Waves of Progress:

Protecting and Restoring Critically Important Great Lakes Coastal Areas

PROJECTS SHOWCASE

The webinar will begin momentarily

Georgian Bay, Lake Huron | Lion's Head, Ontario | Credit: Trevor Bobyk

October 28, 2025

Canada Water Agency | Agence de l'eau du Canada

Land Acknowledgement

We respectfully acknowledge the lands we are situated on are Traditional Territories and Treaty Lands of the Mississaugas of the Credit, the Anishinaabeg of the Williams Treaty First Nations, the Huron-Wendat, and the Haudenosaunee, and are now home to many diverse First Nations, Inuit, and Métis peoples.

We appreciate and respect the history and diversity of the land and are grateful to have the opportunity to work and meet in this territory.

Housekeeping

This session is being recorded.

The recording and slides will be shared via email

Please post questions using the Q&A

Closed captioning is available in English

All participants are muted and video disabled

Please post comments using the Chat

For technical support, please message Jenny Hill

Restoring and protecting critically important coastal areas

A funding stream under the Great Lakes Freshwater Ecosystem Initiative (GLFEI)

Lake Ontario | Burlington, Ontario | Credit: Wolfgang Hasselmann

- To support and promote local-level action to enhance water quality, ecosystem health, and the resilience of coastal areas experiencing stress due to climate risks and impacts
- Nine projects were awarded multi-year funding in fiscal year 2024/25
- **Ten projects were awarded funding in fiscal year 2025/26**

Webinar Objectives

SHARE the latest science, action, and engagement projects that will soon be taking place in a coastal area near you

FOSTER engagement among practitioners and researchers who are working to improve Great Lakes water quality and ecosystem health

SEEK feedback to help prioritize the focus of the upcoming Symposium at the Canada Centre for Inland Waters in Burlington (December)

Session Agenda

- Overview of the GLFEI funding stream
- Projects showcase in three parts:
  - Lake Ontario
  - Lake Erie
  - Lake Huron
- Highlights from the 2024 Symposium and discussion on priorities for the upcoming Symposium

Canada Water Agency | Agence de l'eau du Canada

Canada

Waves of Progress: GLFEI Coastal Areas Webinar

October 28, 2025

Freshwater Ecosystem Initiatives (FEIs)

Mackenzie River:
Knowledge gaps on water quality and ecosystem health and the effects of **climate change**

Fraser River:
Impacts from toxins, **nutrients**, sediment pollution and habitat loss

Lake Winnipeg:
Toxic and nuisance **algae** caused by **nutrient pollution**; **climate change** impacts

Lake of the Woods:
Nutrient pollution and the impacts of toxic and nuisance **algae**

Great Lakes:
Toxic and nuisance **algae** caused by **nutrient pollution**; contaminated and degraded Areas of Concern; Great Lakes coastal wetlands and nearshore health is under threat due to the impacts of **climate change**, other stressors including toxic chemicals.

St. Lawrence River:
Nutrient pollution and the impacts of toxic and nuisance **algae**; biodiversity loss, including loss of coastal wetlands; contaminated sediment and toxic chemicals.

Wolastoq/Saint John River:
Nutrient pollution and the impacts of toxic and nuisance **algae**.

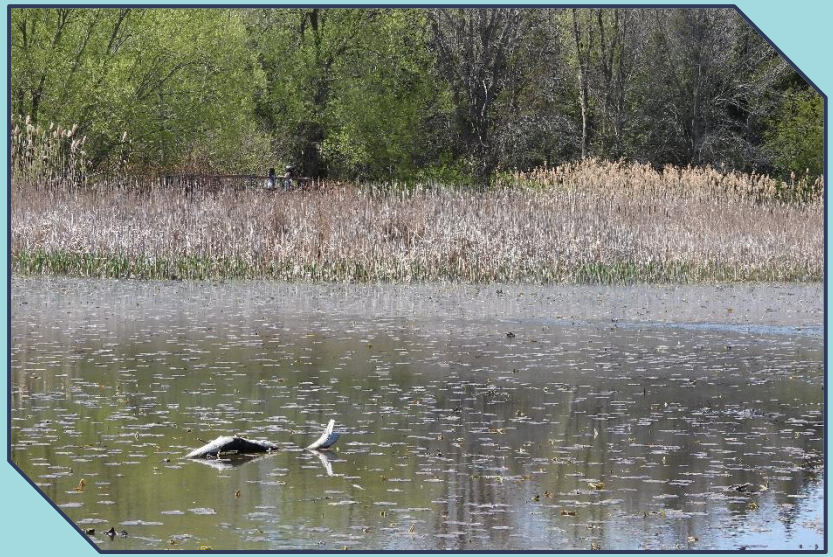
Lake Simcoe:
Nutrient pollution and the impacts of toxic and nuisance **algae**.

Great Lakes Freshwater Ecosystem Initiative (GLFEI)

- Target the most significant environmental challenges affecting Great Lakes water quality and ecosystem health.
- Program Priorities:
  - Restore water quality and ecosystem health in Great Lakes Areas of Concern (AOCs)
  - Prevent toxic and nuisance algae
  - **Restore and protect critically important coastal areas, including wetlands**
  - Reduce releases of harmful chemicals
  - Support community-based science
  - Increase participation of Indigenous Peoples in governance, stewardship, and monitoring
  - Advance Great Lakes governance, accountability, and reporting mechanisms

Protecting and Restoring Coastal Areas

- **Great Lakes nearshore areas**
  - To support and promote local level action to enhance water quality and ecosystem health in nearshore areas experiencing high cumulative stress and/or areas with high ecological value under threat from impaired coastal processes.
- **Great Lakes coastal wetlands**
  - To increase the resilience of coastal wetlands to climate-related risks and impacts and other stressors by engaging Canadians in projects that will result in tangible and measurable conservation benefits.



2025 - 2026: Coastal Areas Funding Stream

Our focus today!

10 projects valued at **$6 million** received funding

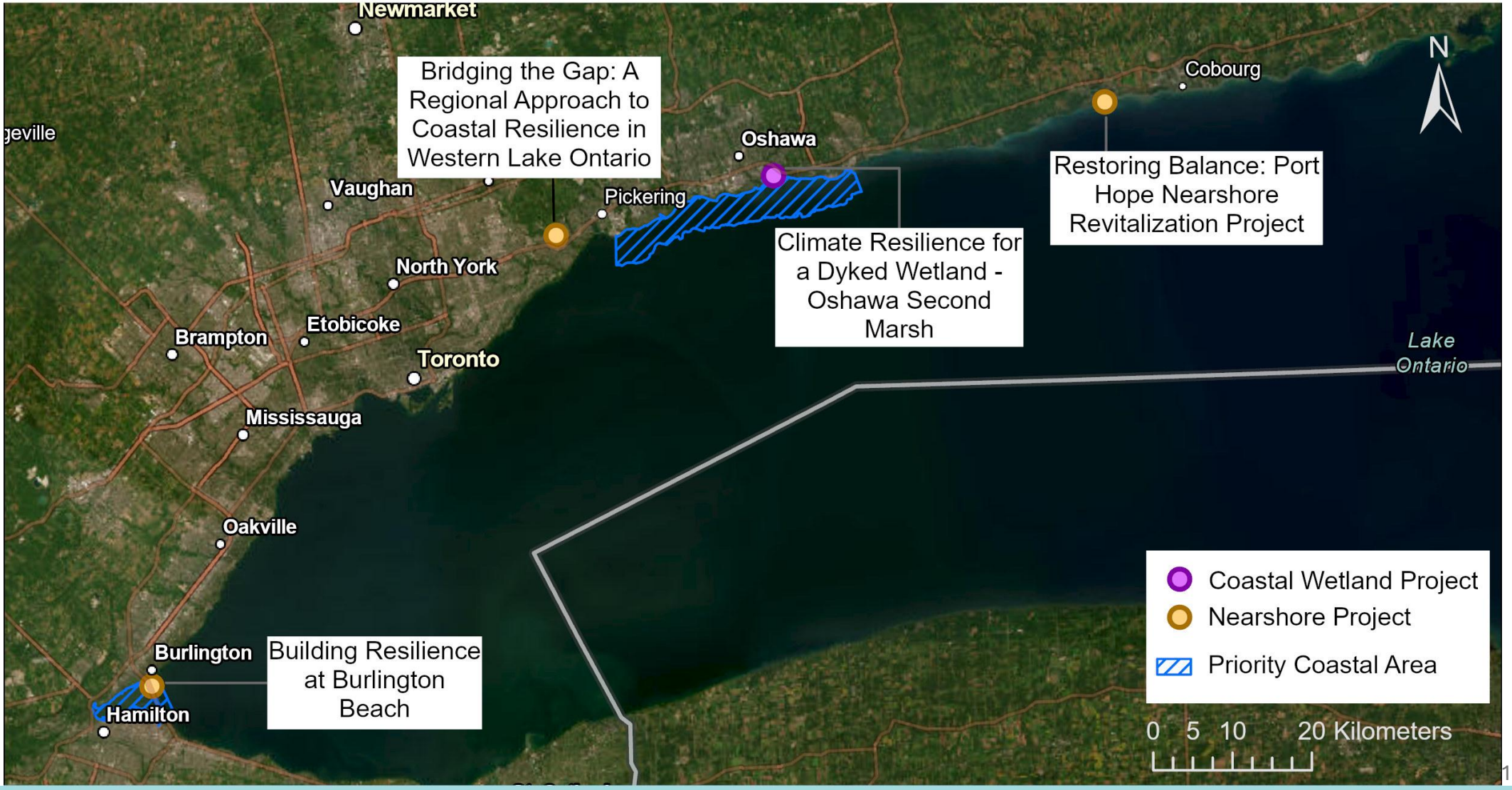
- 5 projects under Nearshore
- 5 projects under Coastal Wetlands

These projects will enhance:

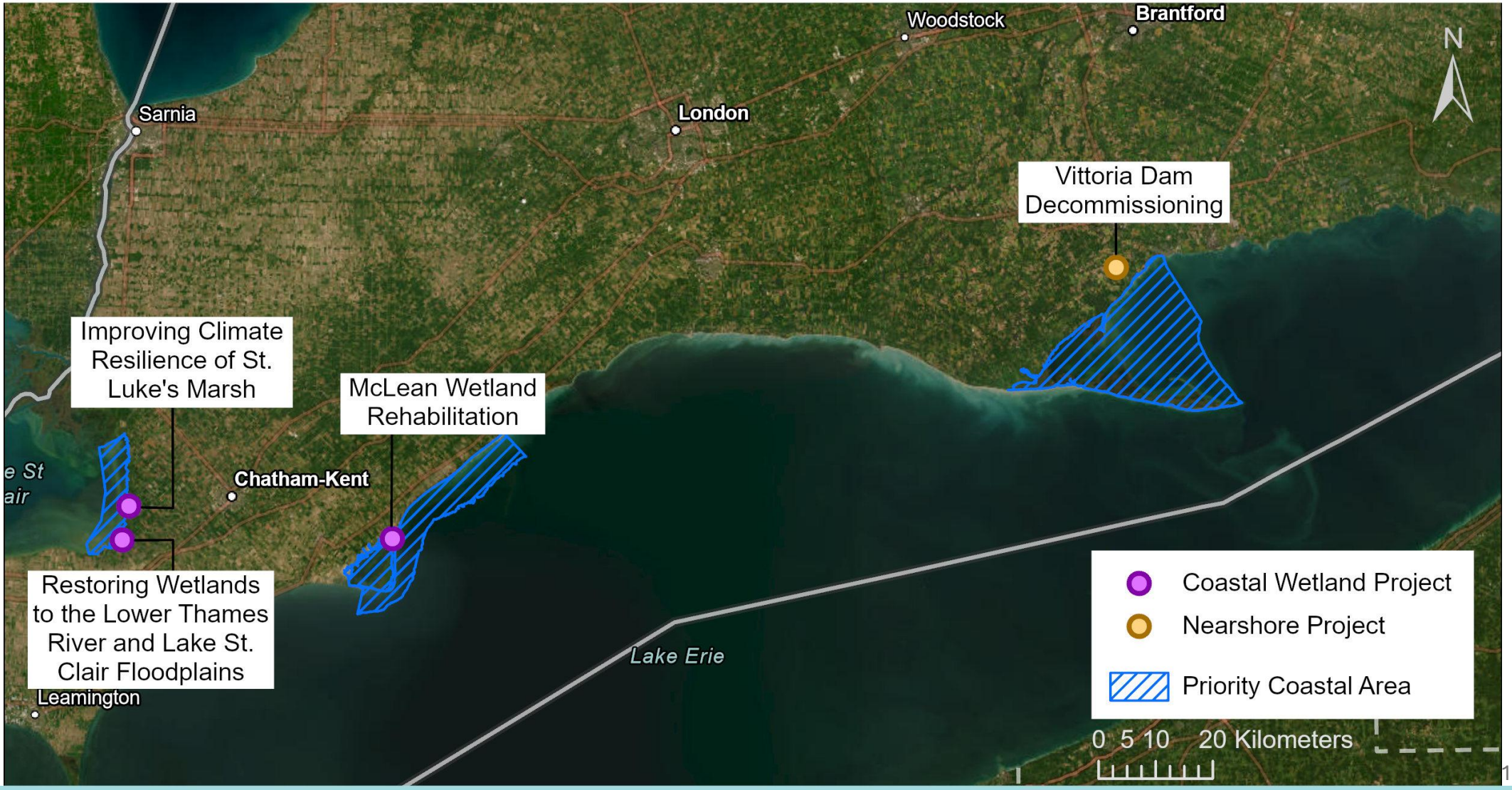
- Water quality
- Ecosystem health
- Coastal resilience

In Year 2, the GLFEI continues to receive strong interest, reflecting the value placed on protecting and restoring coastal areas and promoting local level action.

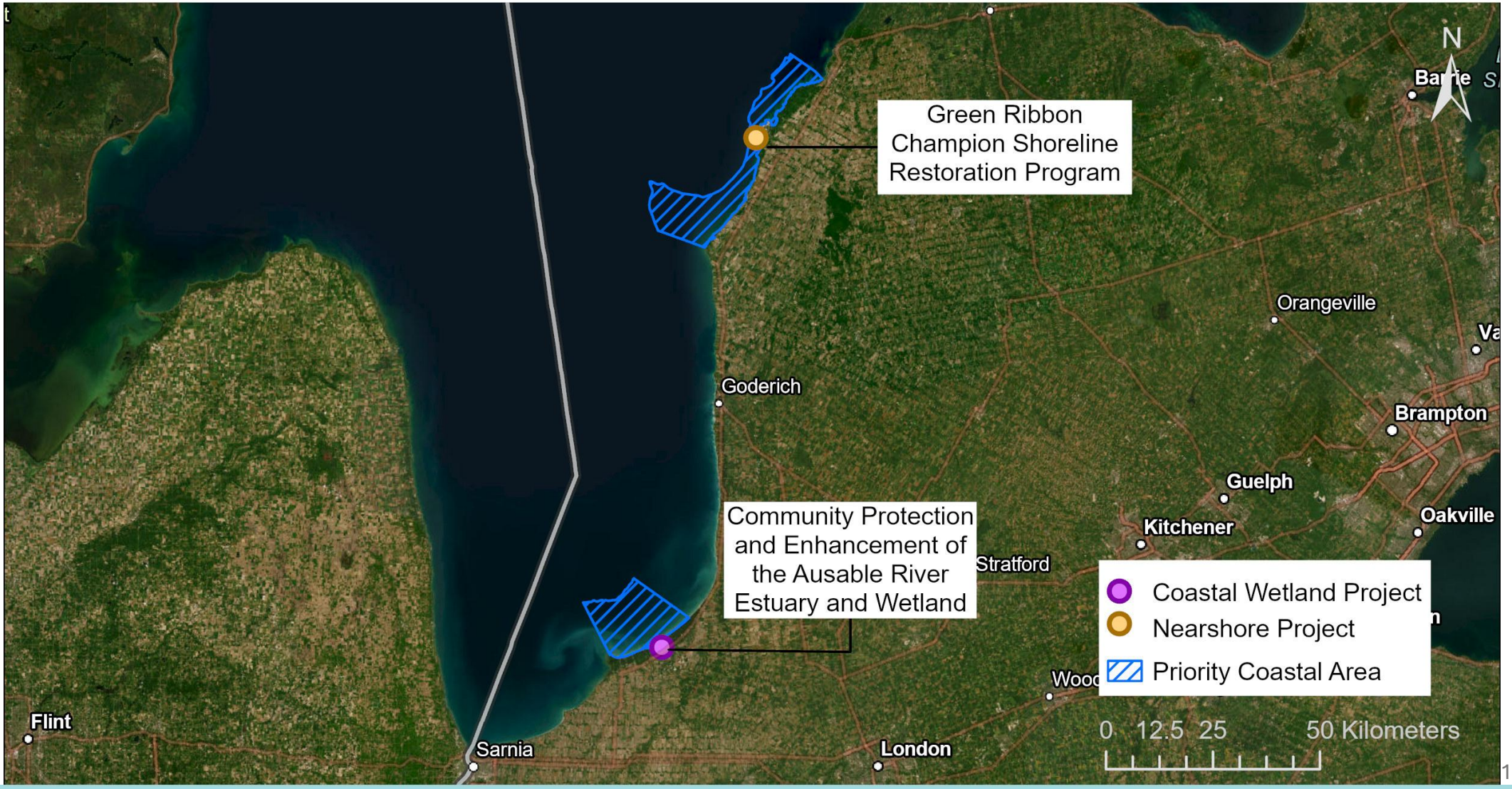
LAKE ONTARIO
GLFEI 2025 Project Locations



LAKE ERIE
GLFEI 2025 Project Locations



LAKE HURON
GLFEI 2025 Project Locations



Thank You!

Questions?

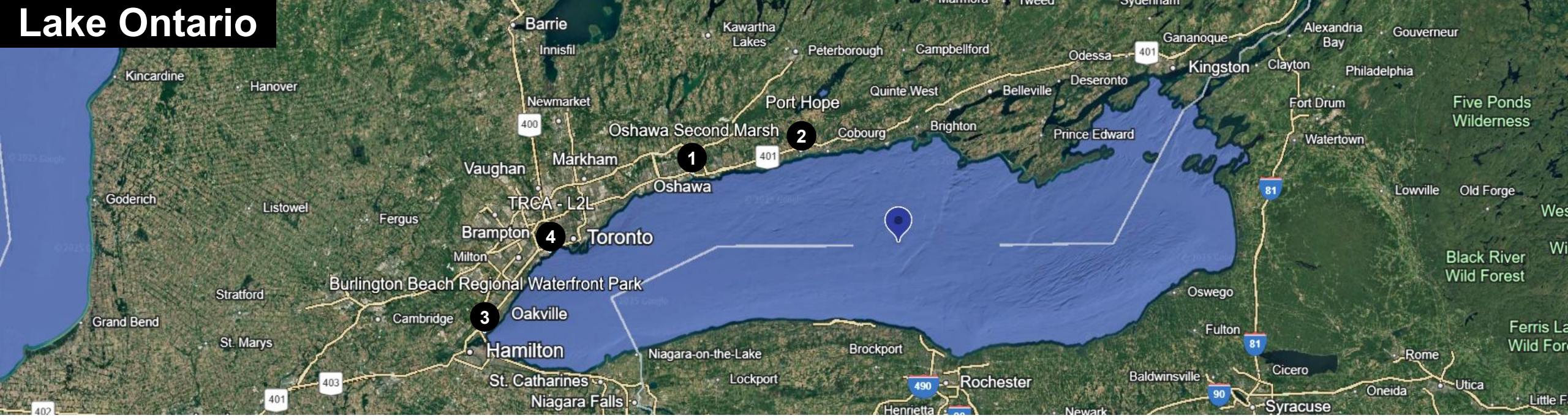
Canada Water Agency | Agence de l'eau du Canada

Nearshore Projects:
Dylan.Hrach@cwa-aec.gc.ca

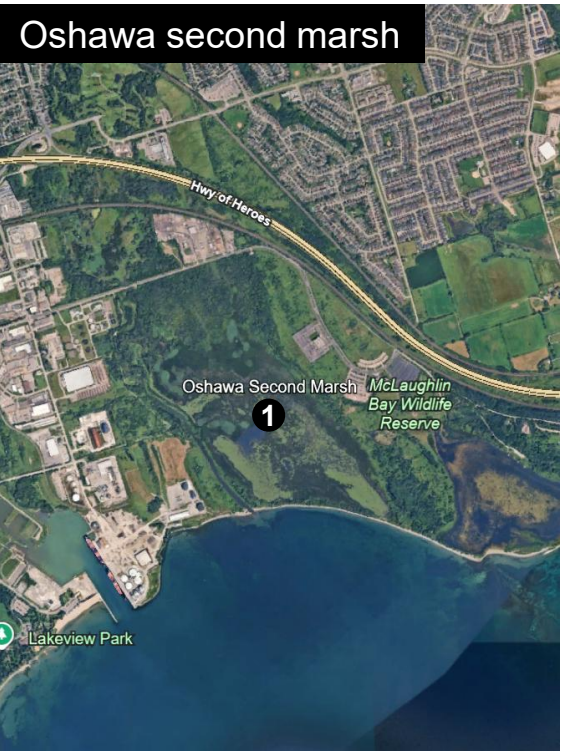
Coastal Wetlands Projects:
Anders.Holder@cwa-aec.gc.ca

Projects Showcase

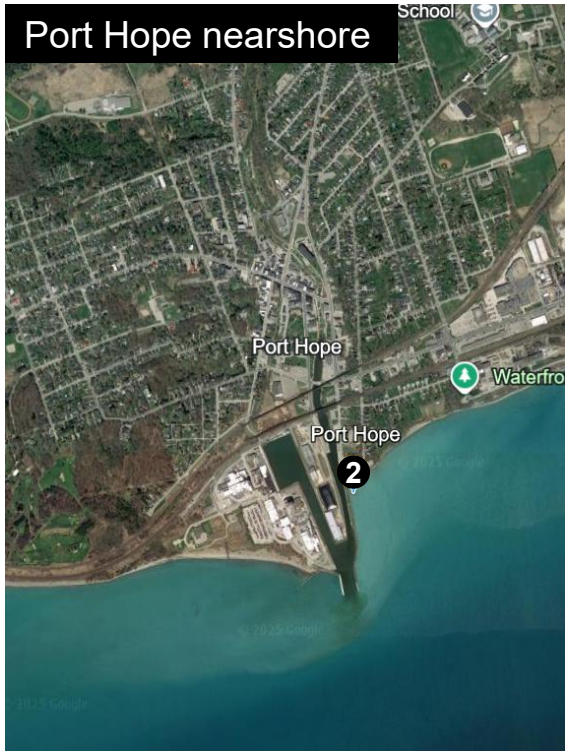
Lake Ontario



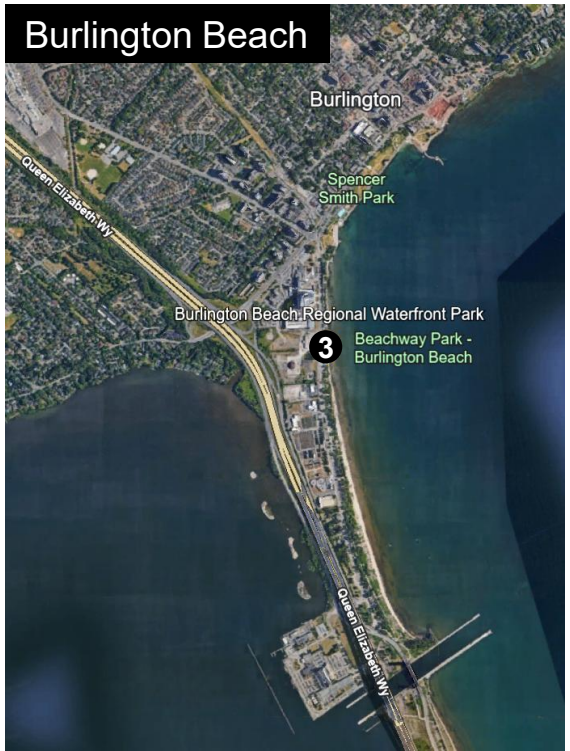
Oshawa second marsh



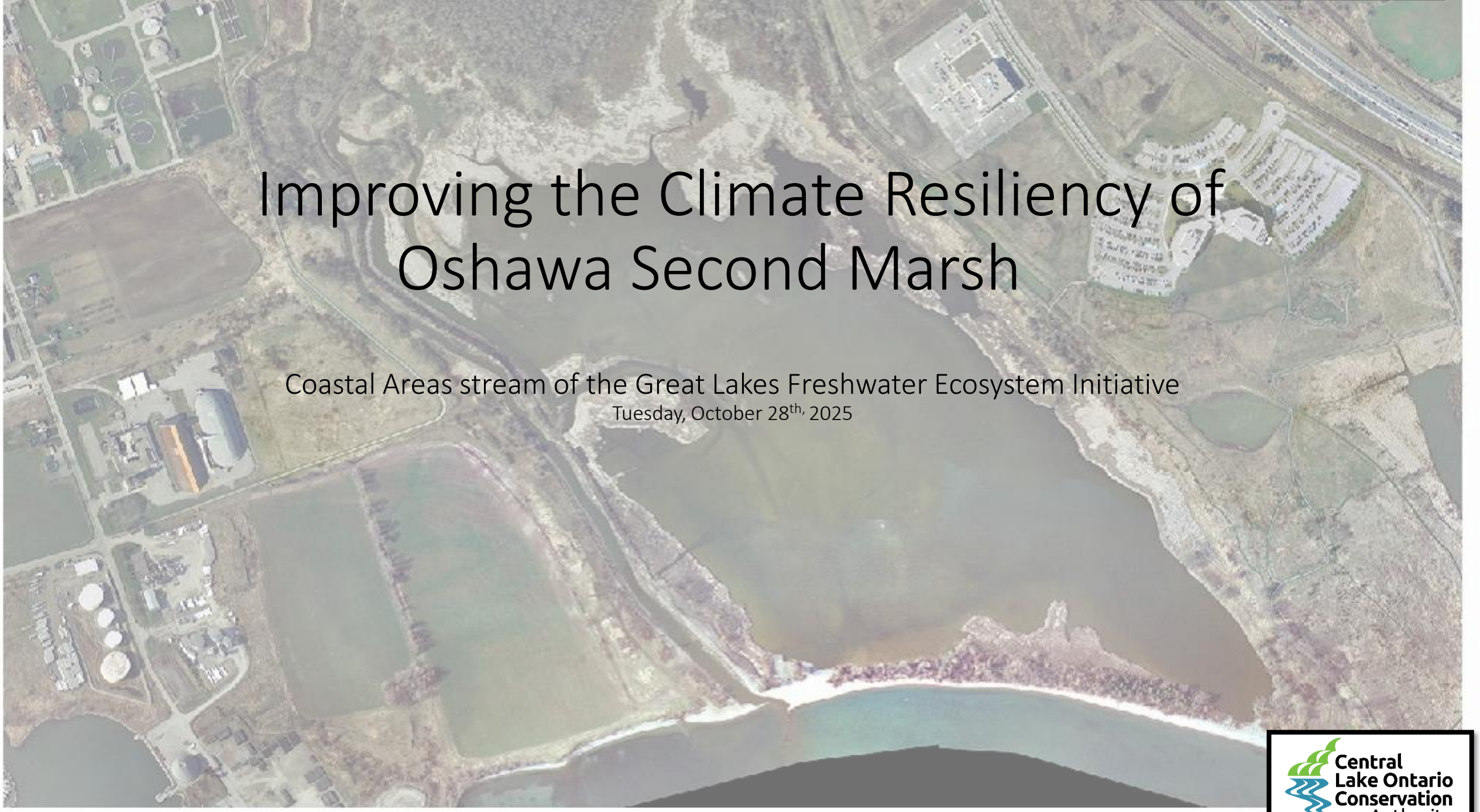
Port Hope nearshore



Burlington Beach



Western Lake Ontario

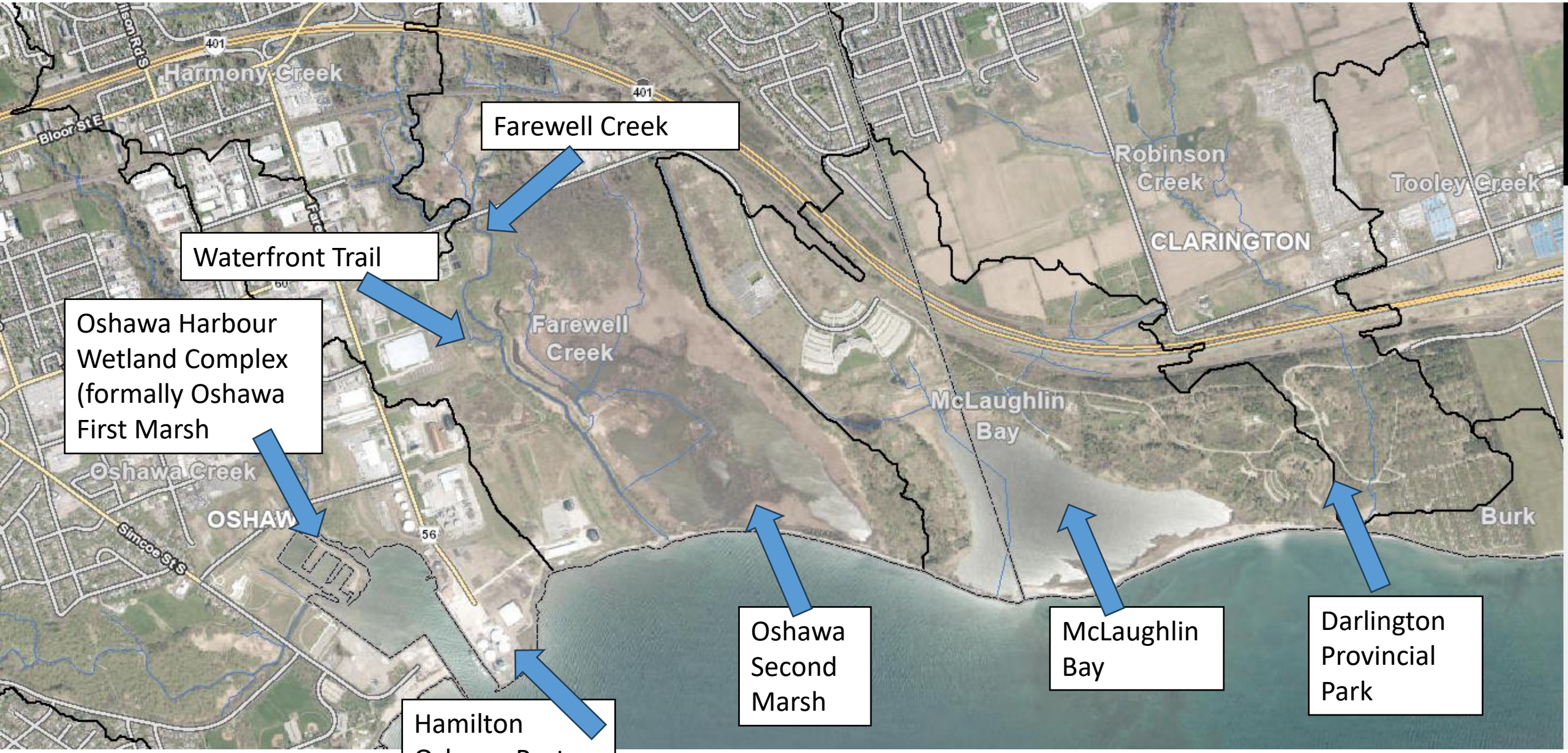


Improving the Climate Resiliency of Oshawa Second Marsh

Coastal Areas stream of the Great Lakes Freshwater Ecosystem Initiative

Tuesday, October 28th, 2025

Central Lake Ontario Conservation Authority


Harmony Creek
401
Bloor St E
Farewell Creek
Waterfront Trail
Oshawa Harbour Wetland Complex (formally Oshawa First Marsh
Farewell Creek
Robinson Creek
Tooley Creek
CLARINGTON
McLaughlin Bay
Oshawa Creek
OSHAW
Simcoe St S
56
Burk
Oshawa Second Marsh
McLaughlin Bay
Darlington Provincial Park
Hamilton Oshawa Port Authority

Wetland Interspersion and Bathymetry Restoration

- 475 meters of new channels
- Four new open areas
- Restoring historical aquatic hemi-marsh conditions
- Three hectares bathymetry improvements to restore diversity and provide thermal refuge
- Increasing fish and wildlife movements by focusing on areas with hydrological connections
- Six hectares of phragmites removal

Creek goes through wetland historically

OSHAWA

Creek

Creek bypasses wetland

OSHAWA

Farewell Creek

Increased hydrological connections allow for more water movement while still allowing for carp management and water level control (stop logs).

Hydrological Restoration

- Three new hydrological connections

Protective Wetland Features

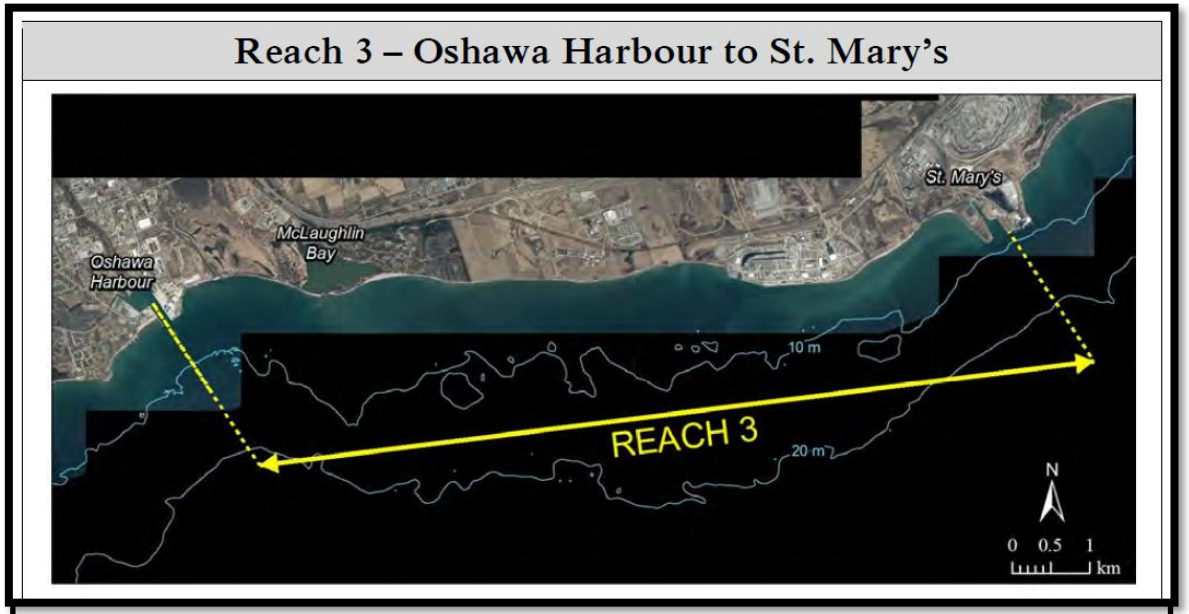
- Dynamic Beach(es):

Start (lat, long)	End (lat, long)	100-year Erosion Rate (m/year) or Stable	Dynamic Beach Name
43.8686, -78.8185	43.8696, -78.8131	0.25	Oshawa East Beach
43.8696, -78.8131	43.869, -78.8038	0.73	McLaughlin Bay Barrier Beach A
43.869, -78.8038	43.868, -78.7999	0.25	McLaughlin Bay Beach
43.868, -78.7999	43.8693, -78.7867	0.73	McLaughlin Bay Barrier Beach B
43.8693, -78.7867	43.8691, -78.7793	0.25	Port Darlington PP Beach
43.87, -78.7376	43.8694, -78.7318	0.25	Port Darlington Power Plant Fillet Beach
43.8738, -78.7	43.8749, -78.6951	Stable	St. Mary's West Fillet Beach

From Zuzek Inc (2020), Lake Ontario Shoreline Management Plan

Hillman Marsh in a Changing Climate

- Rising water levels initiated the rapid expansion of the breach in 2016
- Breach expanded from 15 m to almost 500 m in only 4 years
- 2019/2020 experienced record high water levels and near record low ice cover



- Long history of erosion
- Anthropogenic impacts are a root cause

Current Partners/Members of Technical Team:

- Ducks Unlimited Canada
- City of Oshawa
- Friends of Second Marsh
- Canada Water Agency
- Hamilton Oshawa Port Authority
- Alderville First Nation
- Mississaugas of Scugog Island First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Central Lake Ontario Conservation Authority

Current Progress:

- Phragmites removal
- Community engagement
- Technical Team Meetings for Objective Setting and Design Criteria
- First Nations Engagement
- Pre-restoration monitoring

Next Steps:

- Archaeology
- Detail designs
- Permitting
- Tender process

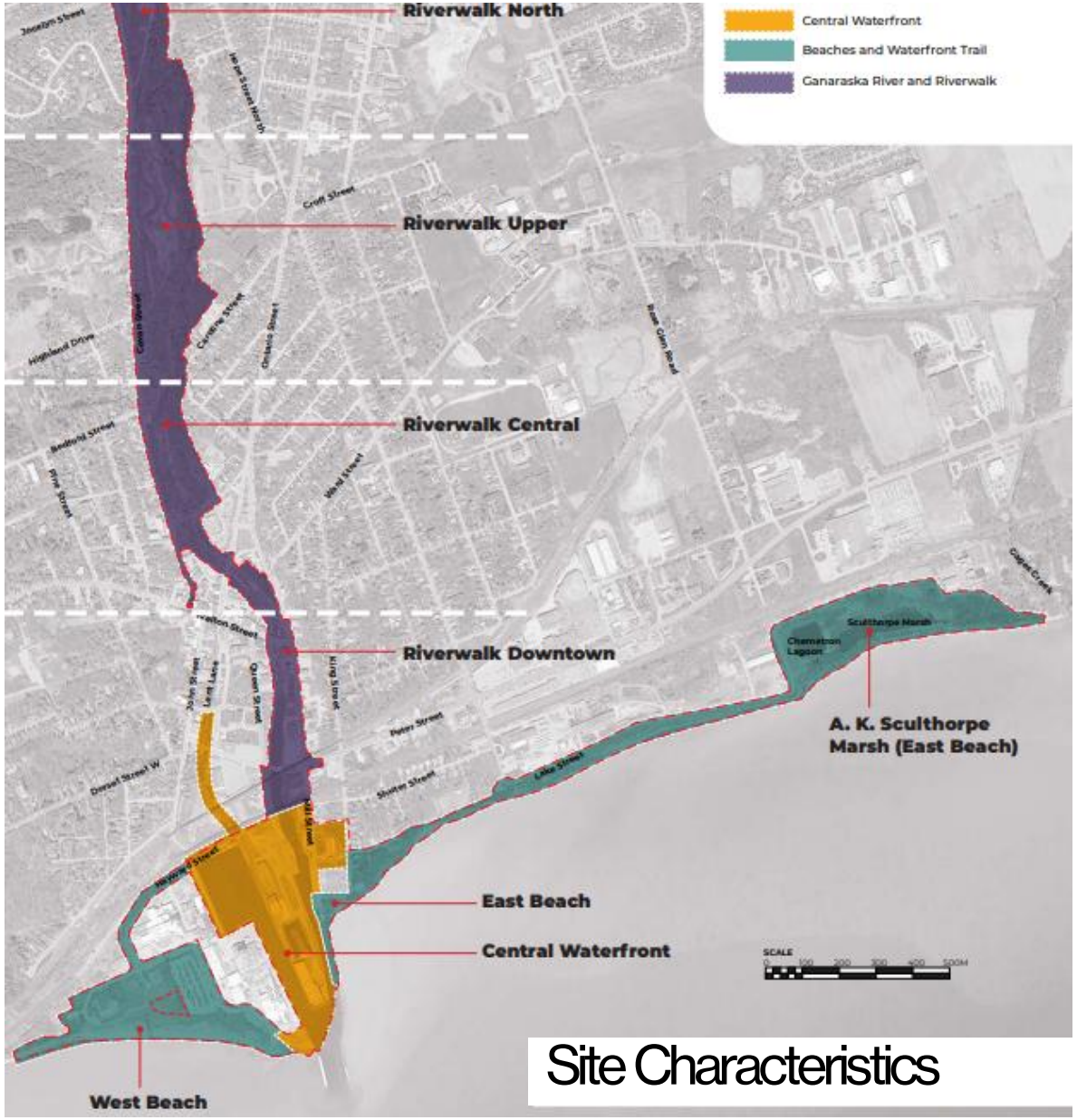
Central Lake Ontario Conservation Authority

Thank you

Dan Moore: dmoore@cloca.com

Environmental restoration fostering sustainable nearshore ecosystems

Restoring Balance: Port Hope Nearshore Revitalization Project



Site Characteristics

Port Hope Waterfront and River

Central Waterfront (Inner Harbour, Centre Pier, and Jetties)

- Examine marina opportunity, public access, and recreational opportunities.
- Improve connectivity and safety while preserving heritage and natural features.

Ganaraska River Corridor

- Extends from Lake Ontario passing through the downtown core
- Includes significant landmarks like Corbett's Dam and Port Hope's historic downtown
- Emphasize ecological protection, public art, Indigenous education, and improved trail connectivity.

West Beach

- Identified as a dynamic beach hazard area
- Address safety, erosion control, and sustainable recreational use while balancing natural preservation with public enjoyment.

East Beach

- Supports passive recreation and environmental education.

Wetland and Barrier Beach

- A sensitive ecological zone requiring protection and restoration
- Promote habitat conservation, controlled access, and nature-based experiences.

Project Overview

Project Purpose

The project addresses establishing an understanding of coastal sediment disruptions to restore shoreline and wetland ecological health.

Technical Evaluation

Comprehensive analysis of sediment sources and sinks within the adjacent littoral cell to inform restoration plans.

Nature-Based Solutions

Future jetty and beach modifications use anticipated to use nature-based approaches to restore sediment flow and resilience.

Project Timeline and Impact

A two-year project aiming for sustainable, environment-friendly solutions benefiting the local and regional shoreline.

Objectives and Rationale

Project Planning and Consultation

A detailed workplan and RFP to be developed to establish project milestones, scope, and stakeholder engagement.

Coastal Process Evaluation

A coastal engineering consultant to develop sediment transport models to evaluate shoreline dynamics and jetty impacts.

Fieldwork and Data Collection

Bathymetry, substrate surveys, and hydrodynamic analysis to be conducted to understand nearshore sediment and wave patterns.

Stakeholder Collaboration and Communication

Engagement with partners and the community will be facilitated through communication schedules and joint technical reviews.

Anticipated Outcomes

Environmental Restoration

The project aims to improve sediment flow and shoreline resilience, restoring barrier beaches and coastal wetlands to support biodiversity.

Strategic Coastal Management

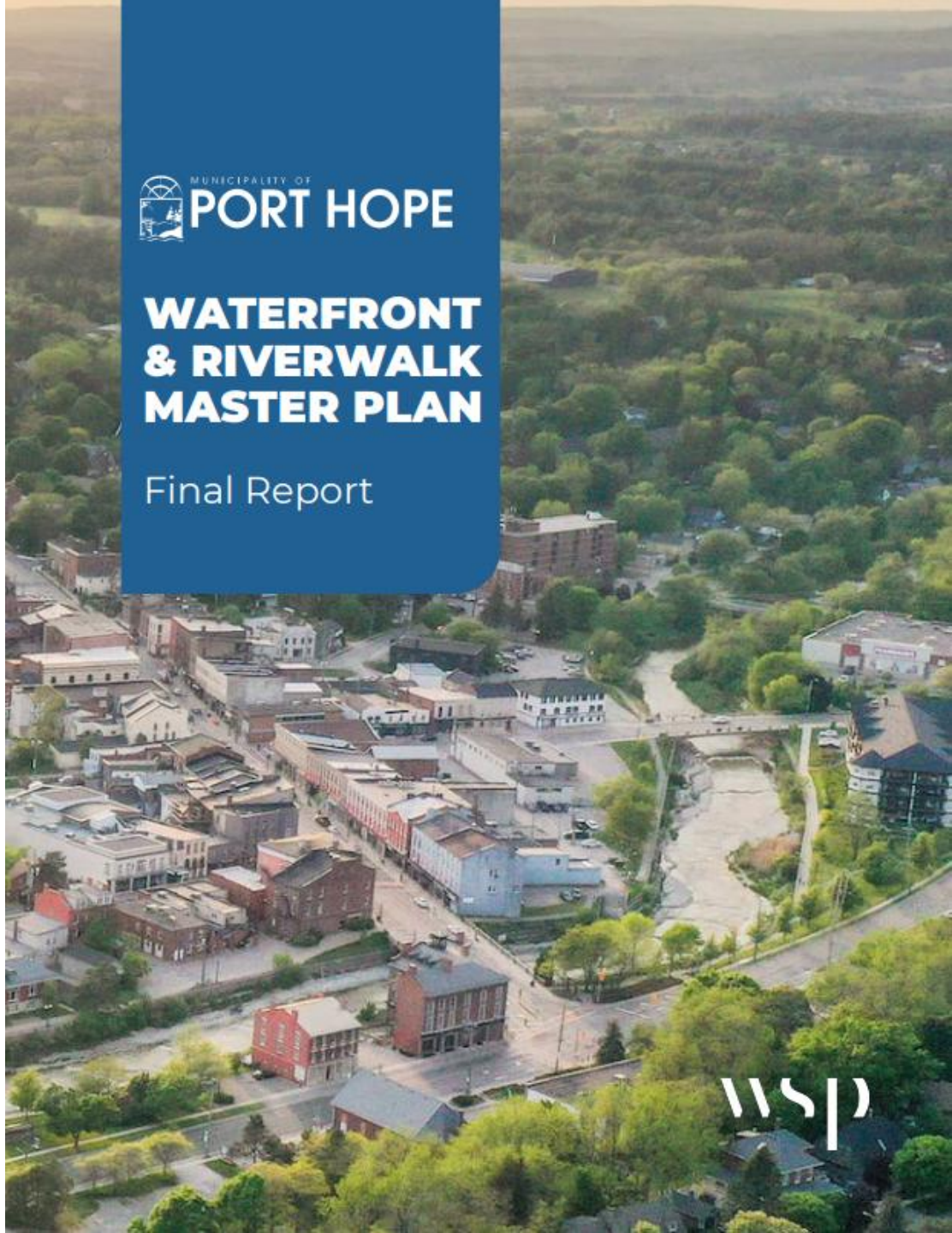
Develops scalable nature-based solutions and shares sediment transport data to aid coastal management across the Great Lakes region.

Knowledge Sharing

Informs approaches for implementation of the Waterfront and RiverWalk Master Plan and other impacts within the reach.

Adaptation

Serves as a model for restoration and adaptation by promoting sustainable sediment management and resilient infrastructure.



Collaboration, Engagement and Future Plans

Collaborative Stakeholder Engagement

The project engages multiple stakeholders for technical reviews, information sharing, and coordinated progress tracking, through support of the funding program.

Community Communication

Communication plans include social media updates, education and awareness.

Advanced Modeling and Design Evaluation

Advanced modeling assesses jetty impacts and potential alterations to improve sediment transport and shoreline resilience. Considerations for how Ganaraska River intersect into the mouth.

Comprehensive Reporting and Knowledge Sharing

Technical reports, presentations, and updates on document findings, lessons, and recommendations for sustainable coastal management.

Burlington Beach Regional Waterfront Park

GLFEI Coastal Areas Waves of Progress Webinar

October 28, 2025

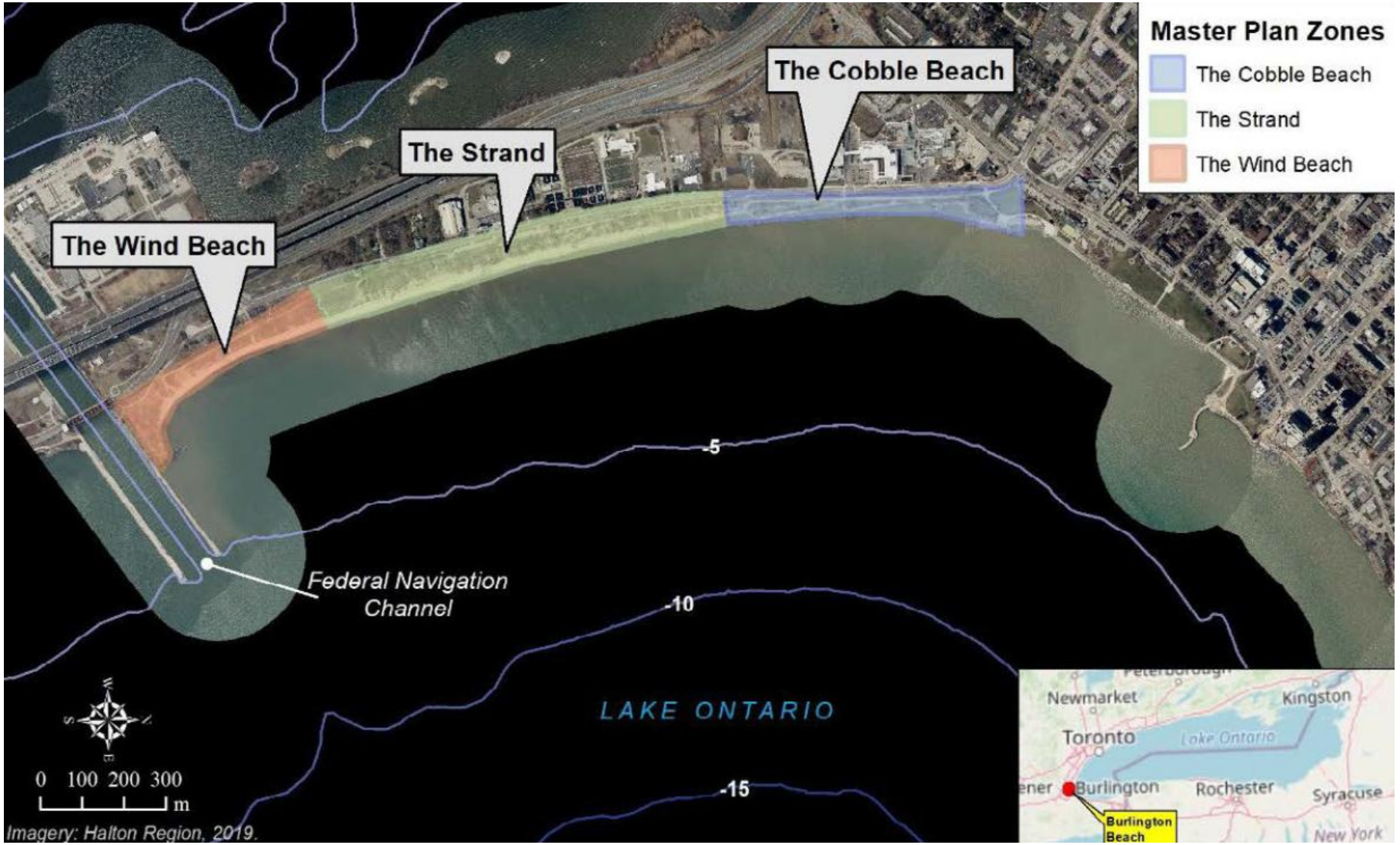
Halton Region

Conservation Halton

City of Burlington

Canada Water Agency | Agence de l'eau du Canada

Burlington Beach Regional Waterfront Park



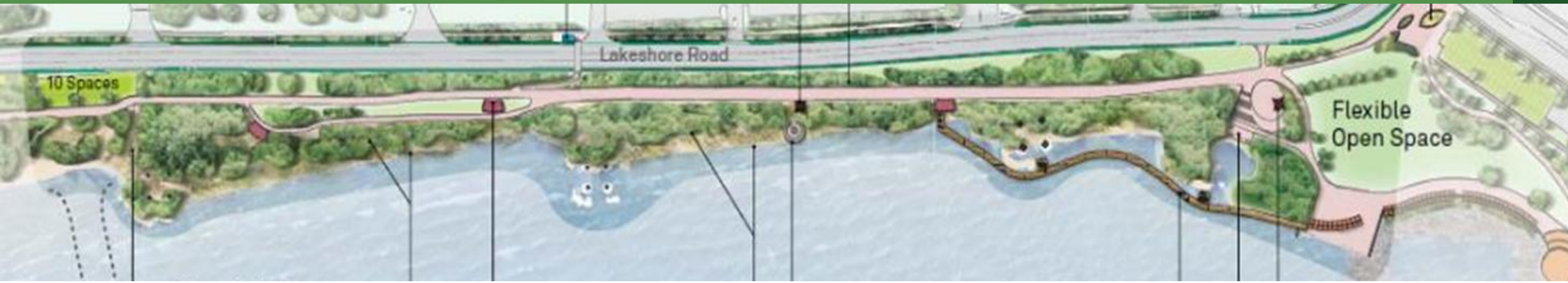
Images of major flooding events along shoreline of Burlington Beach in the 1950s and 1970s

Wind Beach

- Key area for dune regeneration and rehabilitation
- Supports the highest concentration of rare vegetation communities and plant species
- Where dunes have sufficient elevation, rehabilitation will focus on establishing a new foredune

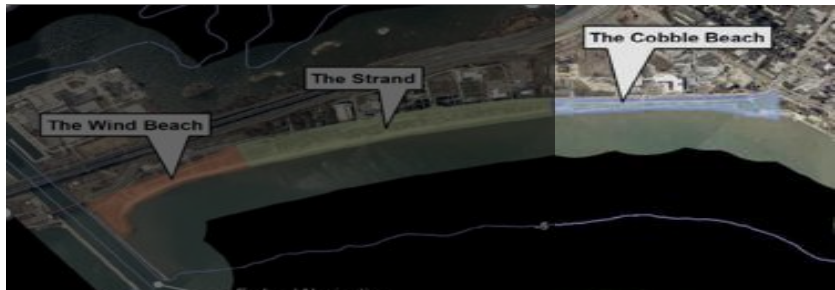
The Strand

- Central and southern portions of *The Strand* have eroded foredunes
- Stabilization will be achieved by using vegetation and higher dune elevations



Cobble Beach

- Grey-Green Approach: Blend of natural and conventional methods including:
  - Cobble beach nourishment
  - Engineered armour stone headlands for additional shoreline protection



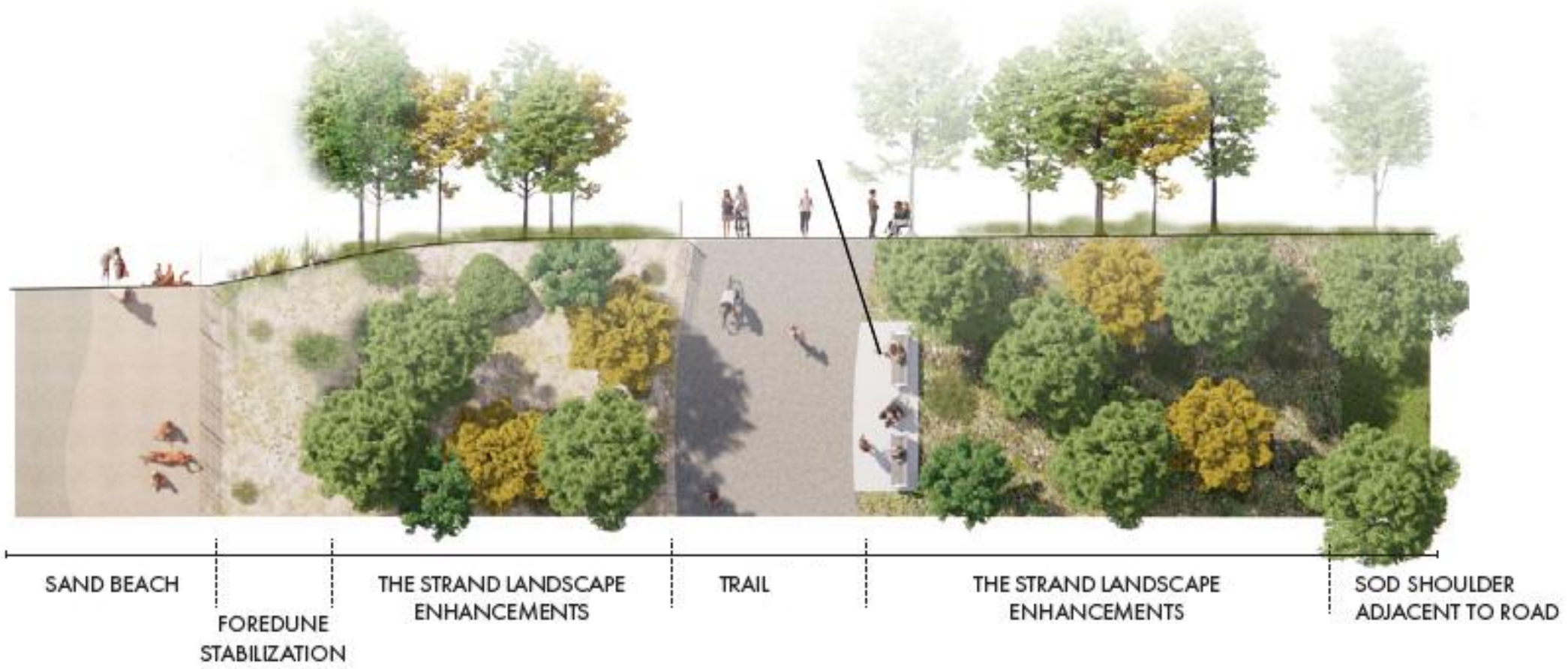
Current Activities

- Detailed beach restoration planning and designs are currently underway which will inform construction planned for 2027-2029

- **Design** will consider:
  - Dune and slope grading, sand characteristics
  - Management and erosion mitigation structures
  - Vegetation re-establishment

- **Construction** will encompass:
  - Restoration of the natural dune ecosystem
  - Headland reconstruction and
  - Cobble beach nourishment construction including native dune grass plantings

Thank You


SAND BEACH
FOREDUNE STABILIZATION
THE STRAND LANDSCAPE ENHANCEMENTS
TRAIL
THE STRAND LANDSCAPE ENHANCEMENTS
SOD SHOULDER ADJACENT TO ROAD

Bridging the Gap:

A Regional Approach to Coastal Resilience in Western Lake Ontario

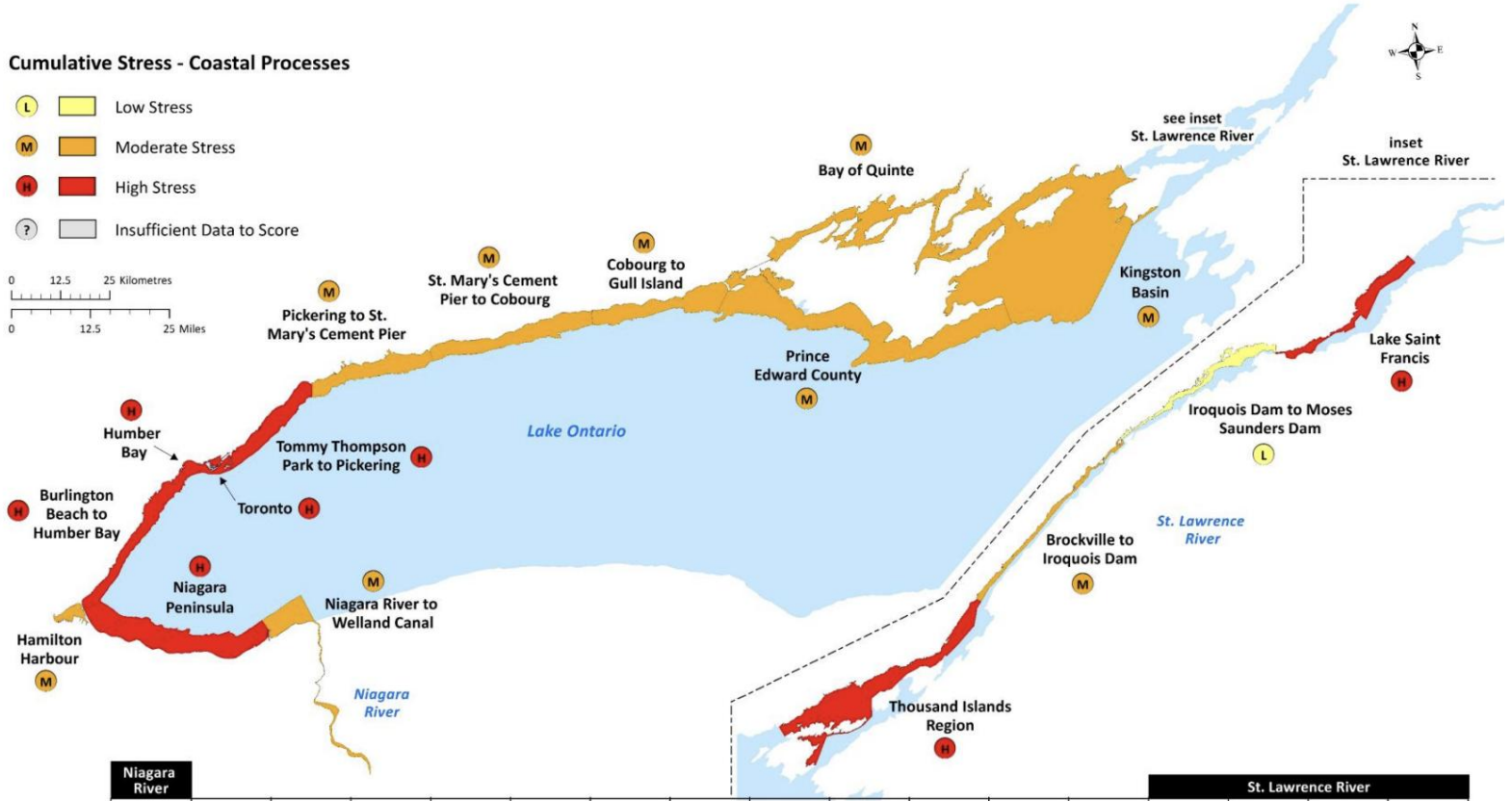
Scarborough Bluffs | Credit: Rinat Haque

October 28, 2025

Toronto and Region Conservation Authority

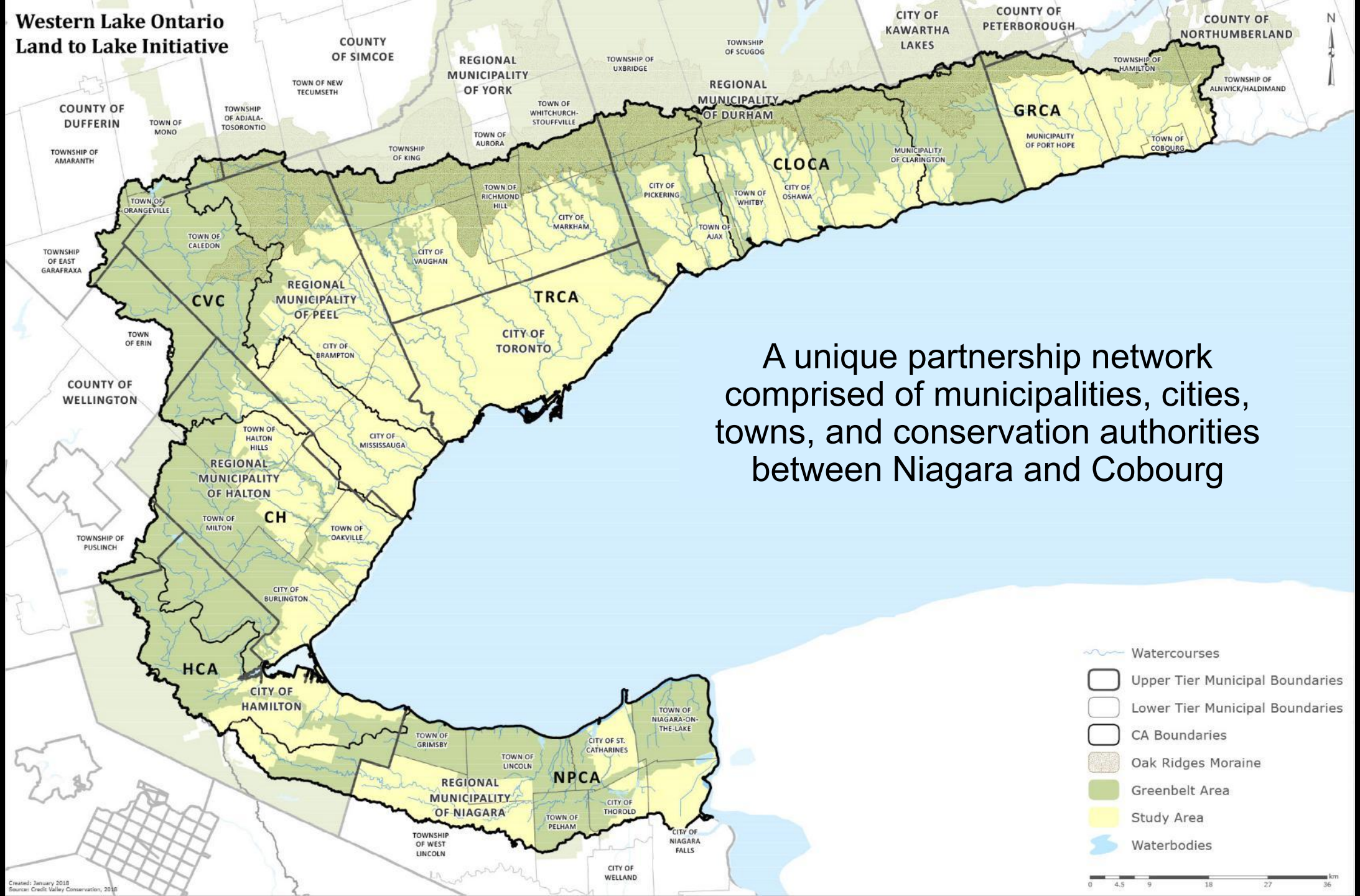
Cumulative impact of impaired coastal processes

the assessment allows us to view sources of stress at multiple scales to identify specific priorities for action



	Niagara River										St. Lawrence River						
	Niagara River to Welland Canal	Niagara Peninsula	Hamilton Harbour	Burlington Beach to Humber Bay	Humber Bay	Toronto	Tommy Thompson Park to Pickering	Pickering to St. Mary's Cement Pier	St. Mary's Cement Pier to Cobourg	Cobourg to Gull Island	Prince Edward County	Bay of Quinte	Kingston Basin	Thousand Islands Region	Brockville to Iroquois Dam	Iroquois Dam to Moses Saunders Dam	Lake Saint Francis
Shoreline Hardening	41%	64%	84%	80%	66%	52%	55%	22%	20%	23%	25%	22%	36%	39%	55%	18%	60%
Littoral Barriers	0	6	NA	12	NA	2	6	4	3	2	NA	NA	NA	NA	NA	NA	NA
Tributary Connectivity	22%	51%	81%	39%	3%	6%	65%	47%	42%	81%	66%	9%	29%	13%	88%	95%	65%

Source: ECCC


Western Lake Ontario
Land to Lake Initiative
A unique partnership network comprised of municipalities, cities, towns, and conservation authorities between Niagara and Cobourg
CVC
TRCA
CLOCA
GRCA
CH
HCA
NPCA
REGIONAL MUNICIPALITY OF PEEL
REGIONAL MUNICIPALITY OF YORK
REGIONAL MUNICIPALITY OF DURHAM
REGIONAL MUNICIPALITY OF HALTON
REGIONAL MUNICIPALITY OF NIAGARA
CITY OF TORONTO
CITY OF HAMILTON
COUNTY OF SIMCOE
COUNTY OF DUFFERIN
COUNTY OF WELLINGTON
COUNTY OF PETERBOROUGH
COUNTY OF NORTHUMBERLAND
CITY OF KAWARTHA LAKES
TOWN OF NEW TECUMSETH
TOWNSHIP OF ADJALA-TOSORONTIO
TOWN OF MONO
TOWNSHIP OF AMARANTH
TOWNSHIP OF KING
TOWNSHIP OF UXBRIDGE
TOWNSHIP OF SCUGOG
TOWN OF AURORA
TOWN OF WHITCHURCH-STOUFFVILLE
TOWN OF ORANGEVILLE
TOWN OF CALEDON
TOWNSHIP OF EAST GARAFRAXA
TOWN OF ERIN
TOWN OF HALTON HILLS
TOWN OF MILTON
TOWNSHIP OF PUSLINCH
CITY OF BRAMPTON
CITY OF MISSISSAUGA
CITY OF VAUGHAN
TOWN OF RICHMOND HILL
CITY OF MARKHAM
CITY OF PICKERING
TOWN OF AJAX
TOWN OF WHITBY
CITY OF OSHAWA
MUNICIPALITY OF CLARINGTON
TOWN OF OAKVILLE
CITY OF BURLINGTON
TOWN OF GRIMSBY
TOWN OF LINCOLN
TOWNSHIP OF WEST LINCOLN
TOWN OF PELHAM
CITY OF ST. CATHARINES
CITY OF THOROLD
CITY OF NIAGARA FALLS
TOWN OF NIAGARA-ON-THE-LAKE
CITY OF WELLAND
TOWNSHIP OF HAMILTON
TOWNSHIP OF ALNWICK/HALDIMAND
MUNICIPALITY OF PORT HOPE
TOWN OF COBOURG
N
Watercourses
Upper Tier Municipal Boundaries
Lower Tier Municipal Boundaries
CA Boundaries
Oak Ridges Moraine
Greenbelt Area
Study Area
Waterbodies
0 4.5 9 18 27 36 km
Created: January 2018
Source: Credit Valley Conservation, 2018

Project goal

- Work collaboratively with Western Lake Ontario partners to develop a **regional nature-based coastal resilience options guide** and improve knowledge sharing and coordination

- Builds on funding support from the Ministry of the Environment, Conservation and Parks (MECP)

Colonel Samuel Smith Park

Project objectives

Improve knowledge sharing and coordination

Help fill key science and knowledge gaps

Advance the implementation of nature-based and hybrid solutions

Strengthen climate resilience and enhance ecosystem health and water quality

Activities:

- Develop a data and knowledge sharing platform
- Model current and future climate scenarios to assess regional climate risks and shoreline vulnerability
- Develop a regional prioritization tool to help identify strategic locations for nature-based and hybrid solutions
- Develop an integrated nature-based coastal resilience options guide

Draft typology and case studies

- Aquatic & Coastal Vegetation
- Beaches & Dunes
- Habitat Creation & Structural Complexity
- Land Protection & Access Management
- Offshore Features
- Riparian & Upland Vegetation
- Rivers & Hydrologic Connectivity
- Sediment Management & Nourishment
- Shoreline Softening & Bioengineering
- Species & Genetic Adaptation
- Urban Green Infrastructure & Naturalisation
- Wetlands & Floodplains

Wetland creation at Tommy Thompson Park

Sand dune restoration at Gibraltar Point

Proud recipient of:

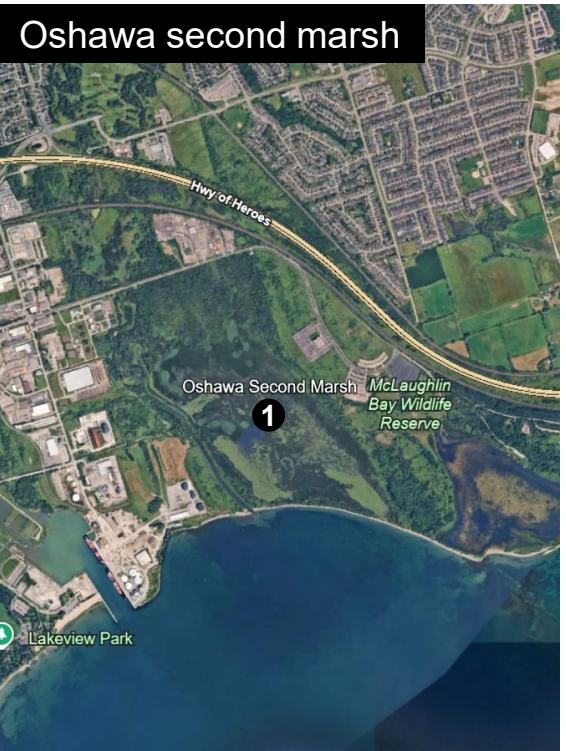
Thank you

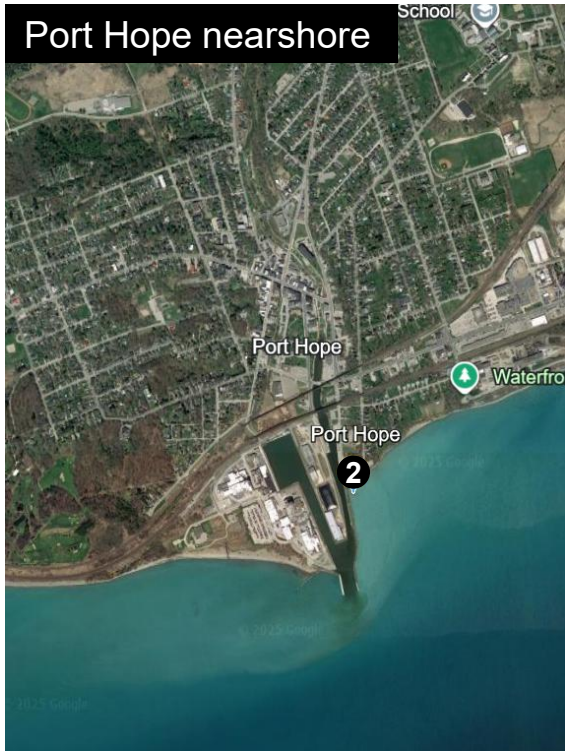
Namrata Shrestha
Senior Manager, Watershed Planning and Reporting
namrata.shrestha@trca.ca

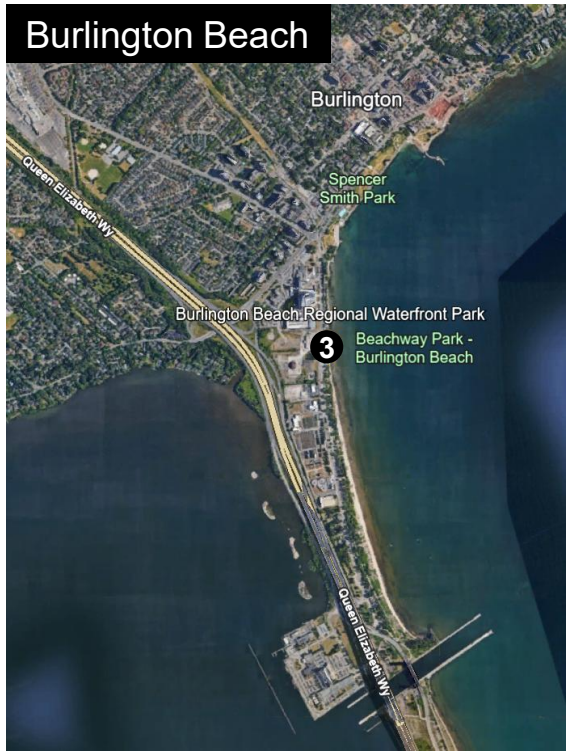
Toronto and Region Conservation Authority

Lake Ontario

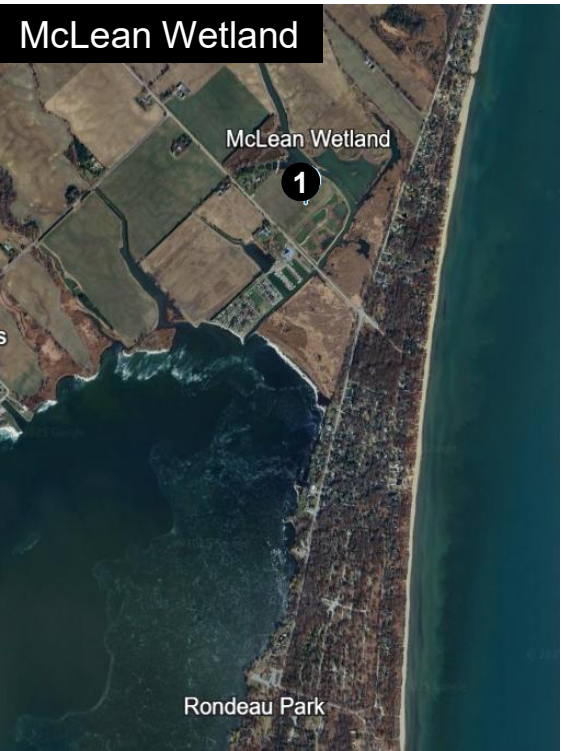
Q&A and discussion

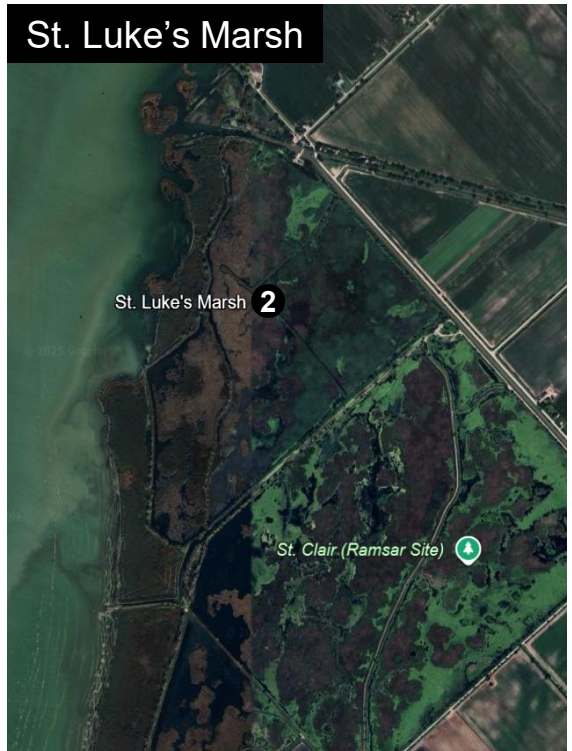







Lake Erie
Lansing
Holt
Howell
Rochester Hills
Troy
Tillsonburg
St Thomas
Aylmer
Fort Erie
Geneseo
McLean Wetland
St. Luke's Marsh
Detroit
LTVCA - lower Thames
Lake Erie
Fredonia
Hornell
Battle Creek
Jackson
Ann Arbor
Portage
Erie
Olean
Coldwater
Three Rivers
Hillsdale
Adrian
Monroe
Bradford
Sturgis
Ashtabula
Edinboro
Warren
Coudersport
Angola
Toledo
Euclid
Mentor
Meadville
Allegheny
National Forest
Susquehannock
State Forest
Perrysburg
Bryan
Cleveland
Oil City
Ridgway
St Marys
Auburn
Defiance
Bowling Green
Sandusky
Lorain
Fremont
Sproul
State Forest


McLean Wetland
Rondeau Park


St. Luke's Marsh
St. Clair (Ramsar Site)


St. Luke's Marsh
Pain Court
LTVCA - lower Thames
Prairie Siding
Lighthouse
Cove
Jeannette
North
Tilbury


Vittoria Dam
Vittoria
Conservation Area

McLean Wetland Rehabilitation

Craig Paterson
Manager of Biology
St Clair Region Conservation Authority

Location: Keith McLean Conservation Lands

- Owned and managed by SCRCA
- Connected to Rondeau Bay
- Key Biodiversity Area (IUCN)
- Critical Habitat

Project Goal

Develop a climate-resilient wetland system, capable of withstanding fluctuations in lake levels, extreme drought, and thermal changes. This initiative aims to promote the long-term recovery of threatened and endangered species, enhance water quality in Lake Erie, and foster collaborative efforts among restoration practitioners, private, and academic partners.

Rationale

- Hydrologically disconnected – elevations lower than outlet, perched culvert
- Fish stranding
- Thermal stress
- Poor water quality

Unique Considerations

- Keep out Invasive Carp
- Multiple Invasive aquatic plants
- Spawning habitat for Endangered Spotted Gar
- Municipal Drain
- Critical Habitat
- Biodiversity hotspot!

The Approach

- Phased – Adaptive Management
- Fish and Wildlife Relocation
- Regrading
- Culvert Replacement
- Invasive Species Management- Carp exclusion
- Research – Fish Community Assessments and PIT Tagging

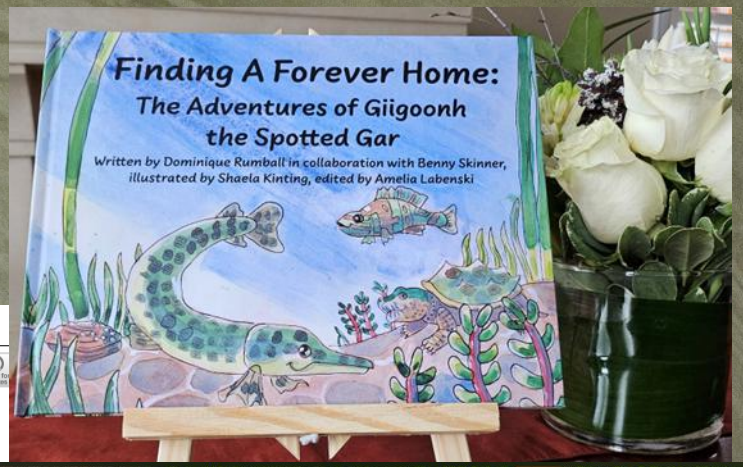
Inter Agency Cooperation and Research is the Key

- PhD research - Dominique Rumball – Before After Control Impact Study (BACI)
- Evidence-based Restoration
- Integrated Adaptive Management
- Shared Resources
- Experience and training opportunities for early career students and researchers

The resources required to undertake such a study often exceed the capacity of restoration practitioners, such as conservation authorities, and typically extend beyond the practitioner's mandates and/or funding period (Rumball et al, 2025)

Outcomes of Note

- Three acres of coastal wetland connected and restored
- Research Paper
- Children's Book
- TV Episode
- Podcast
- Documentary – Work Cabin Films



Environ Biol Fish
https://doi.org/10.1007/s10641-025-01744-1

Evaluating jail-bar exclusion design for selective passage of turtles and fishes, including invasive common carp (*Cyprinus carpio*) and endangered spotted gar (*Lepisosteus oculatus*)

Dominique Rumball · Craig Paterson · Nicholas E. Mandrak

Received: 28 November 2024 / Accepted: 19 August 2025

Abstract Managing aquatic invasive species, such as common carp (*Cyprinus carpio*), is critical to protect and restore native ecosystems, including the at-risk species living in them. This study evaluated jail-bar exclusion to guide the design of an exclusion structure preventing the passage of common carp into newly created coastal wetland habitat expected to provide spawning habitat for the endangered spotted gar (*Lepisosteus oculatus*). To guide the design and implementation of said exclusion structure, the effects of exclusion on the in-water passage of native fishes and turtles was examined. Fifty sites in Rondeau Bay, Ontario, were sampled in 2023 and 2024 using repeated hoop-net sets with no exclusion (control), and 5 cm, 7 cm, or 9 cm wide exclusion treatments. Although the composition of the native fish and turtle species captured were similar across all treatments, the passage of wide-bodied fishes and turtles with large carapace heights was impacted by the 5 cm and 7 cm exclusions. All common carp that passed the exclusions were gre at earliest sexual maturity, with the ted gar captured differing significantl despite capturing similar mean size across all treatments. This experimen as a result of inter-agency cooperatio required for the successful implemen exclusion.

Keywords Restoration · Endangere Coastal wetland · Management · Inva

Introduction

Wetlands ar numerous a wid and

D. Rumball (✉) · N. E. Mandrak
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N. E. Mandrak
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C. Paterson
St. Clair Region Conservation Authority, Strathroy, ON N7G3P9, Canada
e-mail: cpaterson@scrca.on.ca

Published online: 24 September 2025

WORKCABIN FILMS

Thank You

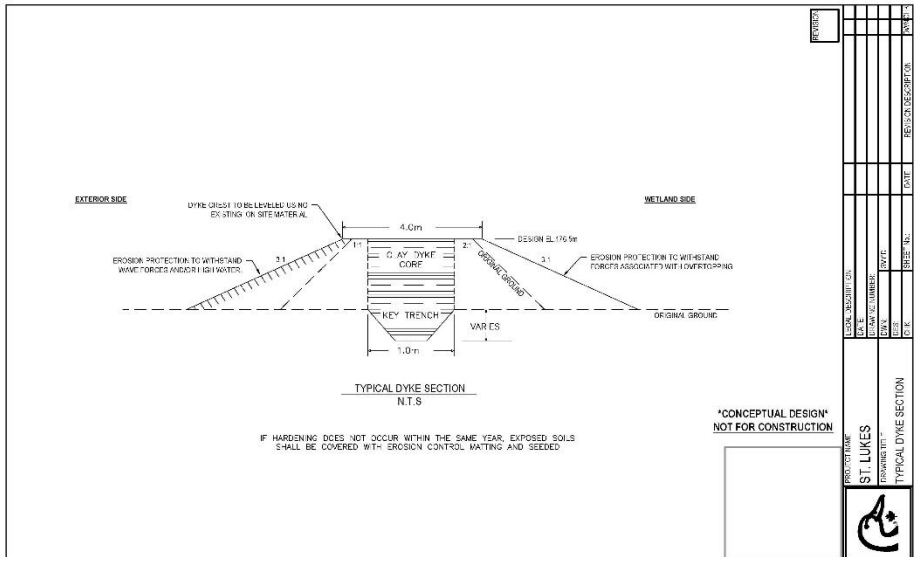
cpaterson@scrca.on.ca

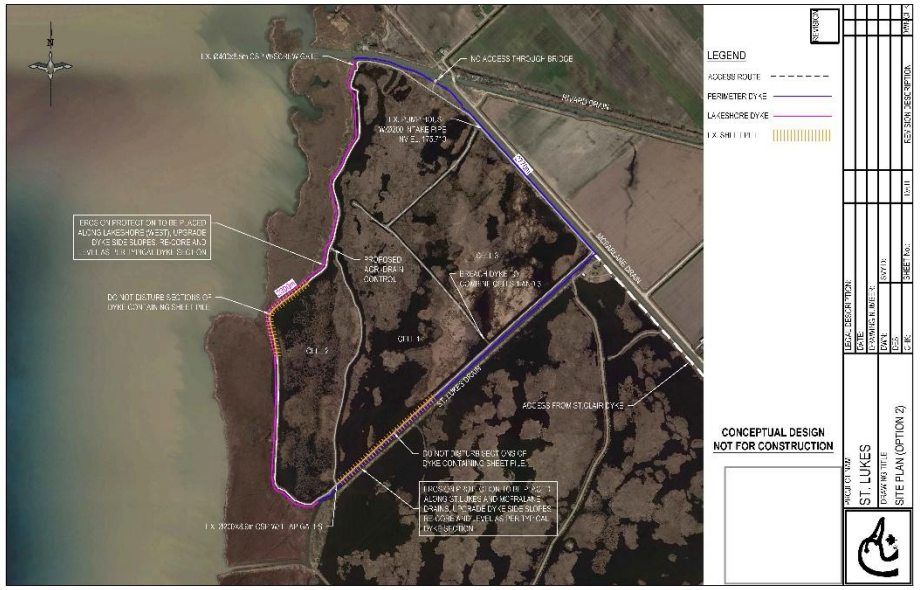
St. Clair Conservation

Improving Climate Resilience of St. Luke's Marsh

Ducks Unlimited Canada

Climate Exposure Mitigation and Response





Water Quality Regulation and Wetland Adaptive Capacity

percent cover and ratio of invasive to native species

Habitat Provision and Vegetation Response

Interspersion = Ratio of linear edge (m) of open water to vegetation

Ecological Condition and Biological Response

presence/abundance observations of area-sensitive breeding birds, frogs and toads

Restoring Wetlands in the lower Thames River and Lake St. Clair Floodplains

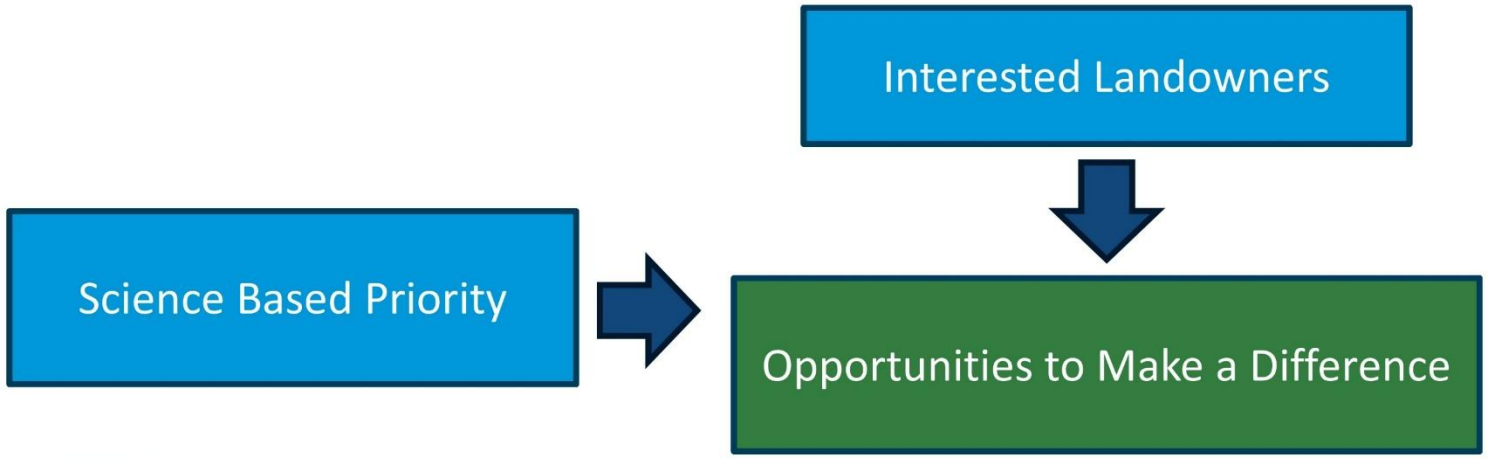
October 28, 2025

Sarah Rabideau, GIS Technician
Vicki McKay, Species At Risk Biologist
Mark Peacock, P. Eng. CAO / Secretary-Treasurer

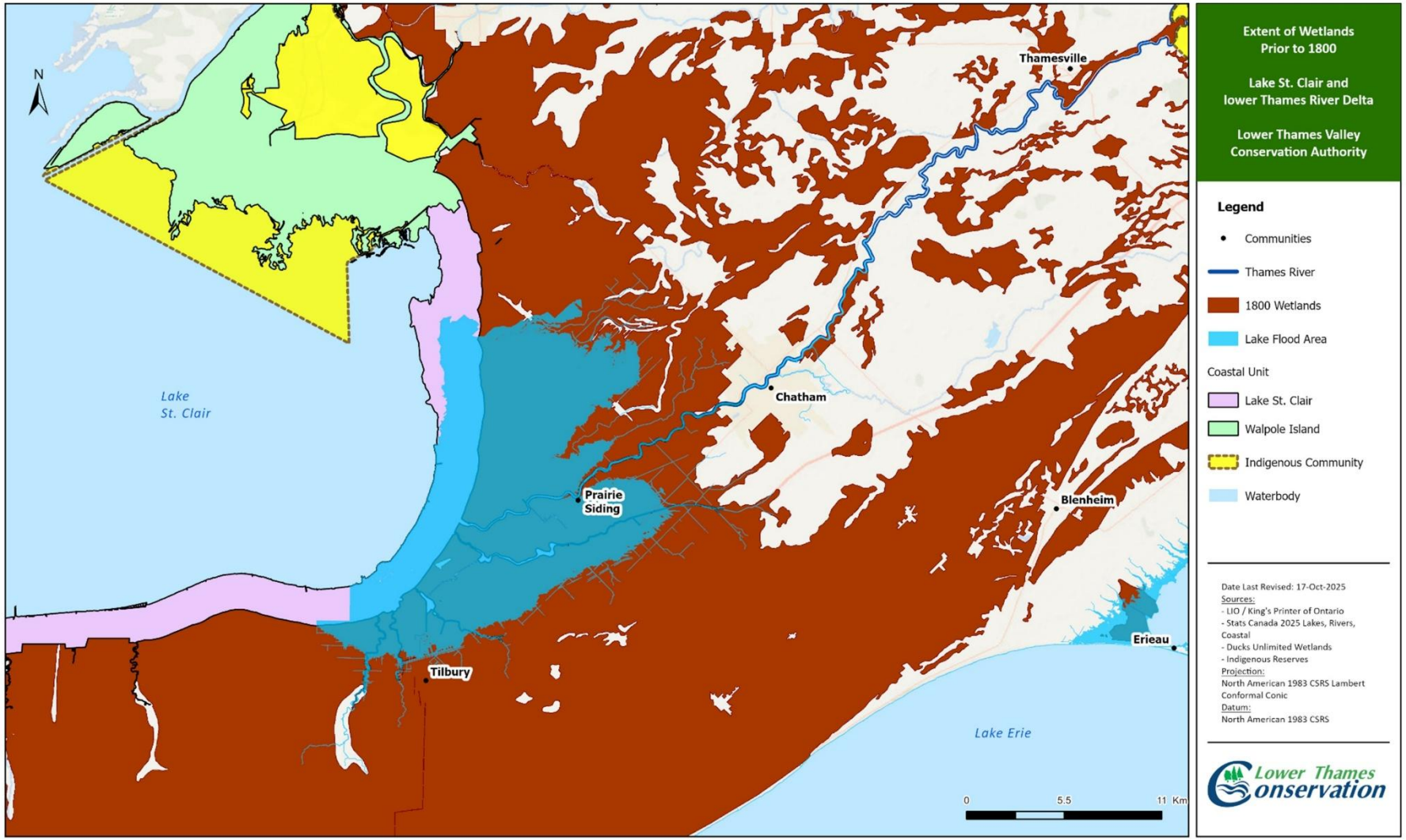
Lower Thames Conservation

Project Purpose

- Identify locations around Lake St. Clair and the lower Thames River that can be feasibly restored to wetland function, improving the ecology of Lake St. Clair.
- Work with surrounding community to develop a way forward to restore identified wetlands.



Lower Thames Conservation



Extent of Wetlands Prior to 1800

Lake St. Clair and lower Thames River Delta

Lower Thames Valley Conservation Authority

Legend

- Communities
- Thames River
- 1800 Wetlands
- Lake Flood Area

Coastal Unit

- Lake St. Clair
- Walpole Island
- Indigenous Community
- Waterbody

Date Last Revised: 17-Oct-2025

Sources:
- LIO / King's Printer of Ontario
- Stats Canada 2025 Lakes, Rivers, Coastal
- Ducks Unlimited Wetlands
- Indigenous Reserves

Projection:
North American 1983 CSRS Lambert Conformal Conic

Datum:
North American 1983 CSRS

Lower Thames Conservation

Lower Thames Conservation

Element 1: Communicate

Consultation/Communications Plan

- Communicate with all rights holders, stakeholders and landowners in priority areas
  - Lake St. Clair floodplain and lower Thames River delta
  - Communicate risks and benefits of wetland restoration
- Engage the above in wetland restoration
- Increase public appreciation of wetlands

Lower Thames Conservation

Element 2 – Meet with Landowners

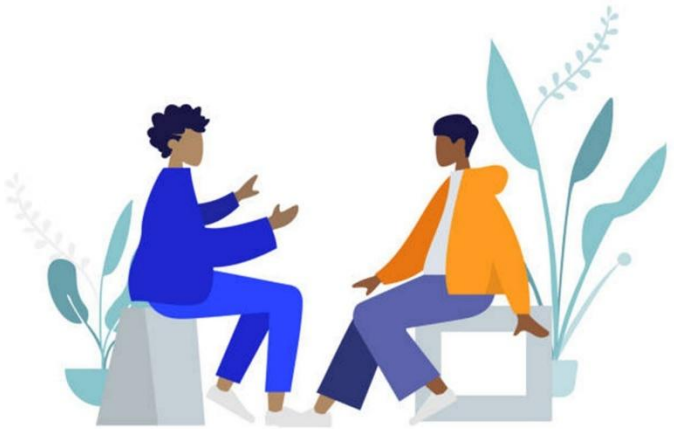
Landowner Contact Plan

- Contact existing wetland owners (e.g., hunt clubs) and landowners in priority areas within formerly inundated areas to determine interest in wetland restoration
- Consider wetland restoration on properties of interested landowners OR purchase properties from willing landowners for re-creation of climate resilient wetlands

Lower Thames Conservation

Element 3 – Develop partnerships

Develop Partnerships:



i. Indigenous communities
ii. Landowners
iii. Municipalities
iv. Agencies
v. General public
vi. Interest groups (NGOs, hunt clubs, nature groups etc.)
vii. International partners regarding implementation of the Lake St. Clair Lake Wide Management Plan.
    - Build into larger, lake-based restoration plan

Lower Thames Conservation

Element 4 – Help Guide the Way Forward

Moving Restoration Forward

- Identify priority areas for restoration based on scientific and socio-economic information, including landowner cooperation
- Recommend potential wetland restoration concepts for each priority property selected for future public consultation

Lower Thames Conservation

Thank You

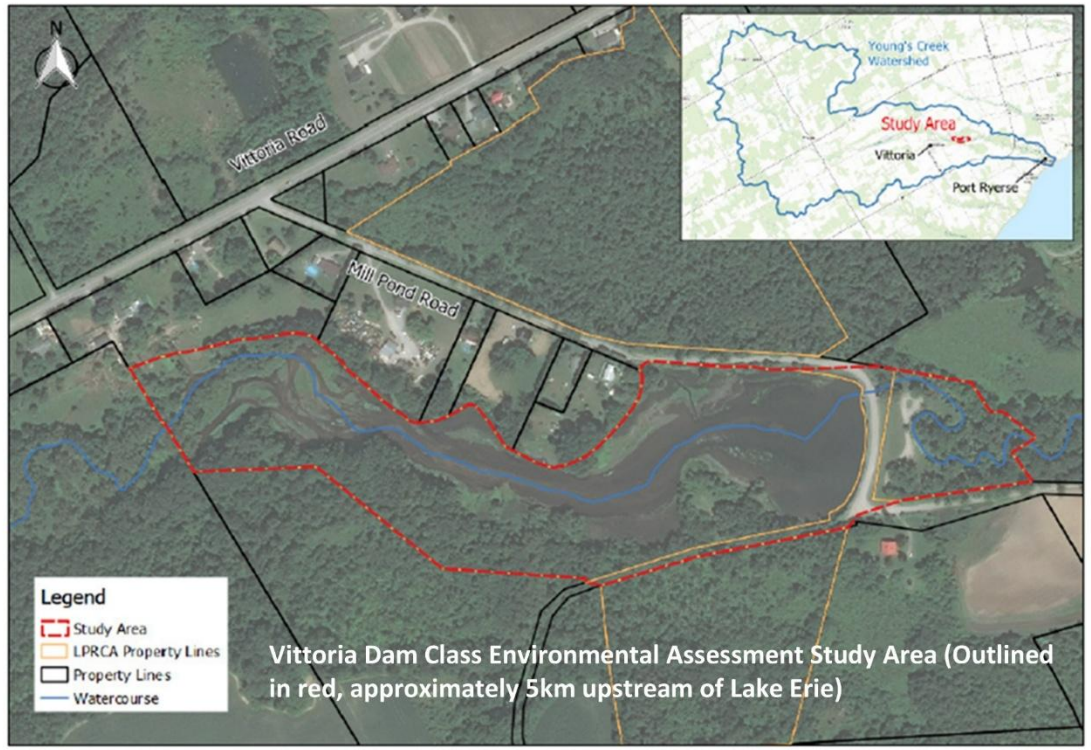
Lower Thames Valley Conservation Authority
100 Thames Street
Chatham, ON N7L 2Y8
Tel: 519-354-7310

GIS Technician, Sarah Rabideau (Ext. 244)
sarah.rabideau@ltvca.ca
Chief Administrative Officer / Secretary-Treasurer
Mark Peacock (Ext. 224) mark.peacock@ltvca.ca
Species at Risk Biologist, Vicki McKay – C.M. Wilson Learning Centre - Tel: 519-355-0024 – vicki.mckay@ltvca.ca

Lower Thames Conservation

VITTORIA DAM DECOMMISSIONING

RECONNECTING YOUNG'S CREEK



Vittoria Dam Class Environmental Assessment Study Area (Outlined in red, approximately 5km upstream of Lake Erie)

Restoring Connectivity and Resilience in the Great Lakes Basin.

The project will restore Young's Creek by implementing the Preferred Alternative identified through the 2024 Class EA.

It will reconnect **30 km of tributary to Lake Erie**, restoring natural sediment transport and improving nearshore water quality.

Objective & Approach

Reconnecting Young's Creek to Lake Erie

Preferred Alternative: Floodplain and Channel Restoration Layout

Objectives

- Restore natural flow and sediment continuity (~1.3 km of restored channel)
- Stabilize 44,000 m^3 legacy sediment in place
- Re-establish 11 acres riparian floodplain with native vegetation
- Enhance cold-water fish habitat and control invasive phragmites
- Reduce risk to life and property associated with the aging dam structure

Approach

- Phased reservoir drawdown using sluice-gate and stop-log operations
- Engineered sediment management and monitoring during drawdown
- Adaptive stabilization and sediment control measures throughout drawdown
- Vegetation restoration and invasive-species control during site naturalization

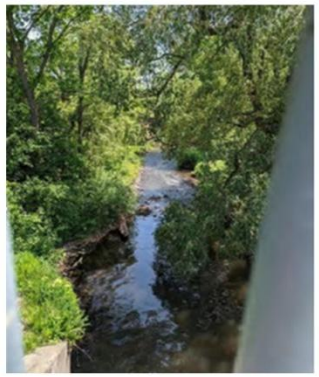
Progress To Date

Vittoria Dam Decommissioning – Year 1 Highlights

Key Milestones (Year 1)

- **Finalized** Contribution Agreement with the CWA
- **Completed** key planning documents – Workplan, Monitoring Plan, and Communication Schedule
- **Issued** RFP to retain consultant for the Vittoria Dam EA Implementation Design
- **Preparing** to re-establish the Community Liaison Committee and initiated development of a public project webpage (planned for Year 1 Q3)
- **Initiated** baseline environmental monitoring – sediment, groundwater, and vegetation
- **Planned** participation in the CWA Coastal Symposium (December 2026) to share project progress and lessons learned

Water level within reservoir

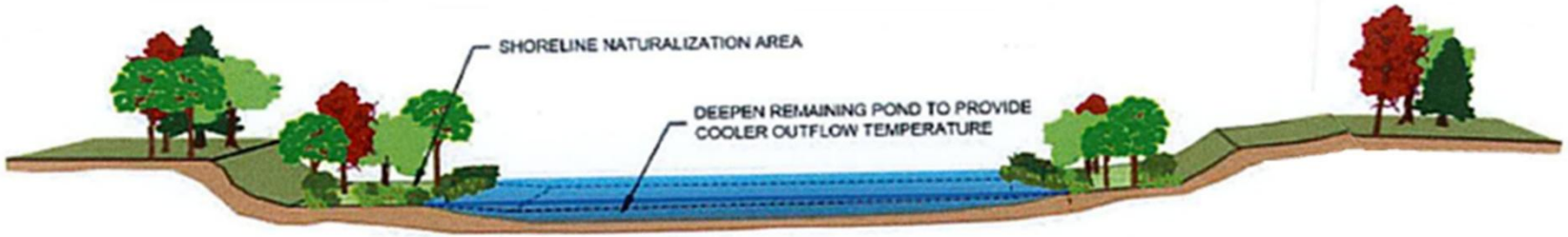


Looking east from top of dam

Facing us at dam outlet

Anticipated Outcomes

Building Ecological & Community Resilience



Preferred Alternative (Alt. 5): Conceptual Cross-Section of Restored Floodplain and Channel

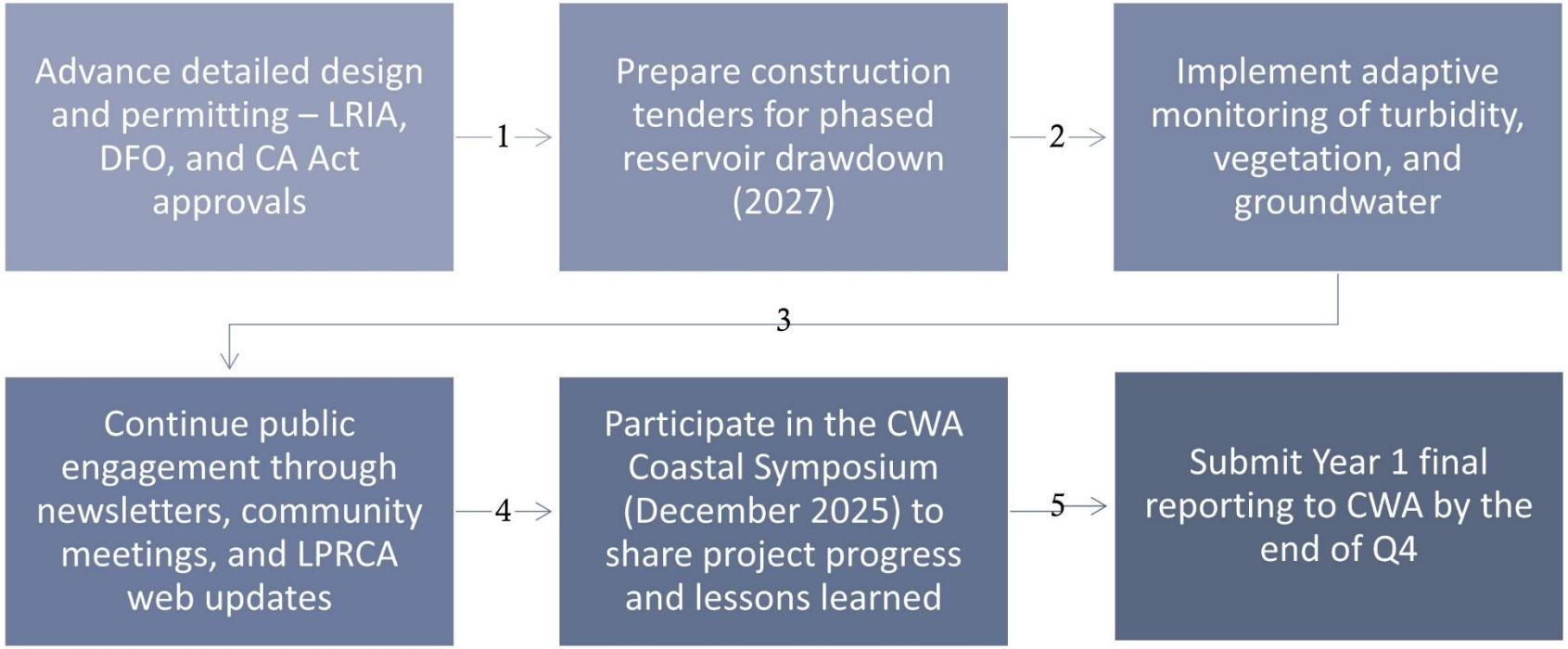
Anticipated Outcomes

- Safe removal of dam structures and reservoir drawdown by 2028
- Restoration and stabilization of riparian floodplain habitat
- Improved water quality along downstream reach
- Enhanced resilience to high-flow events and reduced downstream flood risk
- Strengthened collaboration among CWA, MNRF, DFO, Norfolk County, and OFAH

Together, these outcomes will reconnect Young's Creek to Lake Erie, strengthen habitat resilience, and create a model for future coastal restoration projects across the Great Lakes.

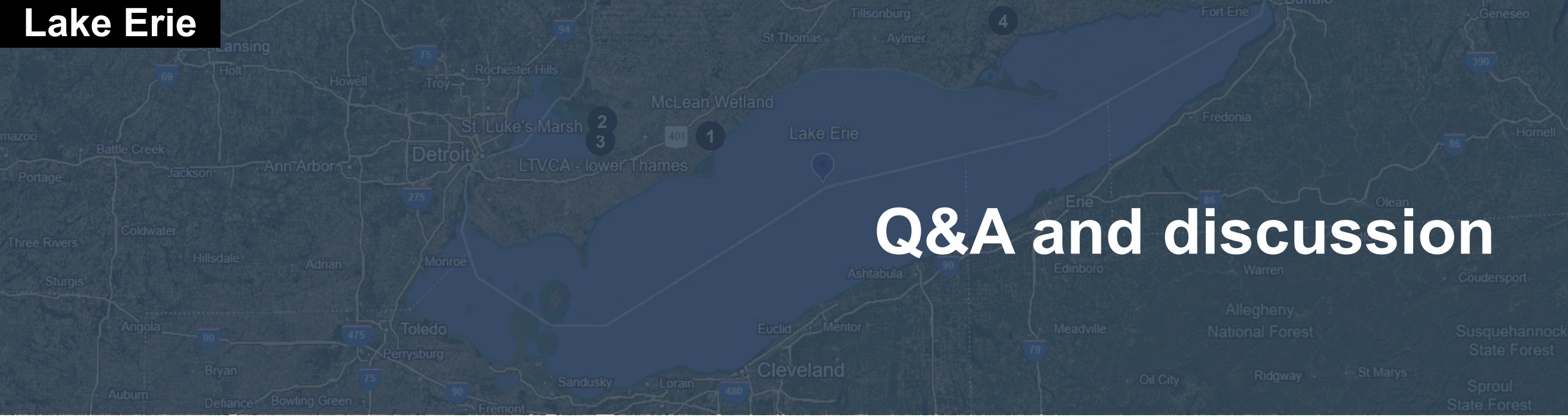
Collaboration & Next Steps

From Planning to Implementation

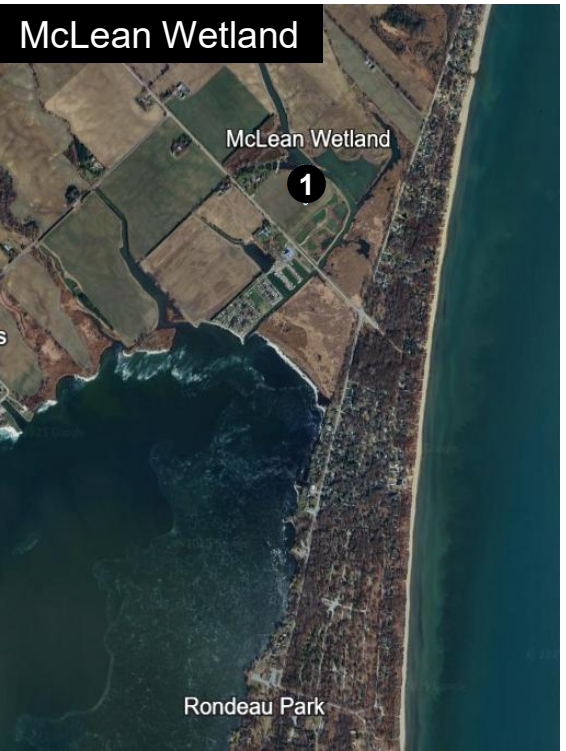


Together with our partners, we're transforming planning into on-the-ground action — restoring Young's Creek's natural flow, resilience, and connectivity to Lake Erie.

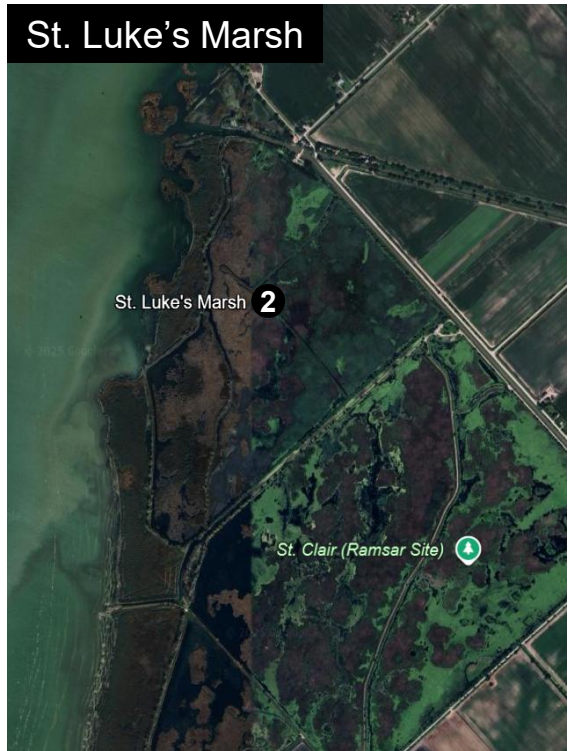
Lake Erie



Q&A and discussion



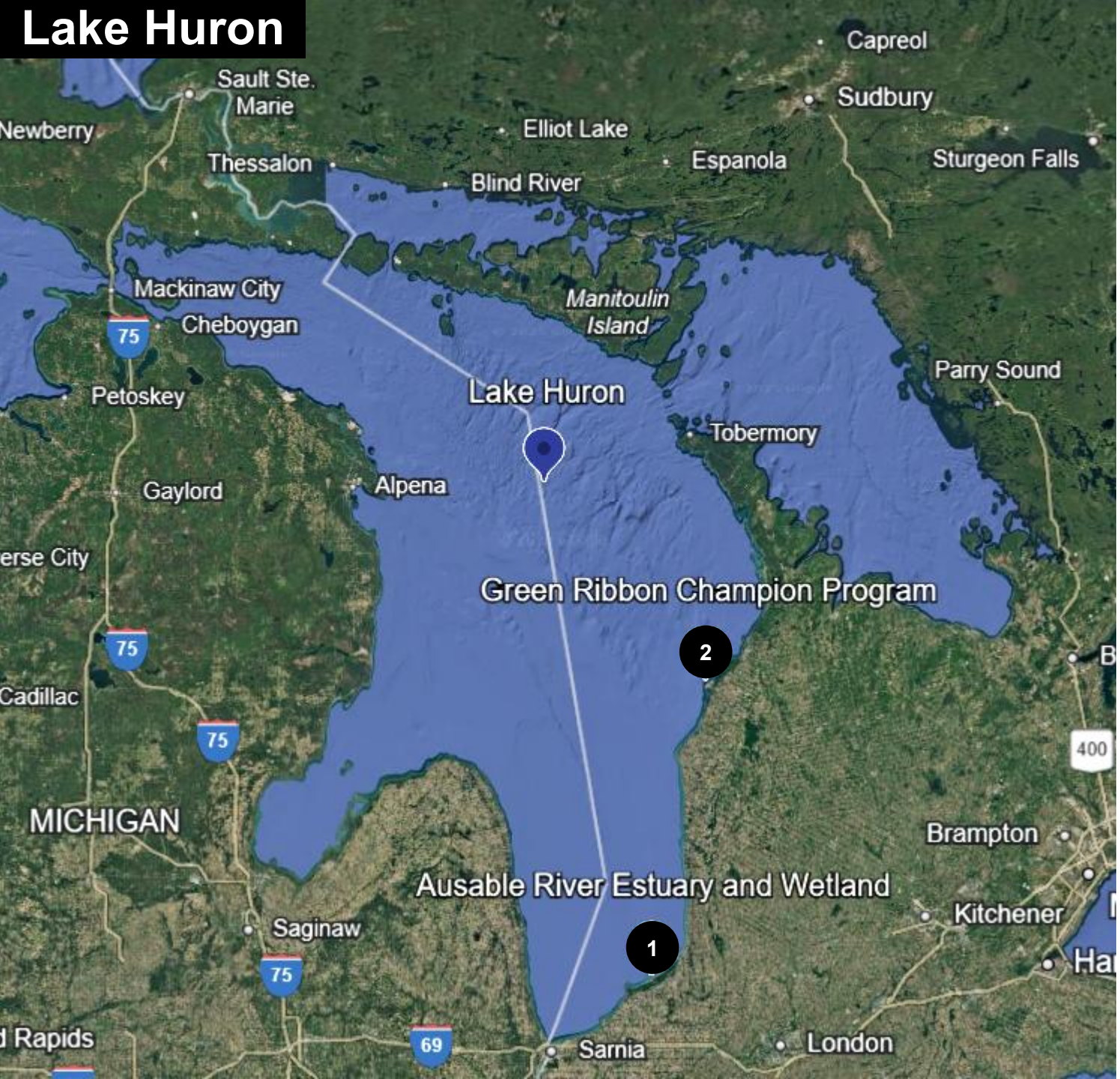
McLean Wetland



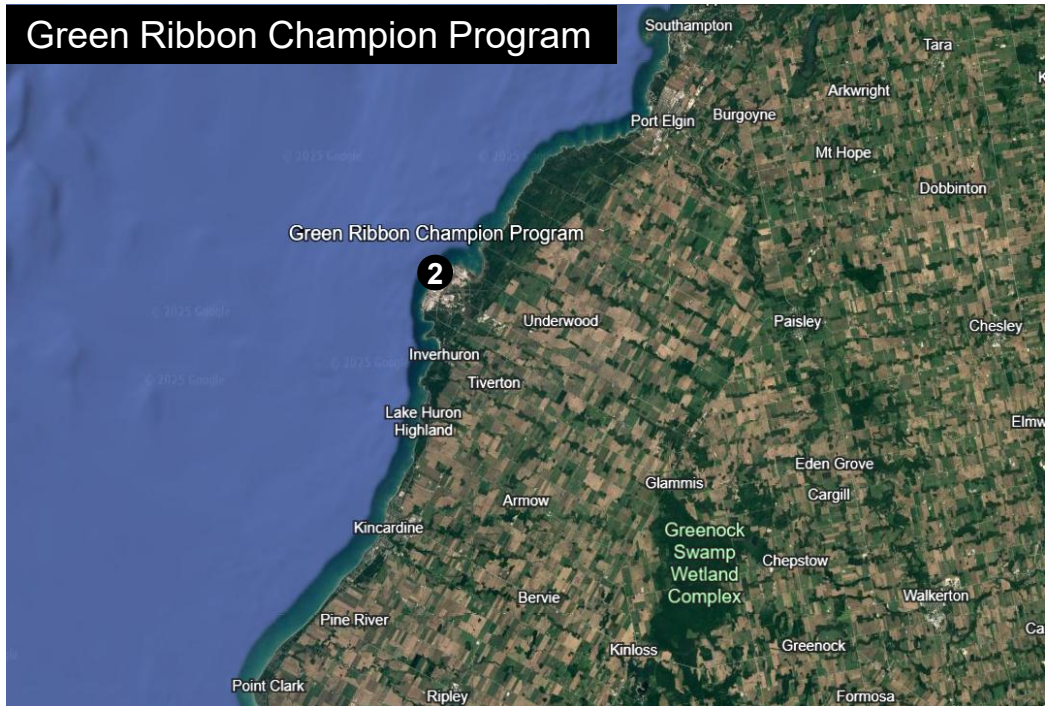
St. Luke’s Marsh

Lower Thames and St. Clair floodplains

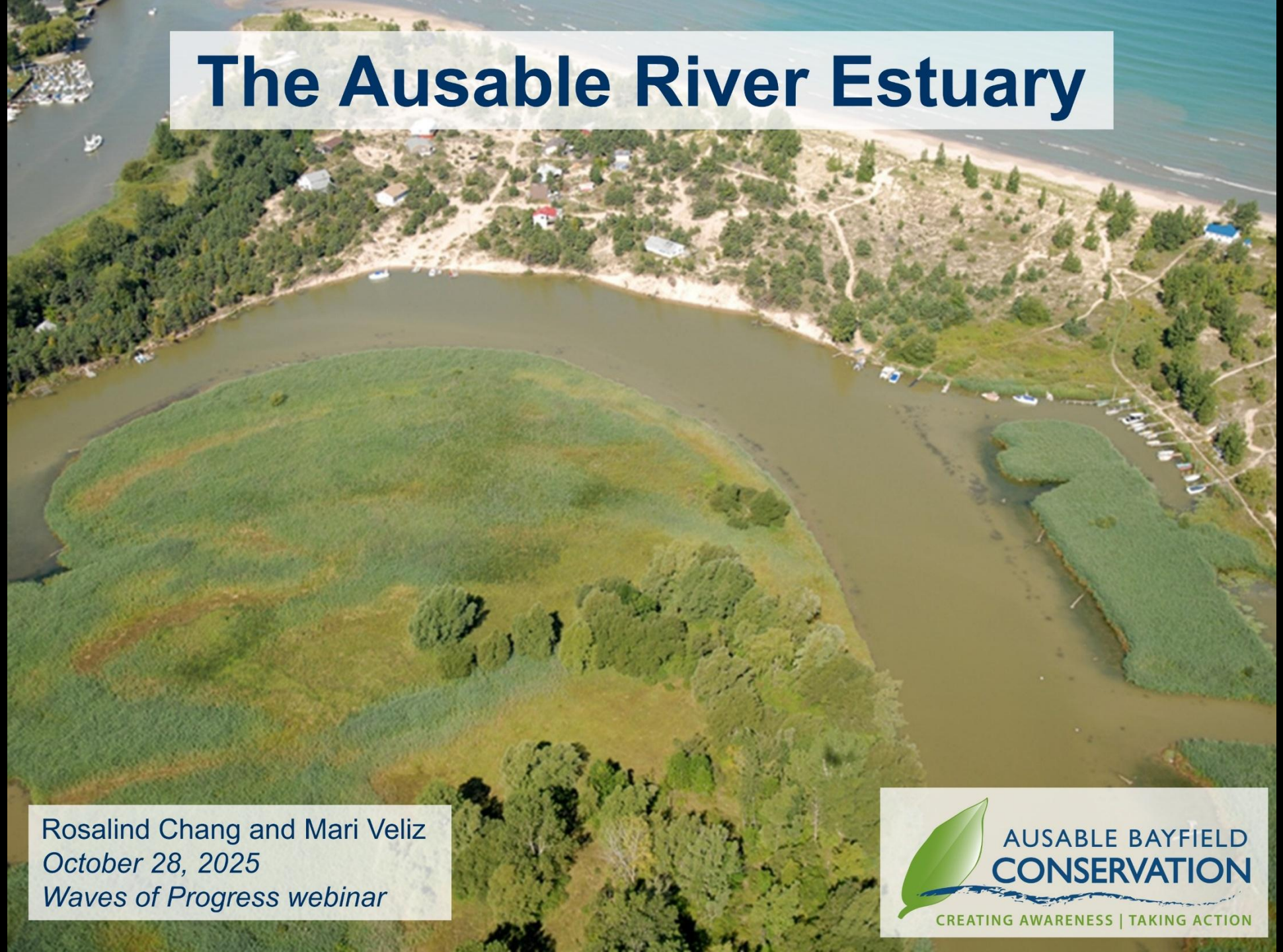
Vittoria Dam


Lake Huron
Capreol
Sault Ste. Marie
Sudbury
Newberry
Elliot Lake
Thessalon
Espanola
Sturgeon Falls
Blind River
Mackinaw City
Manitoulin Island
Cheboygan
75
Parry Sound
Petoskey
Lake Huron
Tobermory
Alpena
Gaylord
Green Ribbon Champion Program
2
75
Cadillac
75
400
MICHIGAN
Brampton
Ausable River Estuary and Wetland
Saginaw
Kitchener
1
75
69
Sarnia
London


Ausable River Estuary and Wetland
Port Franks
Ausable River Estuary and Wetland
1


Green Ribbon Champion Program
Southampton
Tara
Arkwright
Port Elgin
Burgoyne
Mt Hope
Dobbinton
Green Ribbon Champion Program
2
Underwood
Paisley
Chesley
Inverhuron
Tiverton
Lake Huron Highland
Eden Grove
Glammis
Cargill
Armow
Kincardine
Greenock Swamp Wetland Complex
Chepstow
Bervie
Walkerton
Pine River
Kinloss
Greenock
Point Clark
Ripley
Formosa

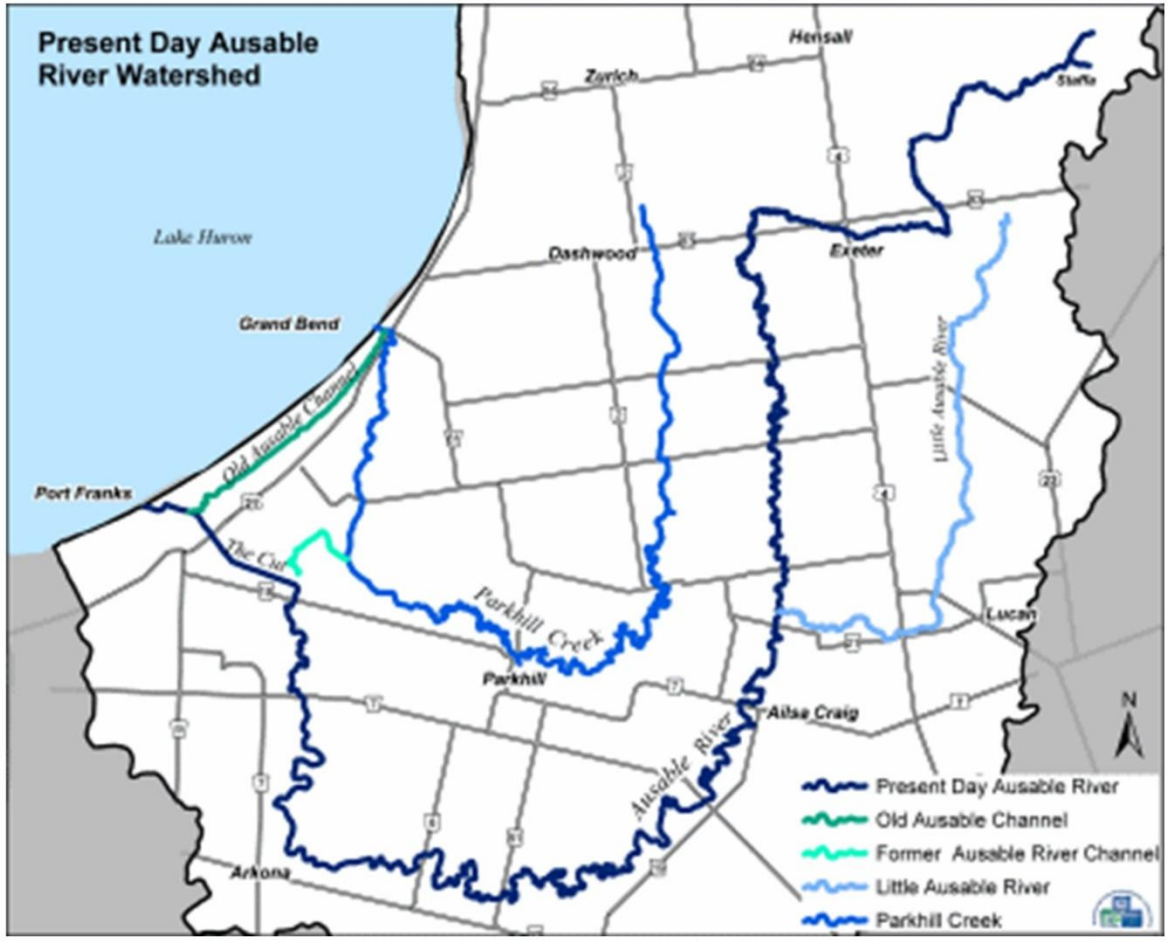
The Ausable River Estuary

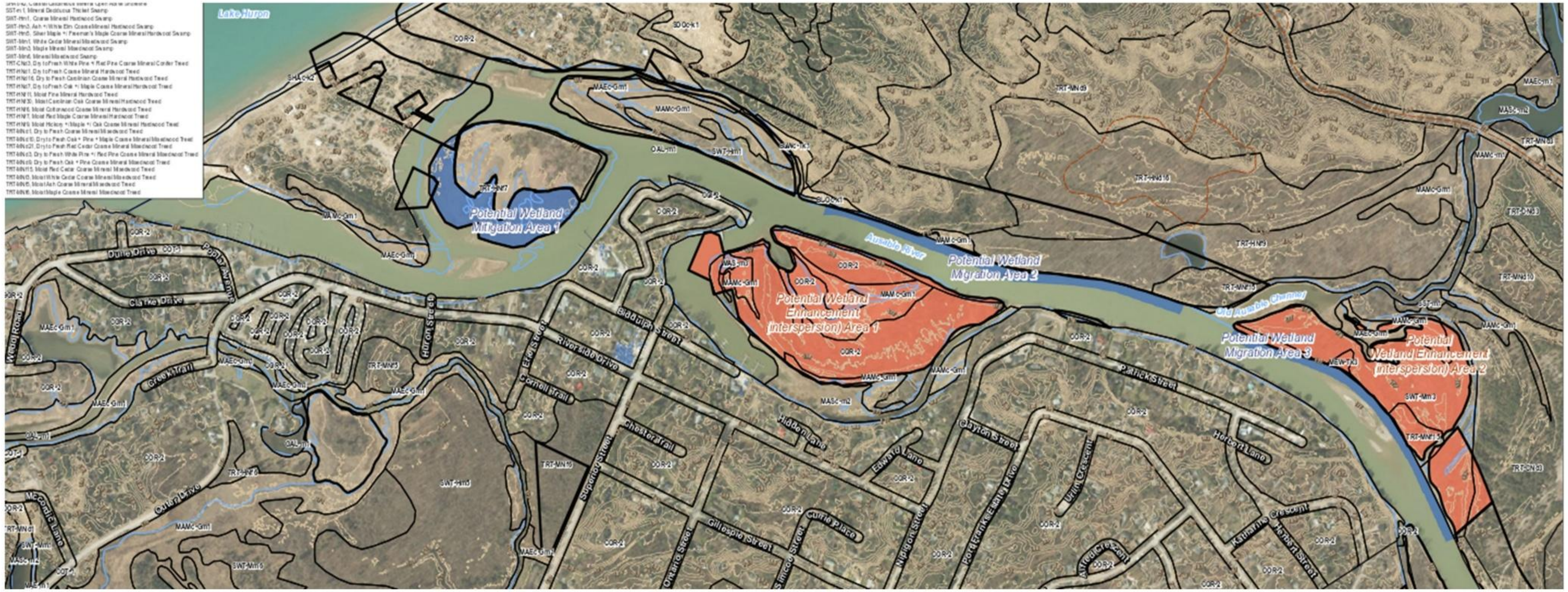


Rosalind Chang and Mari Veliz
October 28, 2025
Waves of Progress webinar

AUSABLE BAYFIELD CONSERVATION
CREATING AWARENESS | TAKING ACTION

How the Ausable River lost its “Grand Bend”?




Lake Huron
Potential Wetland Migration Area 1
Potential Wetland Enhancement (interspersion) Area 1
Ausable River
Potential Wetland Migration Area 2
Old Ausable Channel
Potential Wetland Migration Area 3
Potential Wetland Enhancement (interspersion) Area 2
Riverside Drive
Clarke Drive
Huron Street
Patrick Street

Canada Water Agency

Agence de l'eau du Canada

GEI Consultants

AUSABLE BAYFIELD CONSERVATION

CREATING AWARENESS | TAKING ACTION

Green Ribbon Champion Program (GRC)

Lake Huron Coastal Centre

Evan Skinn- Restoration Program Coordinator

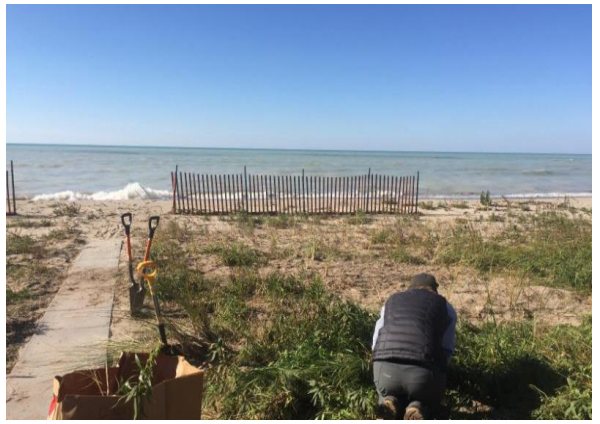
LAKE HURON COASTAL CENTRE

What Is GRC?

Beach dune restoration program to enhance and protect the Lake Huron shoreline.

Program Goals and Details

Builds Awareness



Engages community

Builds partnerships

Community and nature-based solutions

Enhances resilient shorelines

Project Area

Key Project Activities

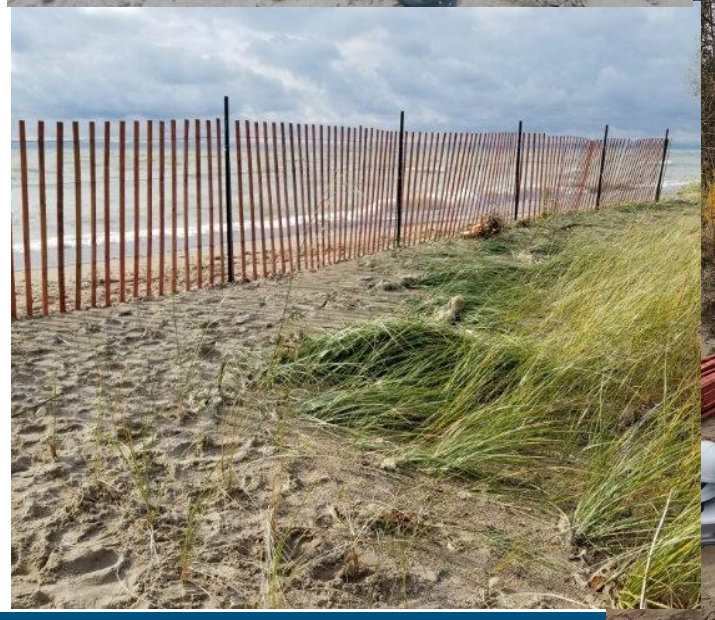
LAKE HURON COASTAL CENTRE

Outcomes

Community Education- workshops & events

Empowering Communities

Sand Dune Restoration Activities



Contact:

Email: coastalcentre@lakehuron.ca

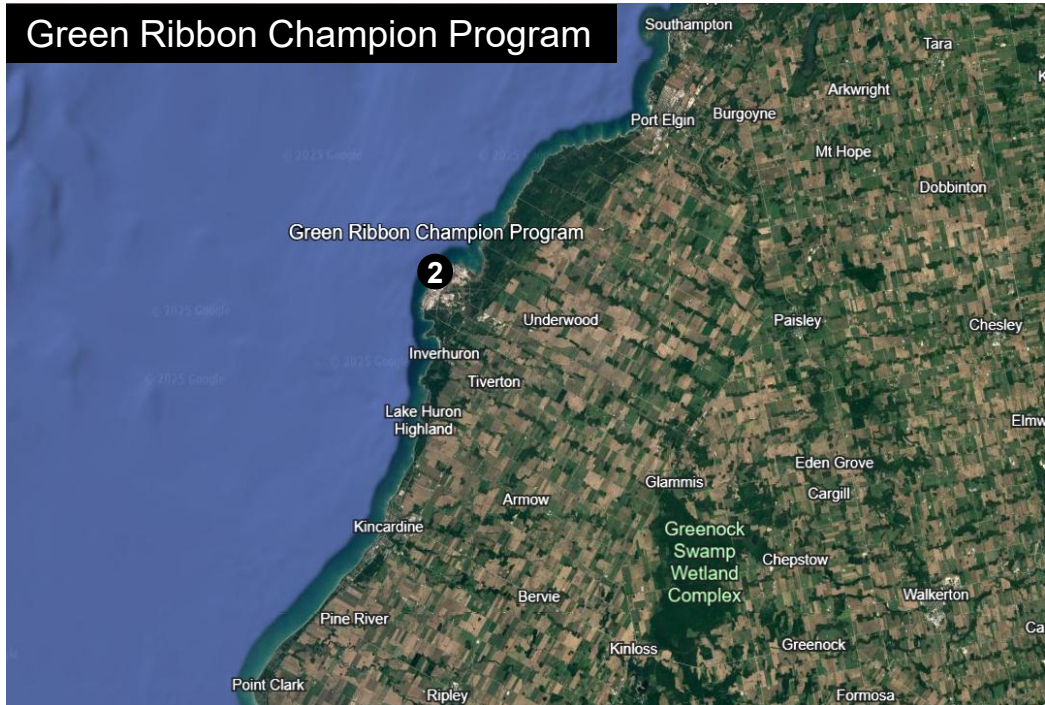
Media: @costalcentre

Lake Huron

Q&A and discussion

Ausable River Estuary and Wetland

Green Ribbon Champion Program



Looking Ahead: 2025 Symposium

2024 Symposium Highlights

- Held on November 20, 2024
- Over 80 people attended the full-day symposium
- Hosted by the Canada Water Agency

- **Next: Wednesday, December 10**

2024 Symposium – Projects Showcase

Coastal Wetland Projects

1. Validating the Use of a Resilience Index to Classify Ecological Resilience of Coastal Marshes in Eastern and Northern Georgian Bay to Climate-induced Extremes in Water-level Fluctuations
   McMaster University
2. Hillman Marsh Wetland Restoration and Climate Adaptation Plan
   Essex Region Conservation Authority
3. Improving Climate Resilience of Lynde Shores Coastal Wetlands
   Central Lake Ontario Conservation Authority

Nearshore Projects

4. Southern Lake Huron Coastal Action Plan: Restoring Natural Sediment Transport Pathways
   Maitland Valley Conservation Authority
5. Coastal Resilience Action Plan for the Long Point Littoral Cell
   Long Point World Biosphere Reserve
6. Leveraging Big Data to Connect Watershed Plans to Nearshore Lake Health: Rouge River Case Study
   Toronto and Region Conservation Authority
7. Ajax Nearshore Restoration and Coastal Stabilization Project
   Toronto and Region Conservation Authority
8. Assessing Nature-based Solutions to Restore Coastal Processes around the Graham Creek Jetties and Revitalization of Bond Head Park Beach
   The Corporation of the Municipality of Clarington
9. Developing and Evaluating Nature-based Solutions to Protect and Stabilize Coastlines in the Upper St. Lawrence River
   St. Lawrence River Institute of Environmental Sciences

2025 Symposium Objectives

FOSTER LEARNING through case studies and sharing expertise and information regarding the implementation of projects that enhance water quality, ecosystem health, and the resilience of coastal areas

FOSTER COLLABORATION through open discussions and presentations on coastal resilience that share best adaptation principles and restoration approaches

IDENTIFY gaps and opportunities in applied science and modelling

SHOWCASE effective projects for advancing the state of knowledge in coastal systems

Panel and Open Discussions

drinking water shoreline
diversity habitat freshwater
clean beautiful swimming
coastal wetlands vastness beauty
wetlands recreation
nature wildlife biodiversity
water beaches fish

Thank you for joining today's session!

We hope to see you at the Symposium in Burlington on December 10!

Georgian Bay, Lake Huron | Lion's Head, Ontario | Credit: Trevor Bobyk

For questions, please contact Sharon.Lam@trca.ca

Canada Water Agency | Agence de l'eau du Canada