Natural Resources Canada (NRCAN) Funding for Coastal Resilience Plans

Essex County Council – December 6, 2023

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Essex Region Conservation Authority

Climate-Resilient Coastal Communities (CRCC) Program

- Federal Grant through the Climate Change Impacts and Adaptation Division of Natural Resources Canada (NRCAN)
- NRCAN through the CRCC Program will fund up to 20-25 projects, up to a total cost of $25-$30M for projects spanning April 1, 2024, with projects concluding on December 31, 2027.
- CRCC Funding Objectives:
  - *"To enable communities **to work collaboratively** at a **regional scale** to overcome barriers and develop coordinated solutions to climate change risks (i.e., changes in levels, coastal erosion, storm surge, flooding) in coastal regions."*
  - *"To advance systems-based approaches that involve **governments, Indigenous rights-holders, communities and organizations, businesses, academia, and other stakeholders** to address key climate change risks"*
- Projects only require 25% local matching funds, with **NRCAN funding up to 75% of a Project's Costs**: (i.e. 3:1 dollar ratio)
- **Project Costs to be no lower than $300K.**

25 Regional Scale Projects, divided across Canada's Marine Coasts:

1. Arctic
2. Atlantic
3. Pacific
4. Great Lakes-St. Lawrence Region

Eligibility

- Academic Institutions
- Non-Governmental Organizations
- Industry, research, and professional associations
- Companies and businesses
- Indigenous communities or governments
- Community, regional, and national indigenous organizations
- Provincial, territorial, regional, and municipal governments and their departments and agencies

Climate-Resilient Coastal Communities Program Timeline

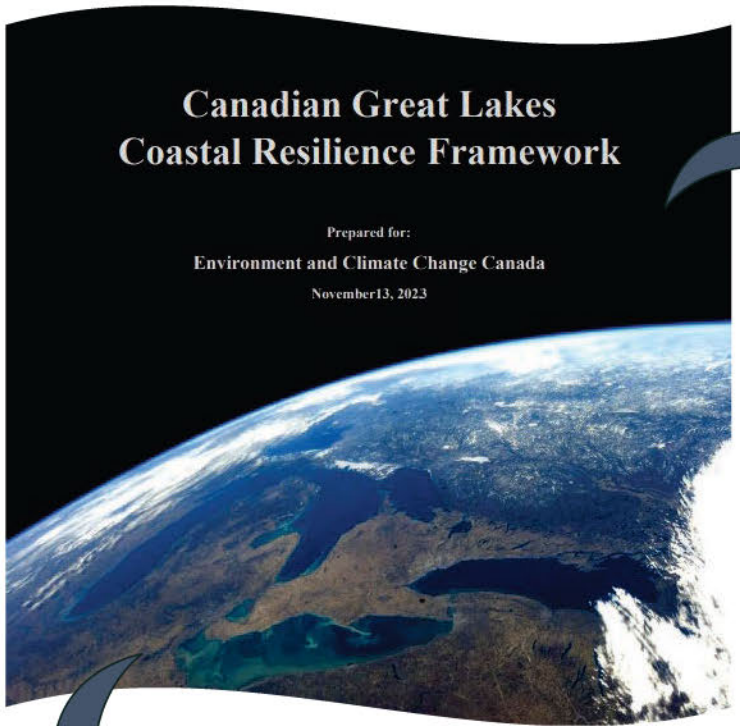
Local Objectives:

To obtain funding for 2 multi-stakeholder, regional, studies;

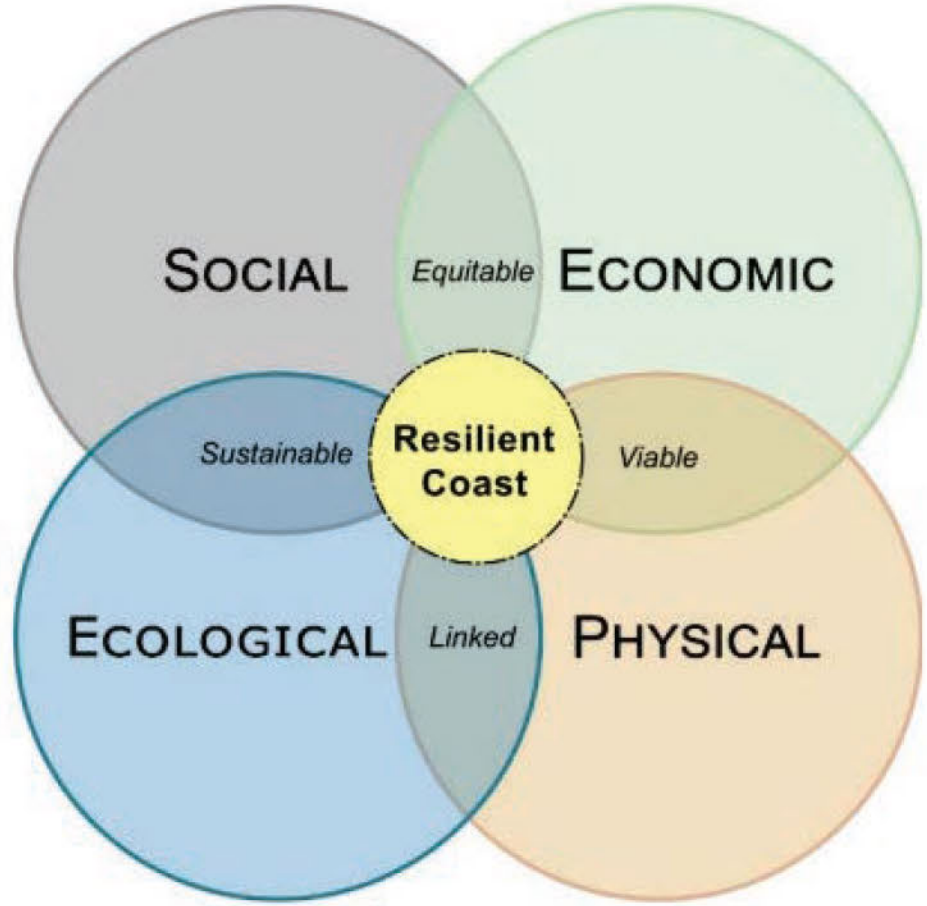
1) Lake St. Clair Resilience Plan (North Shore)
2) Lake Erie Resilience Plan (South Shore)

Potential to bring $1M to $2M to the Region to continue addressing local challenges

Lake Resilience Plans: ECCC Framework



Resilience Framework – building resilience for coastal communities and ecosystems to climate-induced changes (increased water level variability, increased intensity of storms, reduction in lake ice cover), species loss, invasive species, development pressure, new and emerging threats.



Graphic Source: Canadian Great Lakes Coastal Resilience Framework, ECCC (2023)

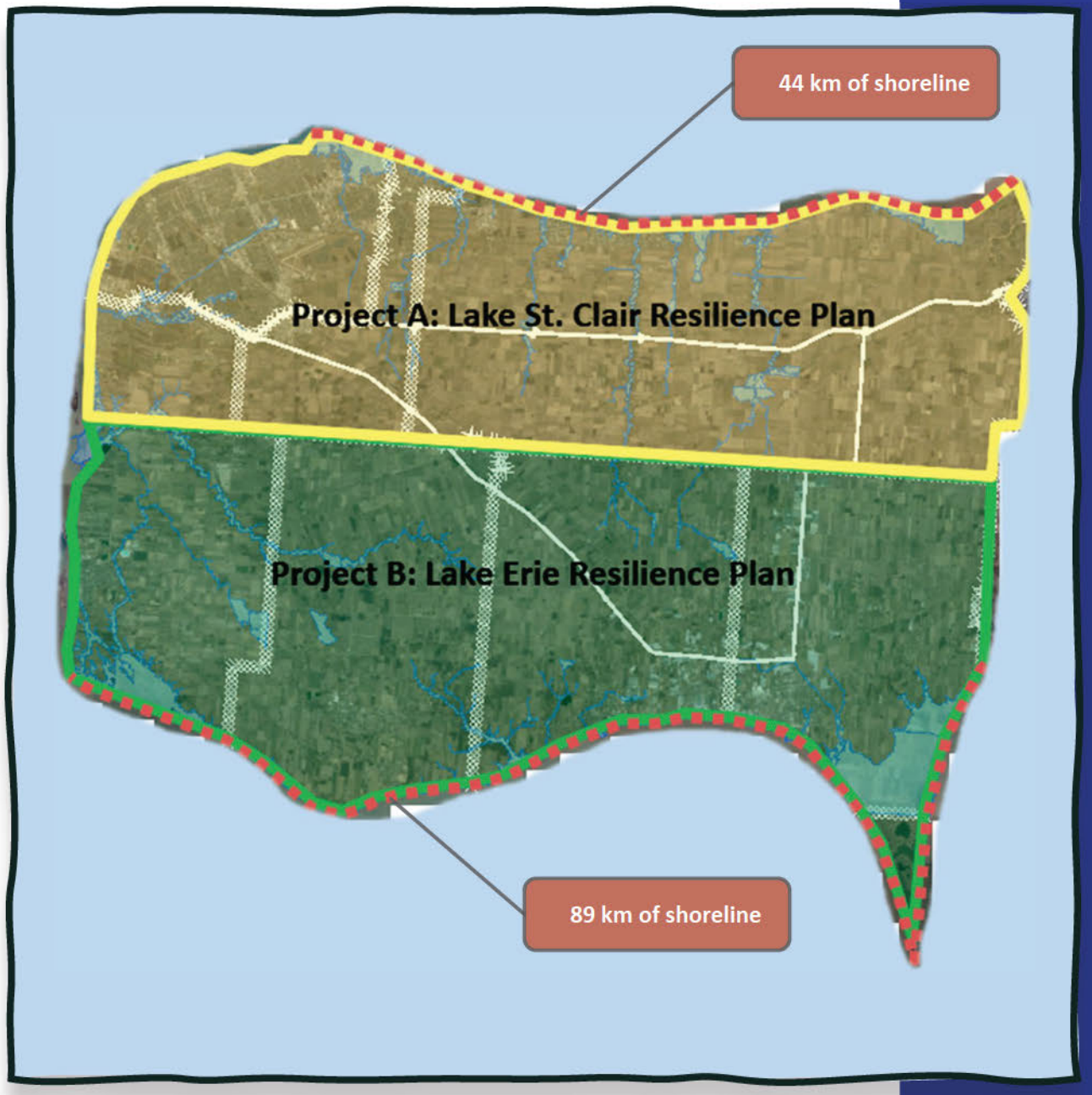
[Coastal] Resilience is the capacity of social, economic, ecological, and physical systems in a coastal areas to cope with a hazardous event, trend, or disturbance, responding and reorganizing in ways that maintain their essential function, identify, and structure, while also building capacity for learning, innovative and equitable adaptation, and transformation.

Project Geography

Source: Adapted from the Canadian Great Lakes Coastal Resilience Framework (ECCC, 2023)

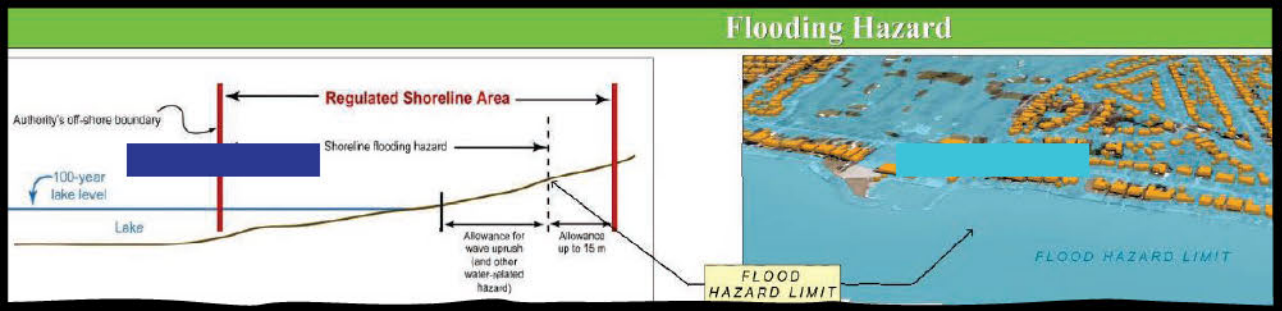
At the regional scale, littoral cells represent an innovative, systems-based approach to assessing and addressing complex coastal challenges. Much like the watershed concept, which defines the boundary for water delivery and flow in local tributaries, a littoral cell defines all sources of sand and gravel, transport pathways, and depositional areas crucial to maintaining coastal landforms such as beaches and barrier beaches. These processes and landforms are collectively known as geodiversity (Crofts et al, 2020) and protecting them is referred to as geoconservation. Linking

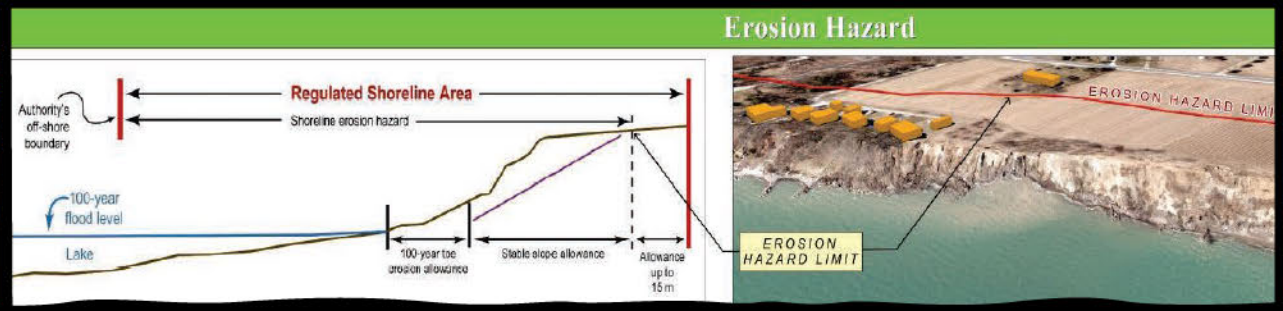
Source: Canadian Great Lakes Coastal Resilience Framework (ECCC, 2023)



General Project Objectives

1. Work collaboratively through Committees and complete additional public engagement throughout the study
2. Review and leverage previous background materials and technical studies
3. Complete vulnerability and risk assessments for public & private infrastructure, and ecological assets (coastal ecosystems)
4. Policy recommendations for long-term land use planning and existing development, and emergency response
5. Review sediment movements and challenges (coastal structures and harbours) and optimize sediment bypassing to downdrift beaches where possible.
6. Develop adaptation approaches to increase resilience of public infrastructure (e.g. county and municipal roads) to coastal hazards and climate change
7. Implement pilot adaptation projects to increase coastal resilience

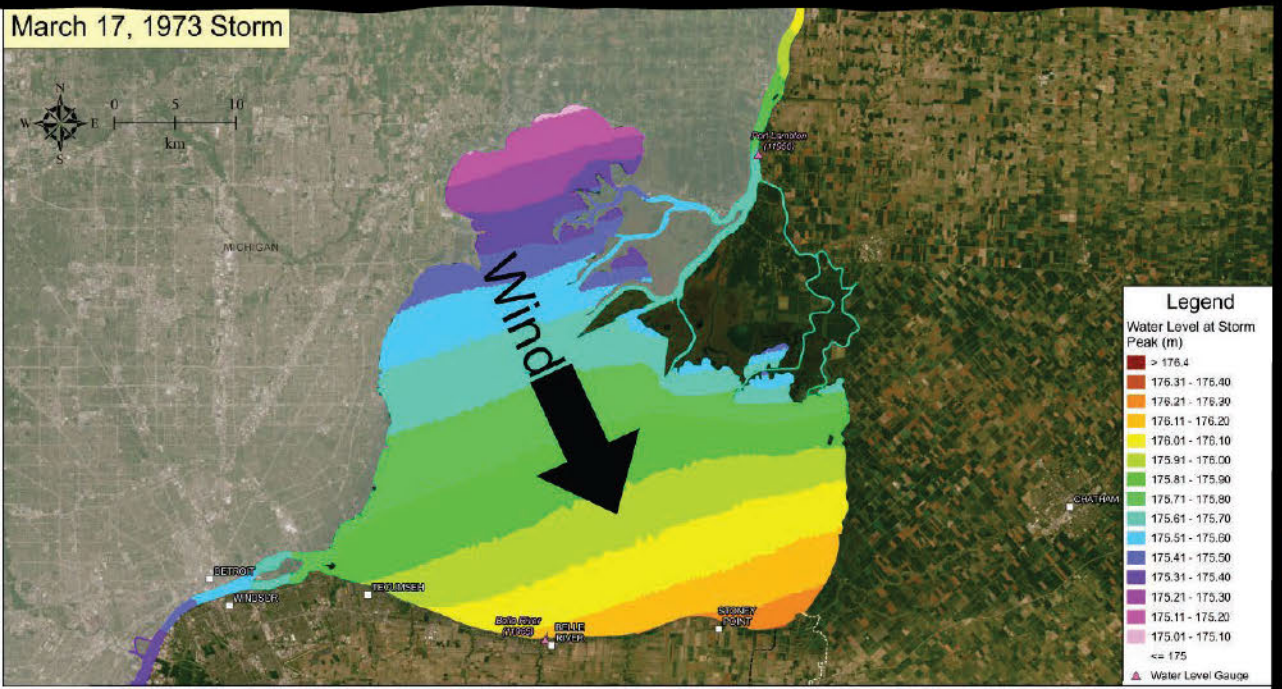


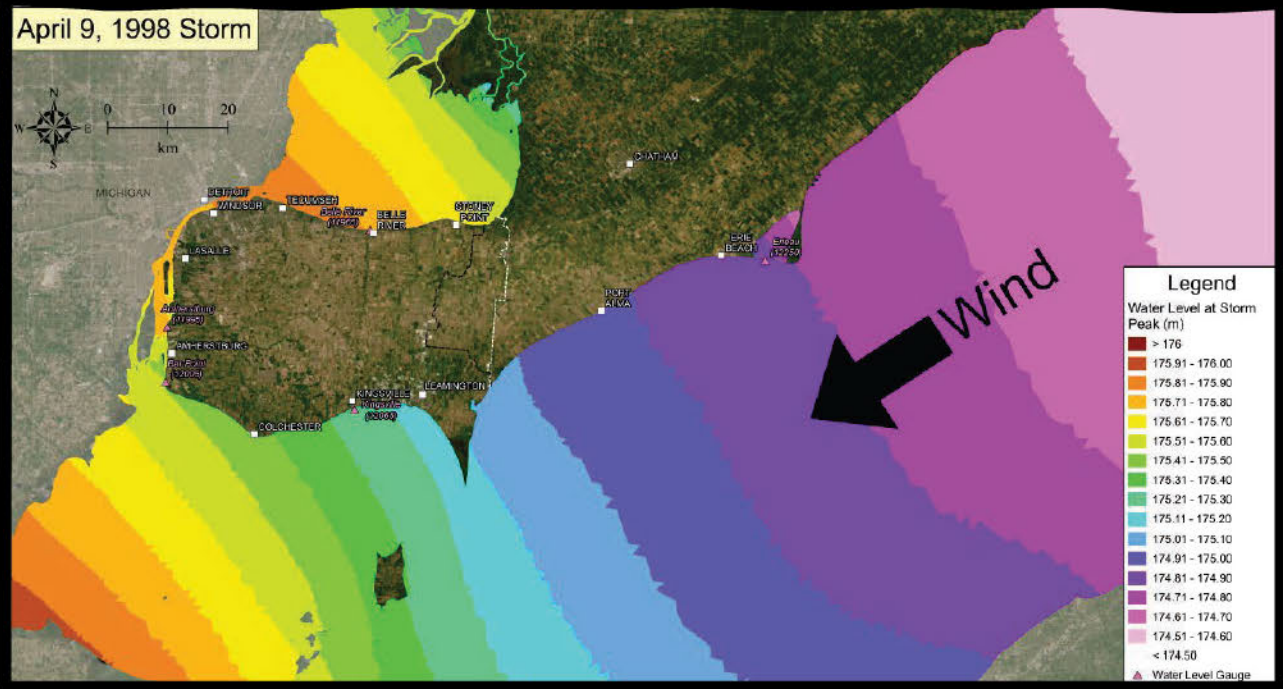


County/ERCA Coastal Hazard Mapping: Flood/Erosion Hazard Limits (Digitization)

Leverage Existing Work

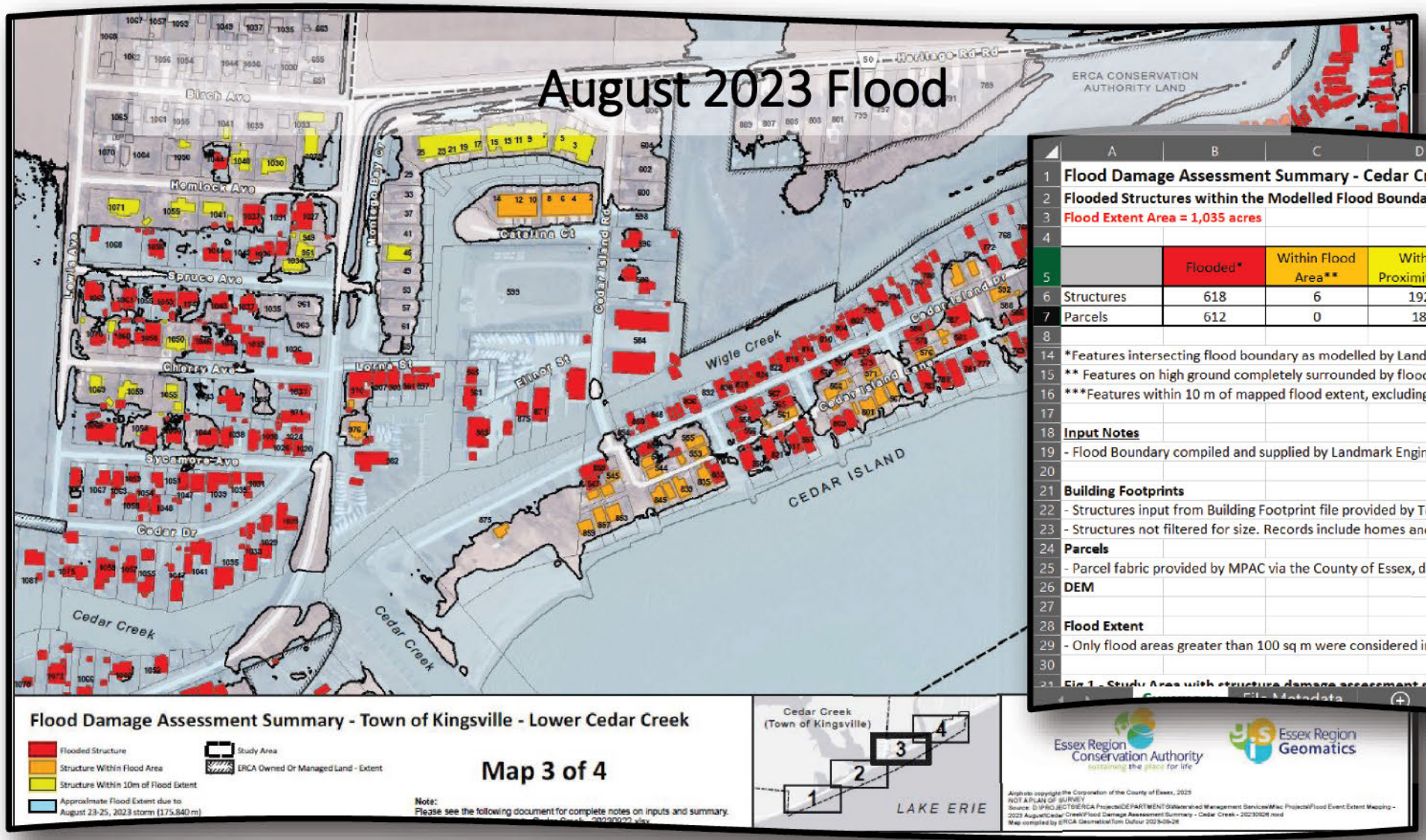
County/ERCA Shoreline Hazard Mapping: Lake Surge Model






Leveraging Existing Work:
Approximate Flood Extents: Max. Observed (Aug. 2023)
183.50m
187.86m
175.84m
175.84m
175.84m
175.84m
Cedar Creek & Wigle Creek
Pleasant Valley
Arner Tlin
Cedar Creek Provincial Park
Kingsville Golf and Country Club
Kingsville
Greenhill Cemetery
Main S
County Road 20 E
East Harrow
Cedar Creek Conservation Area
County Road 20 W
Cedar Creek
New California
Linden Beach
Heritage Rd
Cedarhurst Park
Cedar Beach
Heritage Rd
Wigle/Cedar Creek Flood Boundary
1:100 yr Flood Line
WQ Level Logger
Staked + Surveyed

Leveraging Existing Work: Vulnerability and Risk Assessments



Flood Damage Assessment Summary - Cedar Creek/Wigle Creek

Flooded Structures within the Modelled Flood Boundary in the Cedar Creek and Wigle Creek subwatersheds

Flood Extent Area = 1,035 acres

	Flooded*	Within Flood Area**	Within Proximity***	Total
Structures	618	6	192	816
Parcels	612	0	18	630

*Features intersecting flood boundary as modelled by Landmark Engineers.

** Features on high ground completely surrounded by flooded area but not flooded itself.

***Features within 10 m of mapped flood extent, excluding features already tallied as Flooded or Within Flood Area.

Input Notes

- Flood Boundary compiled and supplied by Landmark Engineers in consultation with ERCA WMS staff.

Building Footprints

- Structures input from Building Footprint file provided by Towns of Amherstburg (2015) and Essex (2014).
- Structures not filtered for size. Records include homes and detached structures regardless of size.

Parcels

- Parcel fabric provided by MPAC via the County of Essex, dated September 2023.

DEM

Flood Extent

- Only flood areas greater than 100 sq m were considered in analysis.

Leveraging Existing Work: Vulnerability and Risk Assessments

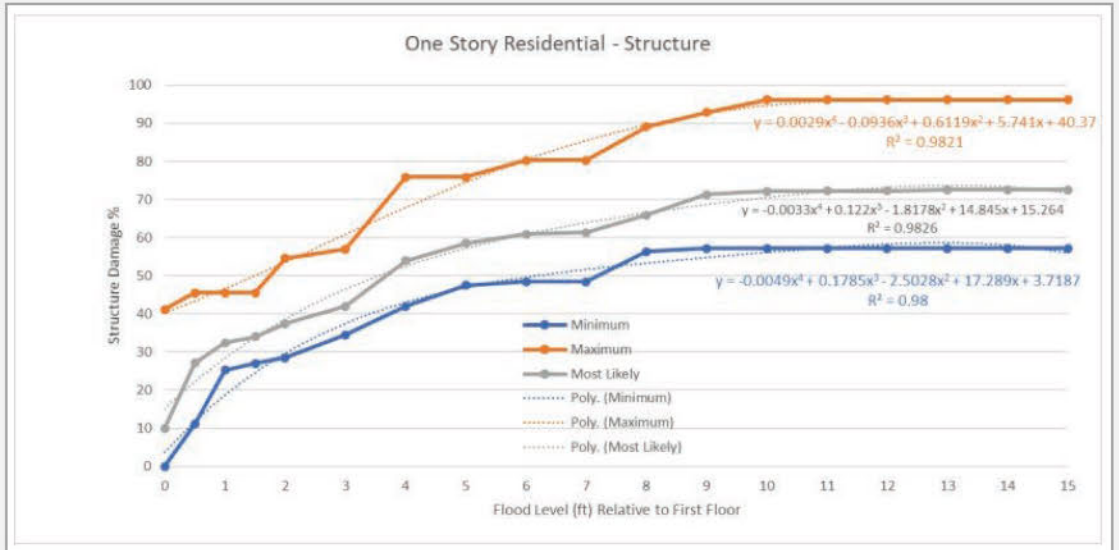


Figure 3.18 Depth-Damage Curves for Flooding above the Main Floor

Source: Town of Tecumseh Coastal Flood Risk Assessment (2022)

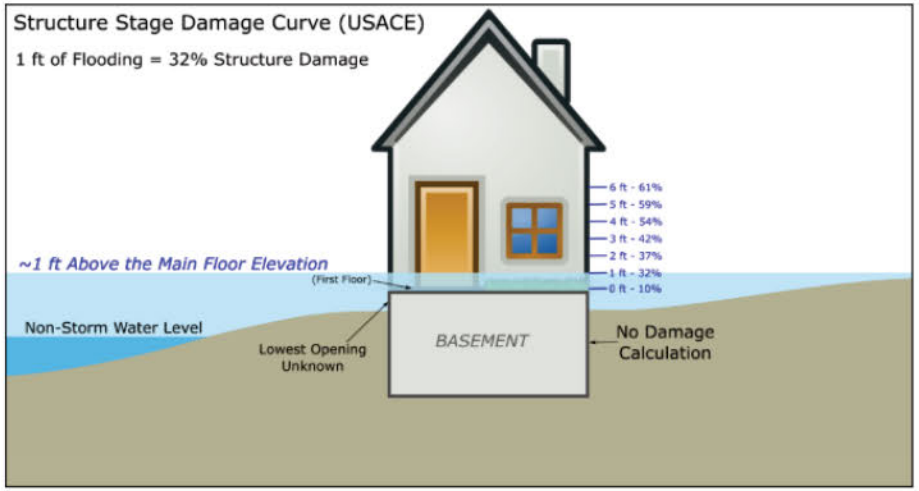
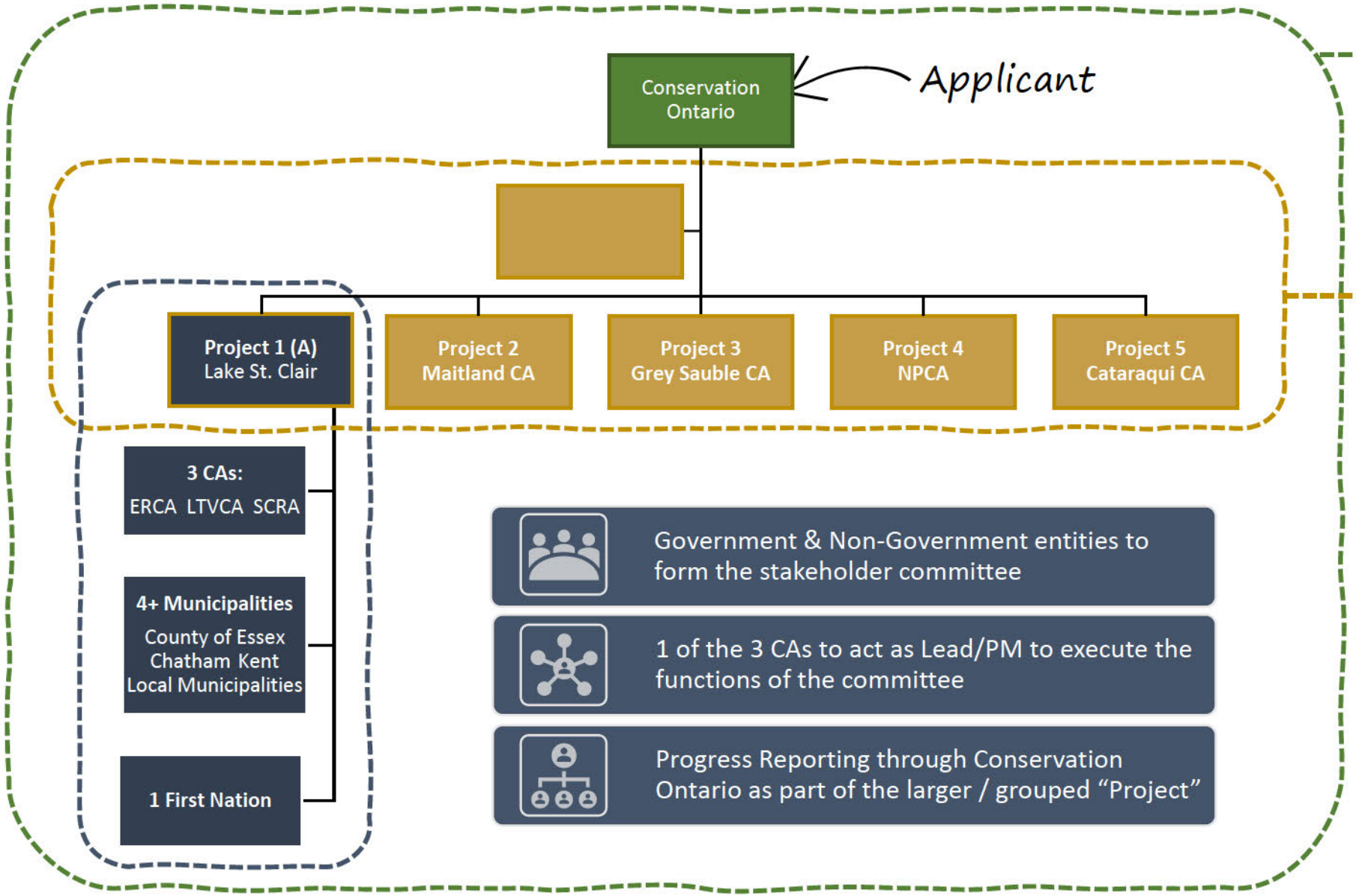


Figure 3.19 Stage Damage Relationship for a One-Storey Residential Building

Project A: Lake St. Clair Resilience Plan Application



Conservation Ontario

1. CO to procure 1 Peer Review consultant for all Projects
2. CO responsible for funding progress reports etc.

Peer Review (Tentative)

1. Potentially an academic institution to provide review of new work, specific to climate change.

- Lake St. Clair Project is 1 of 5 "subprojects" that would be managed by Conservation Ontario.
- Combining the projects maximizes the chances of receiving the dollars.
- Each of the 5 projects have their own Project Managers to ensure that the local challenges/issues are adequately addressed.

Project A: Lake St. Clair Resilience Plan

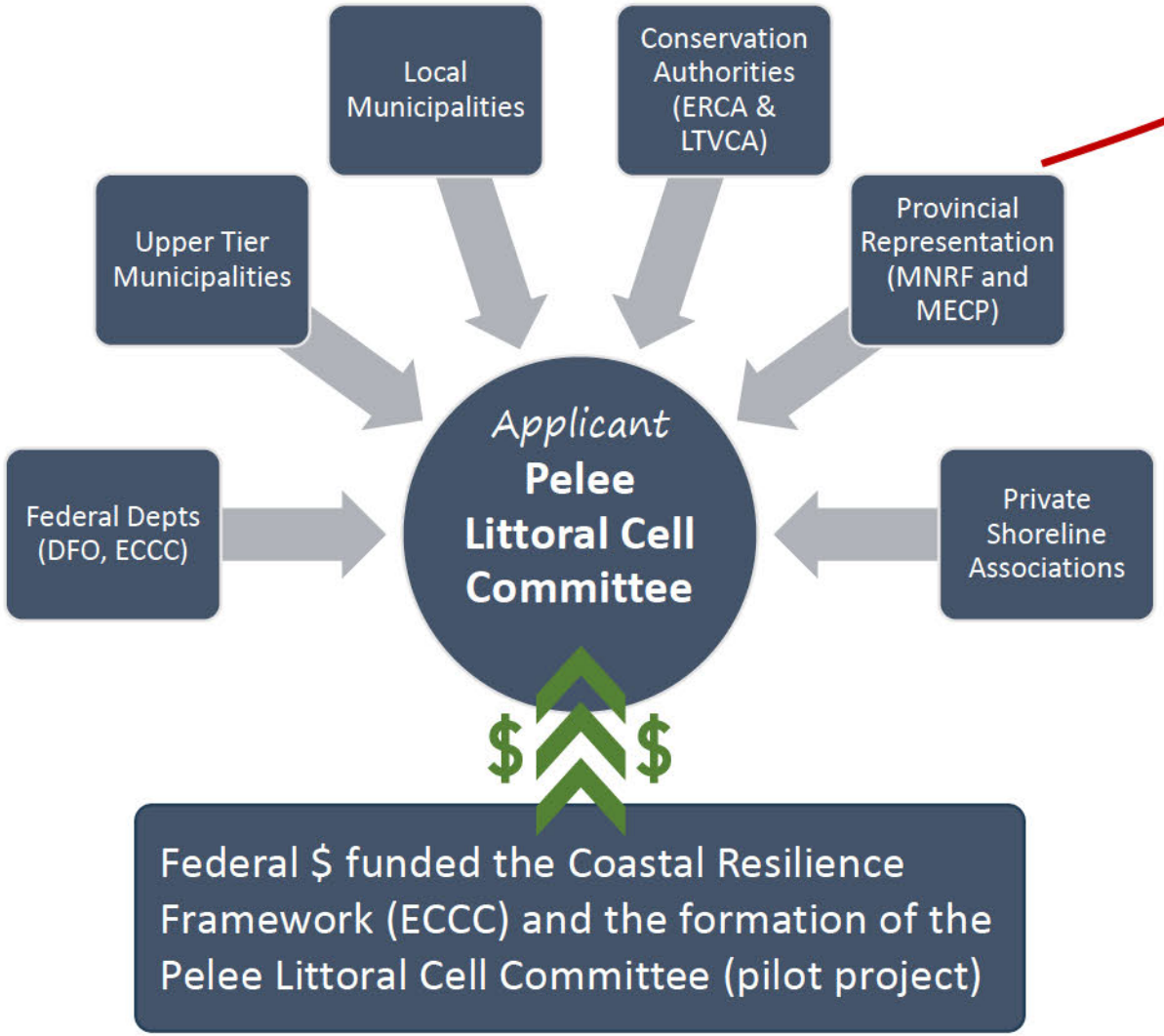
Notes:
- Contributions are TOTAL over the 3.5 years.
- Dollars can be contributed over time or as a single payment.

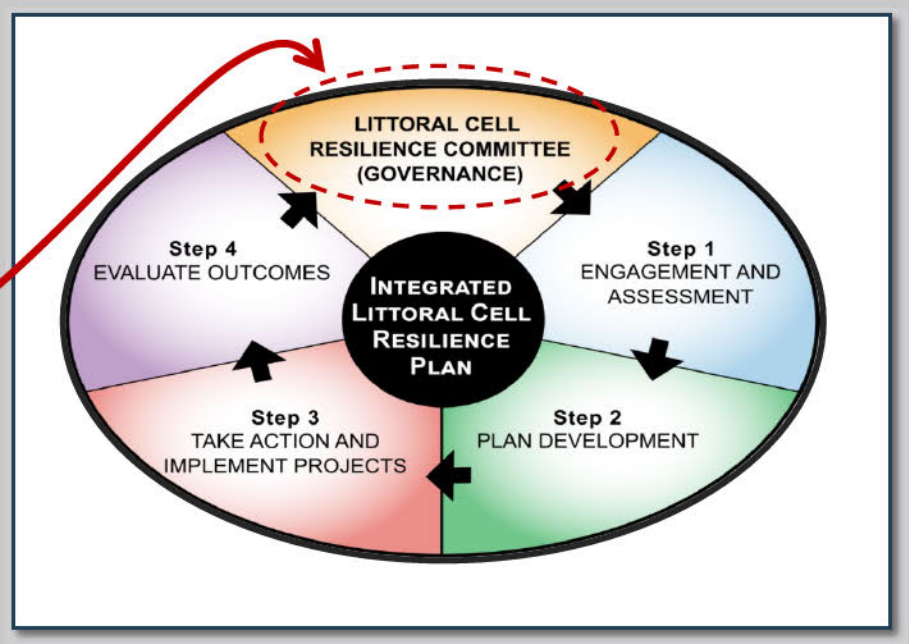
Tentative Project A Estimate

Partner	Contribution
3 Conservation Authorities	$60,000
County of Essex (w/ Council Support)	$50,000
Chatham-Kent (w/ Council Support)	$25,000
Other Partners	$53,000
Total Partner Contribution	**$188,000**

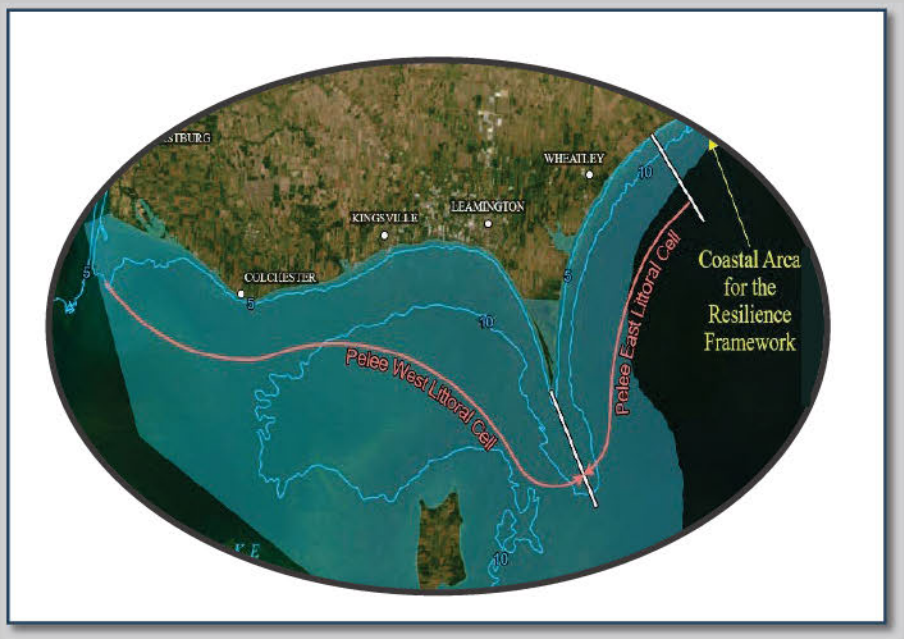
Partner	Contribution
Partners (25%)	$188,000
Potential NRCAN Match (max 75% or 3:1 ratio)	$564,000
Total Project Cost	**$752,000**

Project B: Pelee Coastal Resilience Plan





Graphic Source: Canadian Great Lakes Coastal Resilience Framework, ECCC (2023)



Project B: Lake Erie (Pelee Cell) Resilience Plan

Notes: - Contributions are TOTAL over the 3.5 years.
- Dollars can be contributed over time or as a single payment

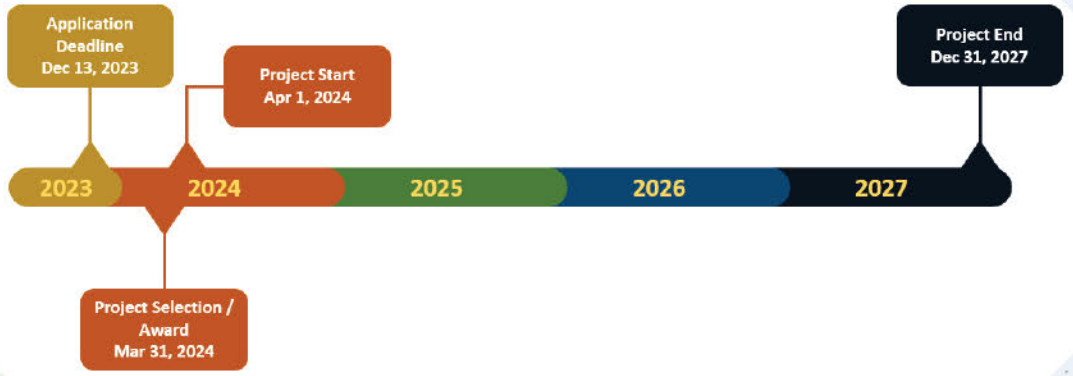
Tentative Project B Estimate

Partner	Contribution
Essex Region CA	$10,000
County of Essex (w/ Council Support)	$150,000
Other Partners (confirmed)	$195,000
Tentative Contributions	$100,000
Total Partner Contribution	**$455,000**

Partner	Contribution
Partners (~30%)	$455,000
Potential NRCAN (~70%)*	$1,000,000
Total Project Cost	**$1,455,000**

**NRCAN may match up to a 3:1 ratio (i.e. 75% of project cost). Project B is seeking ~2.2:1 (or ~70%) to remain competitive)*

Next Steps



- Inform County Council of Project (December 6th, 2023)
- Seek Letters of Support from County Council & ERCA Board of Directors
- Finalize Applications with partners & submit by December 13th, 2023
- Continue to establish new partnerships and initiate project (Project Award Selection March 31st, 2024)

Questions?