



Administrative Report

Office of the Manager, Planning Services

To: Warden MacDonald and Members of Essex County Council

From: Rebecca Belanger, MCIP, RPP
Manager, Planning Services

Date: Wednesday, November 15, 2023

Subject: Shoreline Natural Hazard Mapping Initiative

Report #: 2023-1115-IPS-R41-RB

Purpose

To provide County Council with an update regarding the County-wide shoreline natural hazard mapping and data sharing initiative.

Background

On April 5, 2023 a report was provided to County Council (attached as Appendix 2) that requested approval for the award of contract to retain a coastal engineering consultant to complete the Essex County Shoreline Natural Hazard Mapping project. As noted in this report, the County was successful in obtaining a grant in the amount of \$240,000 through the Flood Hazard Identification and Mapping Program (FHIMP) with funding by Natural Resources Canada and the Ontario Ministry of Natural Resources and Forestry (MNR). As part of the County's budget approval process, \$200,000 had been ear-marked in a reserve for the flood hazard mapping updates.

Also noted in the Report to County Council from April, the Essex Region's shoreline mapping which is used for regulating development through the *Conservation Authorities Act* and the *Planning Act*, was last completed in 1976. This information needs to be updated for the roughly 200-plus kilometres of shoreline in our region. The regional flood hazard maps (shoreline and inland watercourse floodplains) are used by regulatory agencies to ensure development is "safe" with respect to flooding. The mapping is also utilized by planning authorities (the County and seven municipalities) to ensure that development occurs in a safe manner in accordance with the *Provincial Policy Statement (PPS)*, County Official Plan (OP) and local Official Plans. Schedule "C1" to the County's Official Plan,

Rebecca Belanger, MCIP, RPP, Manager, Planning Services
Corporation of the County of Essex, Suite 315, 360 Fairview Ave. W., Essex, ON N8M 1Y6
Phone: 519-776-6441, ext. 1325, Email: rbelanger@countyofessex.ca

attached as Appendix 1 to this Report, identifies those mapped areas as Lake St. Clair, Detroit River and Lake Erie Floodprone Areas. The preparation of this new shoreline natural hazard mapping will also create the need for changes and some updates to the Inland Floodprone Areas layer on Schedule "C1". The new mapping can be incorporated into the County's Official Plan when it is available and will likely coincide with the release of the new OP.

Due to the investments in shoreline studies in the past number of years including the Leamington Graduated Risk Floodplain Assessment, Southeast Leamington Sustainable Management Strategy, Tecumseh and Lakeshore Shoreline Management Plans there is substantial technical knowledge available to update this Schedule in the County Official Plan and for development approvals processes.

Discussion

In July of this year, Zuzek Inc. provided a status update that was forwarded to the Ministry of Natural Resources and Forestry as part of the funding agreement. The report summarized the progress on the project deliverables and the overall schedule.

The fieldwork associated with this project is complete. The data collection phase of the project was completed ahead of schedule which included lake bathymetry surveys in May and June of 2023. Drone imagery was also captured of all shoreline reaches in 2023 during leaf-off. An inventory of all shoreline structures has been completed with oblique photographs and a GIS layer (e.g. orthophotographs).

The technical analysis phase of the project has also recently been completed. This work has included:

- conducting a statistical analysis of measured lake levels,
- application of climate change analysis in the context of future lake levels, in accordance with the provincial requirements as set out in the Transfer Payment Agreement,
- preparation of hydrodynamic modeling and applying storm surge gradients.

The remainder of the schedule to complete the Flood Hazard Identification and Mapping Project (FHIMP) is as follows:

- November 30, 2023- Draft Flood Hazard Maps and Reports will be received by the County and ERCA. This task will include draft mapping of all shoreline reaches and sub-reaches with modifications made as wave uprush analysis continues.

- Public Open Houses have been scheduled in four of the municipalities with the intention of providing broad opportunity for any resident to have the ability to attend a session. All public open houses are scheduled to take place between 4:00pm-7:00pm.

December 4th, Atlas Tube Centre, Municipality of Lakeshore

December 5th, Municipality of Leamington Council Chambers

December 6th, Essex Arena, Shaheen Room, Town of Essex

December 7th, Event Centre, LaSalle Landing, Town of LaSalle

The intention of the open house is to provide residents with information about the project along with the ability to zoom-in on specific reaches of shoreline or their individual properties.

- The final flood hazard maps and report will be completed as required by the FHIMP grant program by March 1, 2024.

Upon completion of the updated shoreline natural hazard mapping, the County's Official Plan will be replaced with the relevant schedule. The shoreline natural hazard mapping will also be utilized by ERCA through the Watershed Management Services Department, to assess development proposals and issue development approvals within the Conservation Authority's mandate.

Preparation of this mapping assists the County in meeting obligations for regional emergency management coordination. The County's Emergency Management Coordinator (CEMC) is aware of this mapping initiative. As the remaining milestones are achieved, communications will continue with Emergency Management Coordination to receive the mapping and report for consideration during annual updates to the Hazard Identification and Risk Assessment (HIRA).

Updates to this mapping also assist the County with understanding vulnerabilities to County infrastructure resulting from changing lake levels and the application of the climate change scenario. County roads including portions of County Roads 33, 50 and 20 are particularly vulnerable to coastal hazards due to their location. There are also several storm sewers in these areas associated with municipal infrastructure that are becoming more vulnerable during times of high lake levels and in conjunction with heavy rainfall events. Continuing to assess and determine vulnerability of County infrastructure is a necessary first step prior to seeking available funding to mitigate the various coastal challenges that impact public infrastructure, and to help create sustainable, resilient coastal communities.

Financial Implications

This project is fully funded by the County's Rate Stabilization Reserve and matching grant funding contribution provided by the NRCan and the Ministry of Natural Resources and Forestry along with ERCA's in-kind support. Through discussions with the City of Windsor, they intend to contribute for their share of the project in the amount of \$40,000. The total cost of the project is \$439,999.36 (inclusive of HST).

Consultations

The Director of Watershed Management Services, ERCA has been involved through-out all steps in this project and assists the Manager, Planning Services with joint project management for this initiative.

Recommendation

That Essex County Council receive report 2023-1115-IPS-R41-RB from the Manager, Planning Services on the Shoreline Natural Hazard Mapping Initiative for information.

Approvals

Respectfully Submitted,

Rebecca Belanger

Rebecca Belanger, MCIP, RPP, Manager, Planning Services

Concurred With,

Allan Botham

Allan Botham, P.Eng., Director, Infrastructure and Planning Services

Concurred With,

Sandra Zwiers

Sandra Zwiers, MAcc, CPA, CA, Chief Administrative Officer

Appendix	Title
1	Schedule "C1" from the County Official Plan
2	Report to County Council, April 5, 2023