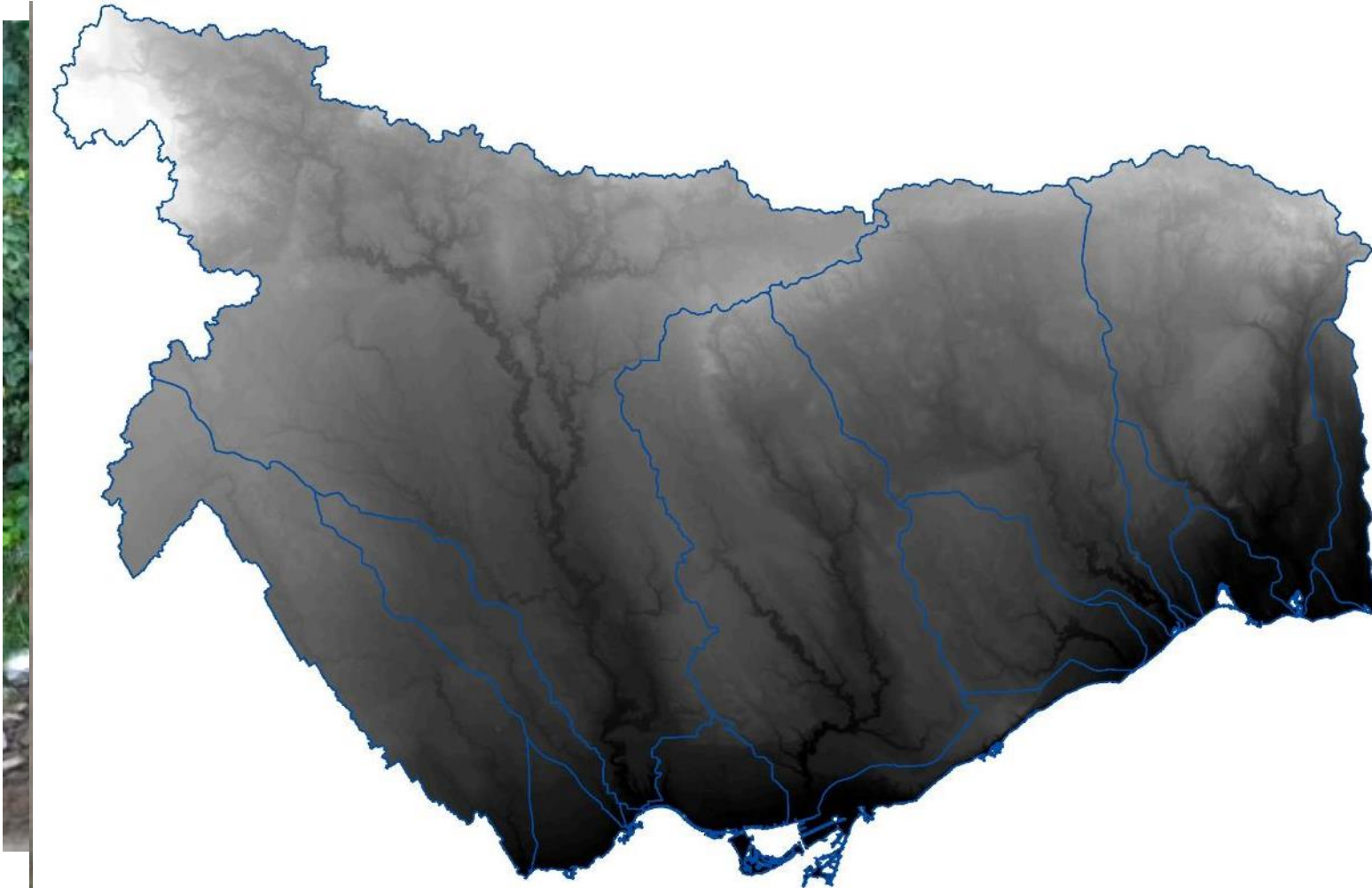
Data Richness



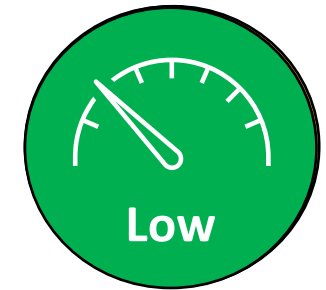


Sonar

Data Collection: Watersheds Scale



Details



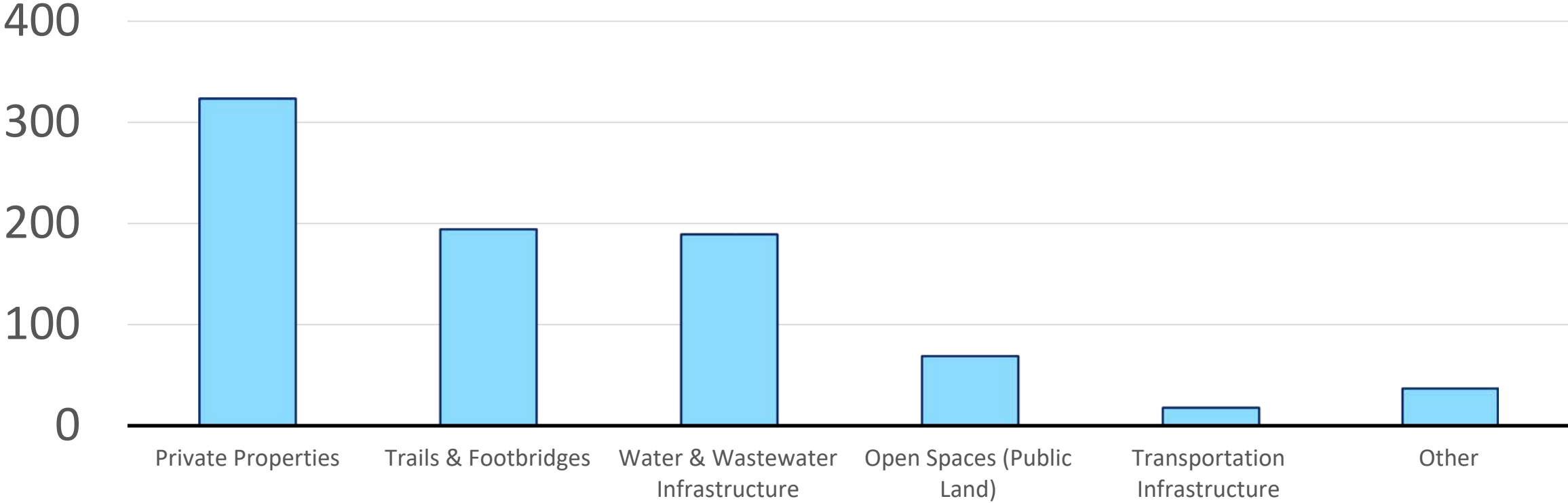
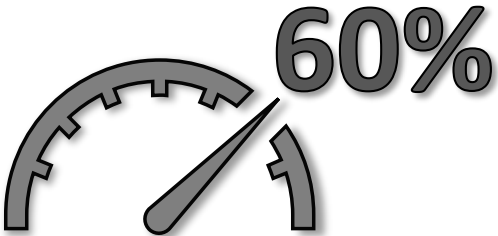
Efforts



Cost

Asset Management Plan Overview

Community Level of Service



Waterfront Erosion Control Structures



Private properties



Trails



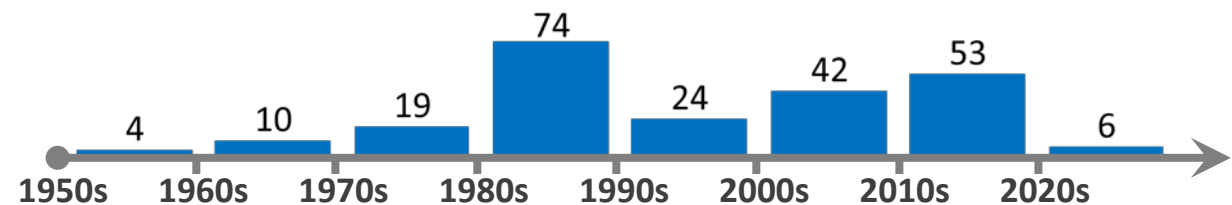
Open spaces





Waterfront Erosion Control Structures

- Total Replacement Value: \$139.4M
- Total of 239 assets



Riverine Erosion Control Structures



Private properties



Trails/Roads



Water & wastewater
Infrastructure

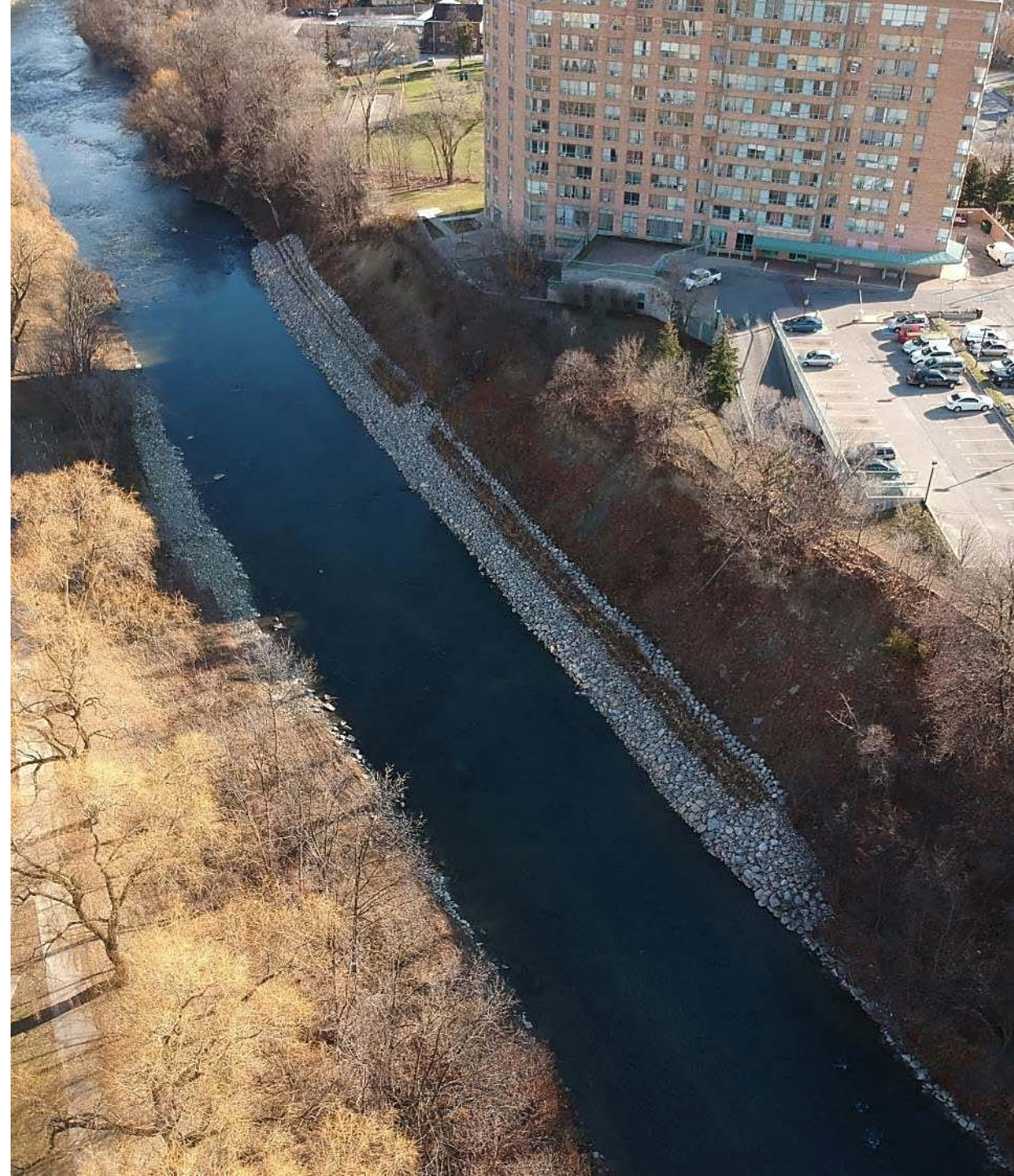
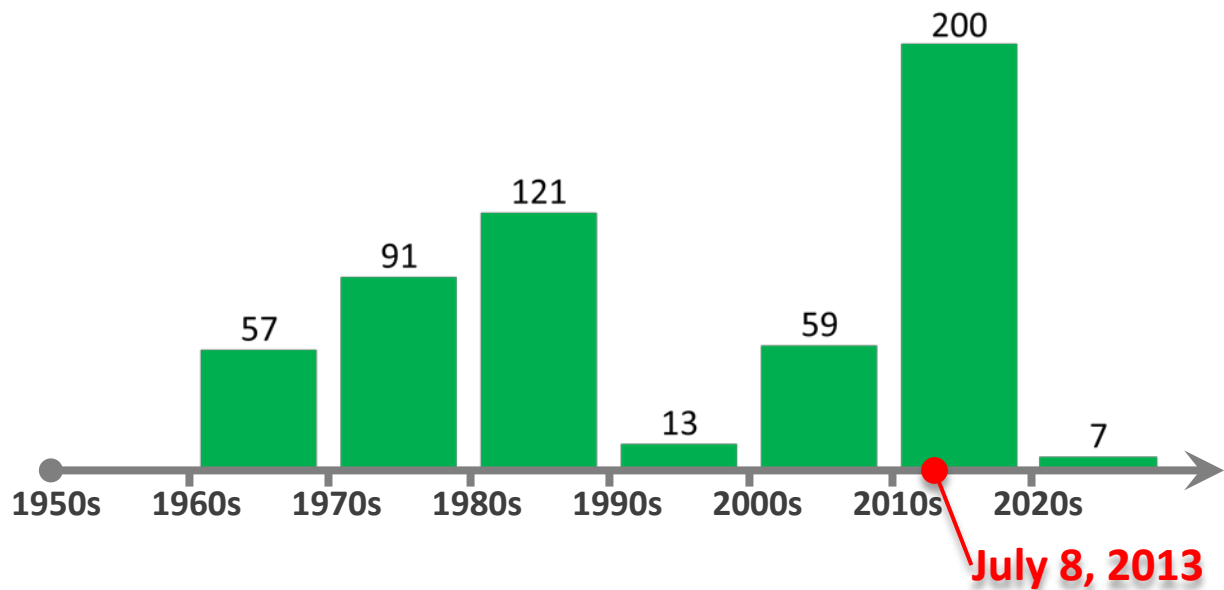


Open spaces



Riverine Erosion Control Structures

- Total Replacement Value: \$111.5M
- Total of 591 assets



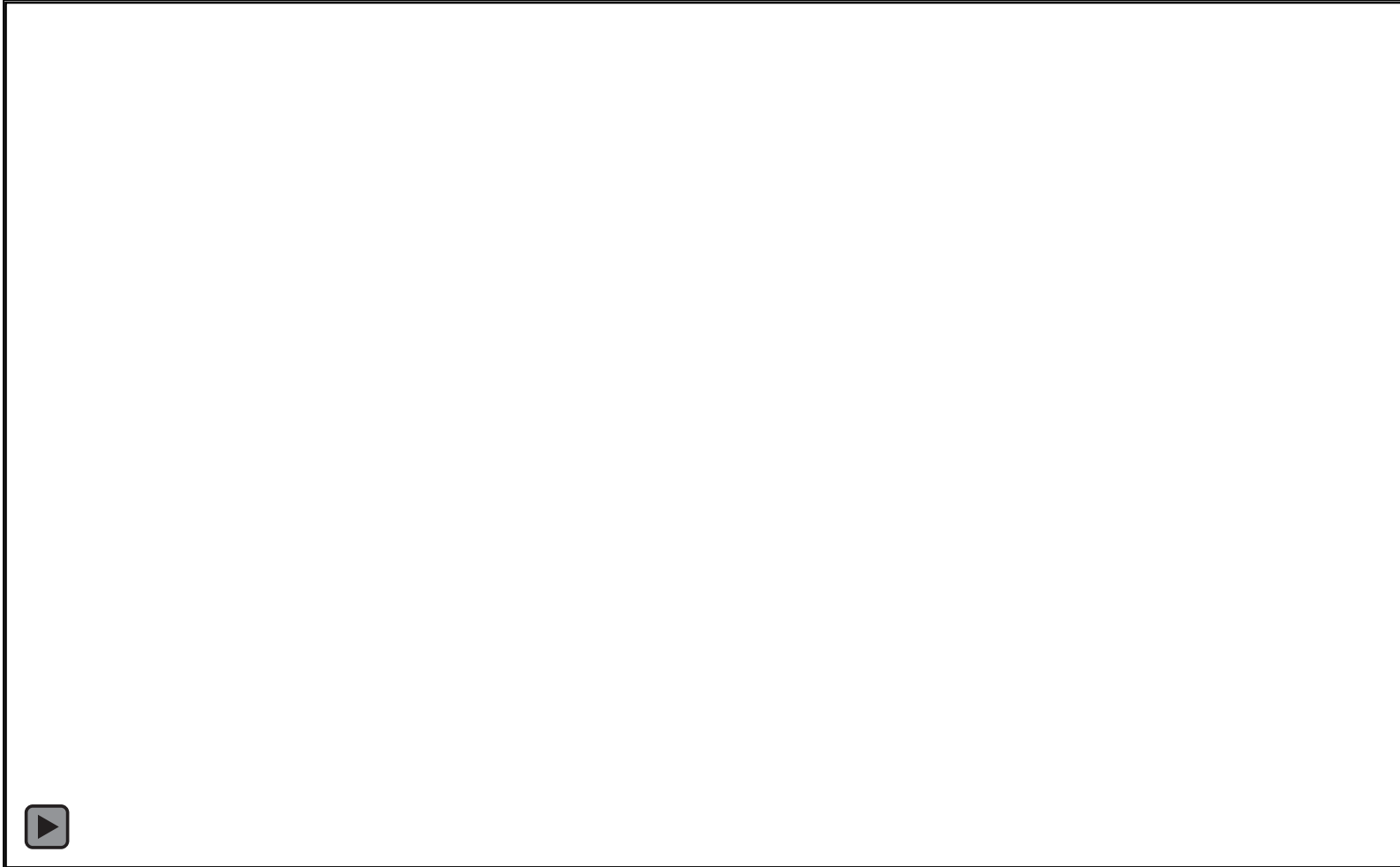
Storm of July 8, 2013

- City of Toronto's Valley Erosion Hazard Portfolio
Avg of \$4.6M/year until 2024
- Federal Disaster Mitigation and Adaptation Fund (DMAF)
\$68M over 10 years



Innovation

Automation of FRANK



**Toronto
Metropolitan
University**

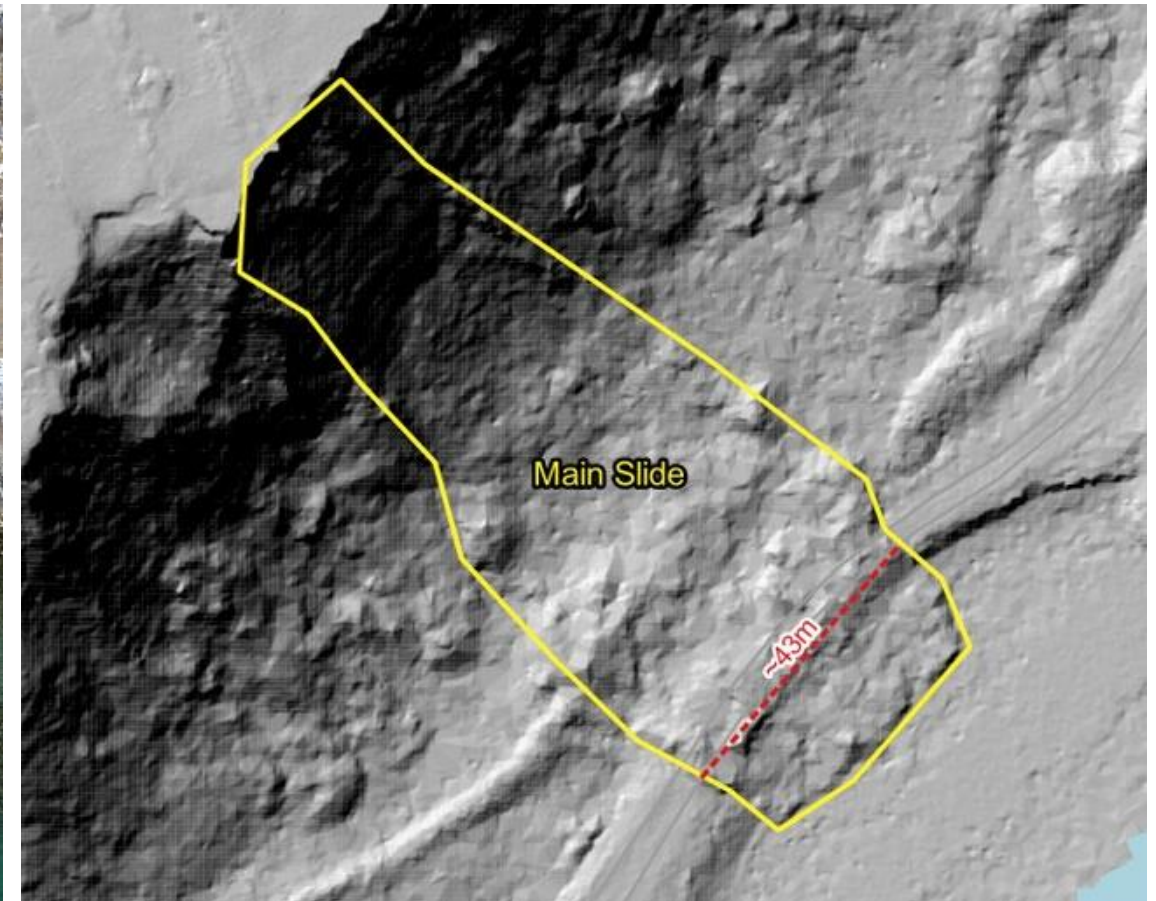
Mitacs

Natural Hazard Test Case



Sylvan Ave Landslide
Week of March 6th – 10th

Sylvan Slide – March 2023



Sylvan Slide – looks like ... ?



Thank you for you time & attention.

***Thank you to Jamil Benhamida
and all our Erosion Risk Management colleagues
for all your dedication and hard work.***



SOURCE FOR STREAM

2023 Conference

Canada's Premier
Stormwater and Erosion
and Sediment Control
Conference

Thank you to our sponsors!

EXECUTIVE SPONSORS



Canadian Society for
Civil Engineering



Société canadienne
de génie civil



GEO

MORPHIX™



OPPORTUNITIES SPONSOR

AECOM

MEDIA SPONSORS



HOSTS

Presented by:



In association with:

