



Living Shoreline Project

Mahone Bay, NS

2020 - 2023



Building a Resilient Future



2020 Climate Adaptation Partners

Bluenose Coastal Action

Flood Protection and Shoreline Stabilization Project: Using natural infrastructure – including a living shoreline, artificial headlands, tidal wetland and a raised dyke – to protect people and businesses in Mahone Bay, N.S., from flooding and coastal erosion.

Credit Valley Conservation

Piloting a Smart Blue Roof to Adapt and Respond to Extreme Events: Piloting a smart blue roof to evaluate real-world performance to reduce flooding and urban heat islands by capturing rainwater until it evaporates, drains to harvesting tanks, or gradually flows into the stormwater system.

Evergreen

Climate-Ready Schools: Creating new school ground design guidelines that integrate natural infrastructure to prevent flooding and protect against heat waves and high winds. The guidelines are being developed in consultation with 14 school board partners in Ontario, Manitoba and Nova Scotia.

Fondation en environnement et en développement durable (led by CRE-Capitale)

Quebec City: Creating a Green Sponge City: Developing and implementing a natural rainwater management and urban greening strategy in priority areas in Quebec City to protect people from flooding and extreme heat. Both ecological and social benefits will be measured to scale initiatives to other areas and municipalities.

Gathering Voices Society

Building Adaptive Community Fire Programs: Piloting and testing a proactive fire management program with two Indigenous communities in British Columbia. The program involves landscape surveying, prescribed burning, mechanical thinning and landscape monitoring and evaluation

MAHONE HARBOUR FLOOD PREVENTION AND SHORELINE ENHANCEMENT PLAN

Mahone Bay, Nova Scotia

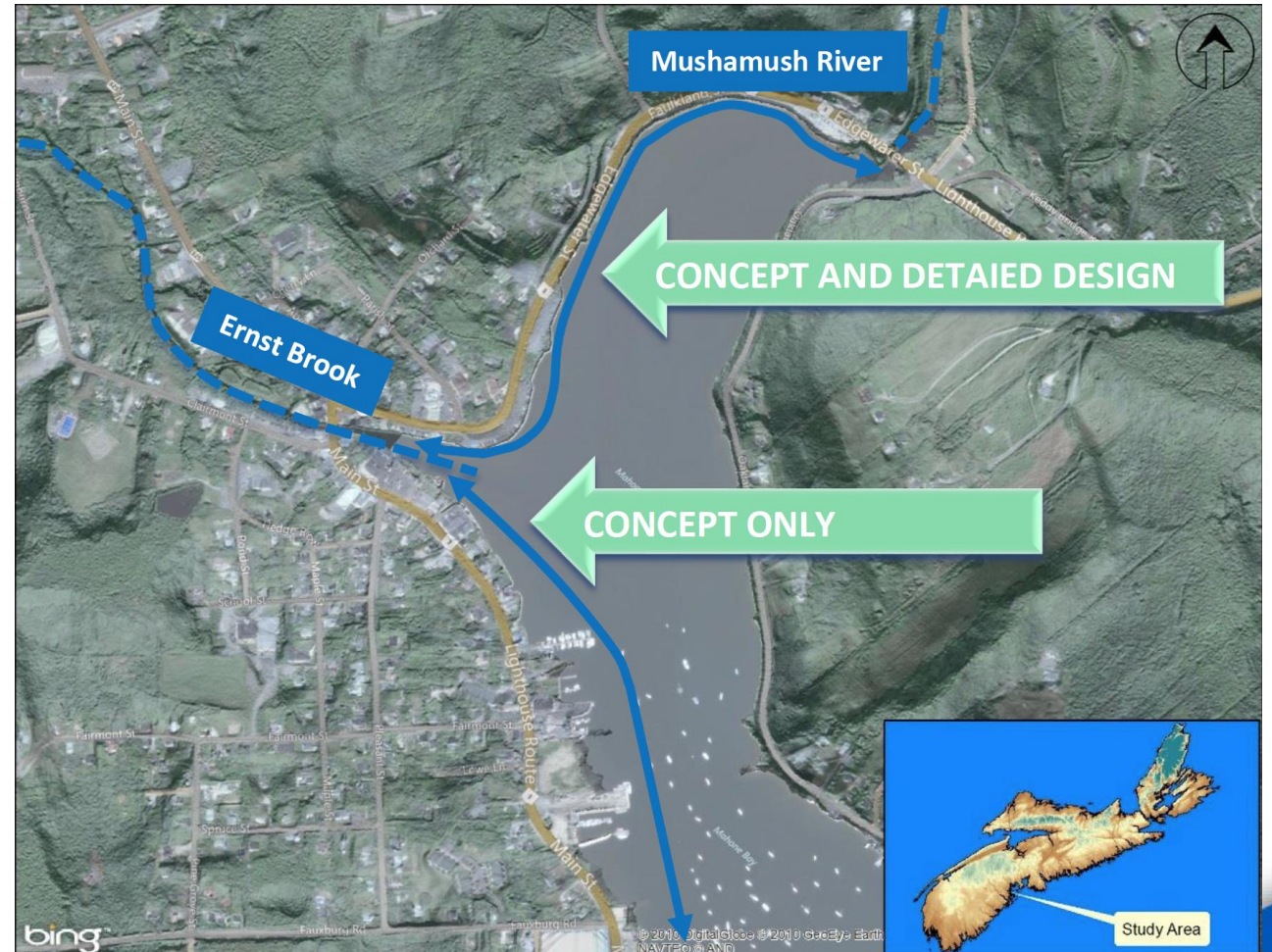
Final Report

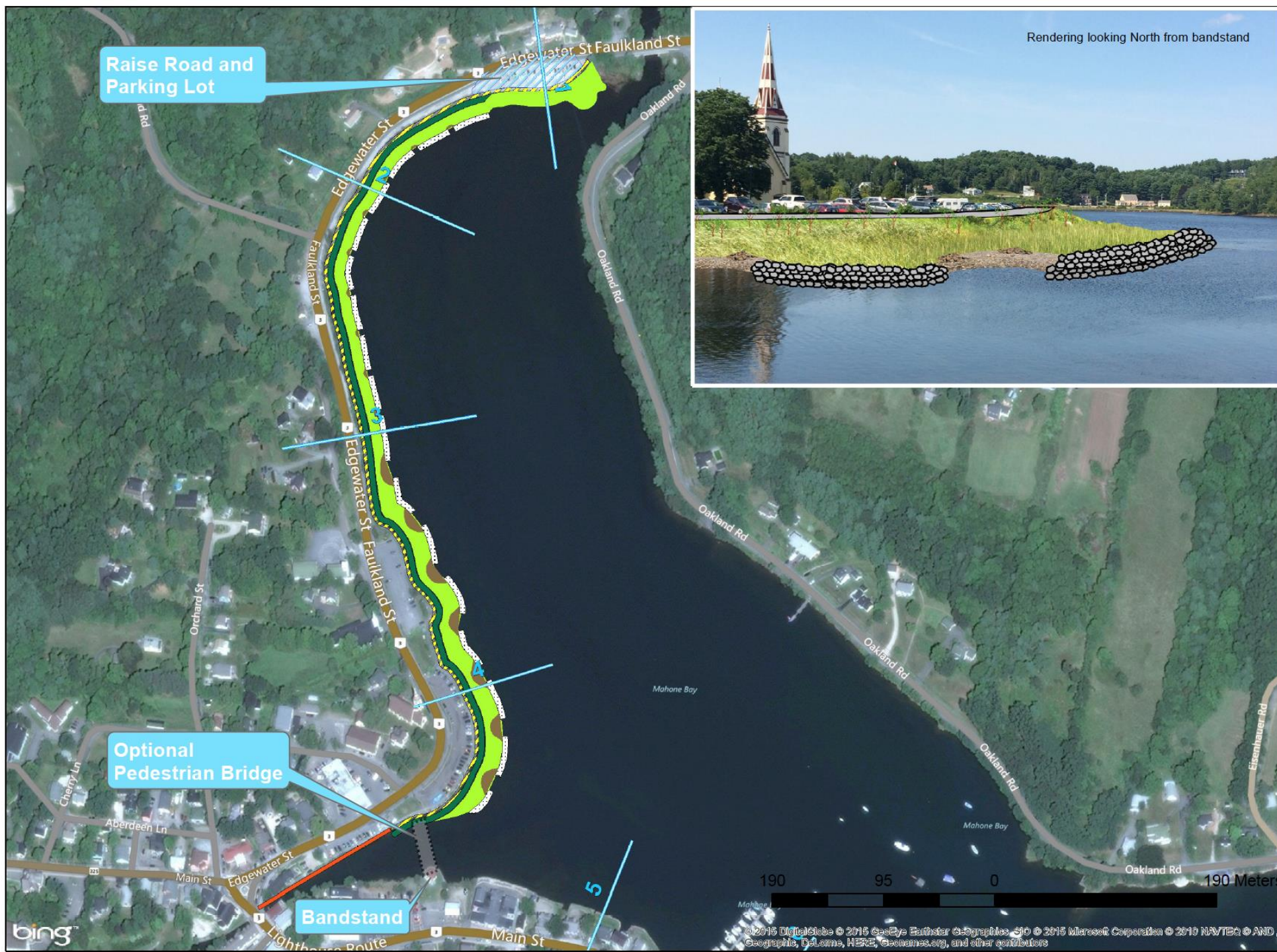


CBCL LIMITED

Consulting Engineers

Prepared for





Rendering looking North from bandstand

Legend:

- Raised Retaining Wall
- Rock Sills
- Embankment
- Marsh
- Waterfront Trail
- Pocket Beach



Figure 3.8

**North Shoreline
Schematic Plan View
Including Living
Shorelines Concept**

Date: December 2015
CBCL Project #: 151016.00



CBCL LIMITED
Consulting Engineers





Phase 1

We are excited to announce that we will be piloting a living shoreline project throughout the next two years in Mahone Bay to help protect a 60 m stretch of our shoreline. Stay tuned for project renderings, and details about the research being conducted at the pilot site!

Living Shoreline Benefits



Tidal Wetland

- Buffers the effects of storms and wave energy



Rock Sills

- Protects shoreline from flooding and erosion



Vegetated Bank

- Enhances the function of coastal habitats
- Improves water quality

Living Shoreline Components



Rock Sills



Tidal Wetland



Vegetated Bank

Projected Impact

- Erosion and Flood Protection
- Set Precedent
- Scalable
- Behaviour Change and Education

Progress to Date

- Created Preliminary Designs
- Acquired Permits
- Geotechnical Study
- Harvested Plant Stock
- Created Project Website and Sign
- Collected Baseline Data







Mahone Bay Living Shoreline

We are excited to announce that we will be piloting a living shoreline project throughout the next two years in the Mahone Bay Harbour to help protect a 60 m stretch of Mahone Bay's shoreline from flooding and erosion. This project builds on the conceptual designs produced by CBCL in 2016 in the [Flood Prevention and Shoreline Enhancement Plan](#).

MAHONE BAY LIVING SHORELINE



TransCoastal
Adaptations
Centre for Nature-Based Solutions



Phase 1

We are excited to announce that we will be piloting a living shoreline project throughout the next two years in Mahone Bay to help protect a 60 m stretch of our shoreline. Stay tuned for project renderings, and details about the research being conducted at the pilot site!

To learn more visit the website:

www.mahonebaylivingshoreline.com

Questions? Send us an email at climate@townofmahonebay.ca

Living Shoreline Benefits

Tidal Wetland

Rock Sills

Vegetated Bank

- Buffers the effects of storms and wave energy
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Look out for Project updates posted here!



Construction timeline

Rock Sills and Regrading of Bank

- Start: May 30
- End: mid-end July

Tidal Wetland and Vegetated Bank

- Start: beginning of July
- End: beginning of August

Overall

- Approximately 2 months.
- Bi-weekly progress / check-in meetings.
- No work on Sundays.
- Dexter will park equipment to one side of the lot to increase access to parking space on Sundays.
- Start time 7 AM through the work week and 8 AM on Saturdays.



Next Steps



May 6, 2022

To: Mahone Bay Mayor & Town Council

RE: Letter requesting financial support for the construction of the Mahone Bay Living Shoreline Project

As many of you are aware, Bluenose Coastal Action Foundation (Coastal Action) has been working with the Town, CBCL Engineering, and coastal restoration experts, CBWES and Transcoastal Adaptation, for the past three years on the development and delivery of a pilot living shoreline project along Edgewater Street in Mahone Bay across from the three churches. This work stems directly from the ***Flood Prevention and Shoreline Enhancement Plan*** developed for the Town of Mahone Bay by CBCL back in 2016. Coastal Action was successful in receiving a grant from the Intact Foundation in 2020 for a 3-year project in the amount of \$400,000; \$300,000 of which was specifically for the construction of the hard infrastructure costs associated with the living shoreline while the other \$100,000 went to CBCL for the engineered designs and our coastal restoration experts for the planting designs and pre- and post-construction monitoring and research.

Since Coastal Action was awarded this donation in 2020, there have been a multitude of setbacks and unforeseen roadblocks that have caused numerous delays and greatly increased the overall cost of the project.

- The project required a Crown Lands Permit which took approximately 10 months to complete and receive approval as the regulatory agencies reviewing the permit application had never received an application for such a project. They were unsure as to how to deal with it and it took a F/T person working with the various government bodies to work through the approval process.
- As part of the engineered design process, CBCL informed Coastal Action that the project required a geotechnical study to ensure that the soils could withstand the load bearing capacity needs for the project. This was required to be completed before the completion of the engineered designs and the before the construction process. This had not been part of the original discussions and, therefore, not included in the original budget. This unexpected additional component to the project also took a F/T staff person working with CBCL, the Town of Mahone Bay, and Conquest Engineering approximately six months to successfully coordinate the successful completion of this study.
- Due to the abovementioned delays, the project was off schedule by a year. Coastal Action sent out a Request for Tenders for the construction of the hard infrastructure components of the project in January 2022. As part of the bid process for the tender, all contractors who attended the pre-bid site meeting informed Coastal Action that there was no way that they could put together a bid for the work within the \$300,000 allocated for this phase of the project. In fact, all submitted bids were at least double this amount. Our \$300,000 construction project had turned into a \$600,000+ construction project due to the high inflation rates coming out of COVID. Intact Foundation were very considerate of these unforeseen impacts due to COVID for the construction of the project and agreed to provide an additional \$300,000 to Coastal Action. However, once again, the additional work required to deal with this new development in the project took a F/T person working with contractors, CBCL, coastal restoration experts, and Intact to troubleshoot and resolve the issue.



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Considering all the abovementioned delays and setbacks, Coastal Action has had to incur an additional \$140,719.30 (see breakdown in table below) in unexpected and unbudgeted project costs. We are set for the construction phase of the project starting this spring (June 2022) and greatly want to see this project through to a successful completion. What started out as a rather manageable \$400,000 project has turned into a very challenging almost \$1,000,000 project. Coastal Action would like to submit a request to the Town of Mahone Bay for a financial contribution in the amount of \$140,000 to cover the additional costs associated with the delivery of this project.

Mahone Bay Living Shoreline Pilot
Project
April 2020 to July 2022

Expenditure Item	Cost
CBCL Engineering Services	\$35,309.60
Saint Mary's University (Coastal Restoration Experts)	\$40,000.00
Dexter Construction Bid	\$639,400.00
GeoTech Study	\$33,890.50
Crown Lands Permit	\$101.71
Project Staff Salaries	\$112,017.49
Total	\$860,719.30

Funding Received	Amount
Intact Foundation	\$720,000.00
Difference	\$140,719.30

If you should have further questions or concerns about the contents of this letter, please contact myself, Brooke Nodding, at the contact information listed below. Thank you.

Sincerely,

Brooke Nodding, Executive Director

brooke@coastalaction.org

Office: 902-634-9977; Cell: 902-403-0332