





LAKE ONTARIO SHORELINE MANAGEMENT PLAN HAZARD MAPS






Ganaraska Region Conservation Authority (GRCA)

LEGEND:

Hazard Mapping:

-  100 Year Flood Level
-  Flood Hazard Limit
-  Erosion Hazard Limit
-  Dynamic Beach Setback

Base Mapping:

-  Geographical Names
-  Dynamic Beach (Start Pt)
-  Dynamic Beach (End Pt)
-  Road Network
-  GRCA Administrative Boundary

INTERPRETATION OF THE HAZARD MAPS:

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Inset Map: © OpenStreetMap contributors

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The 100 Year Combined Flood Level considers both static lake level and storm surge, having a combined probability of being equalled or exceeded during any year of 1% (i.e., probability, P =0.01). The 100 Year Combined Flood Level elevation for GRCA is +76.01 m IGLD85 (+75.55 m to +75.60 m CGVD2013).

Flood Hazard Limit

The Flood Hazard Limit is defined as the 100-Year Flood Level plus an allowance for wave runup and uprush. For the exposed shoreline, wave effects are calculated based on localized nearshore conditions and waves. For embayments, the standardized 15 m setback is applied. Refer to the Lake Ontario Shoreline Management Plan for additional details.

Toe of Bluff

The Toe of Bluff is the transition from the gently sloping beach to the steep portion of the bank or bluff slope.

Stable Slope Allowance

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The landward extent of the Erosion Hazard is the sum of the 100 year erosion rate plus the Stable Slope Allowance, measured horizontally from the toe of the bank or bluff.

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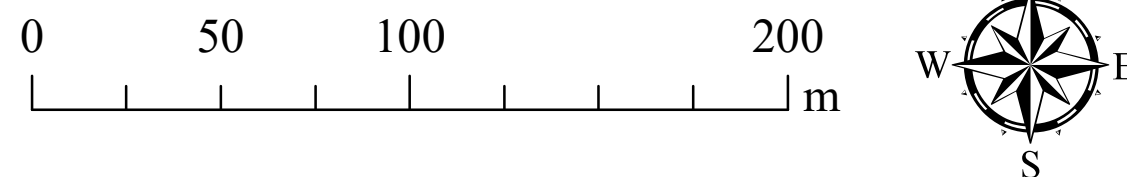
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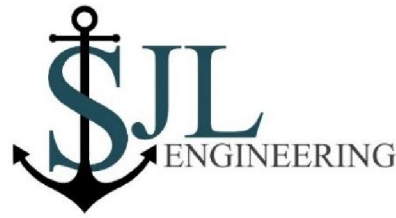
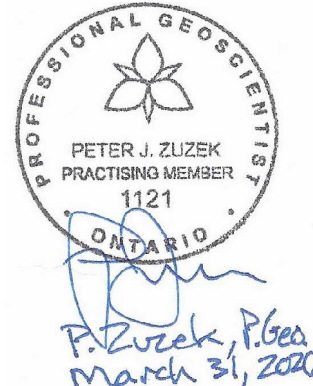
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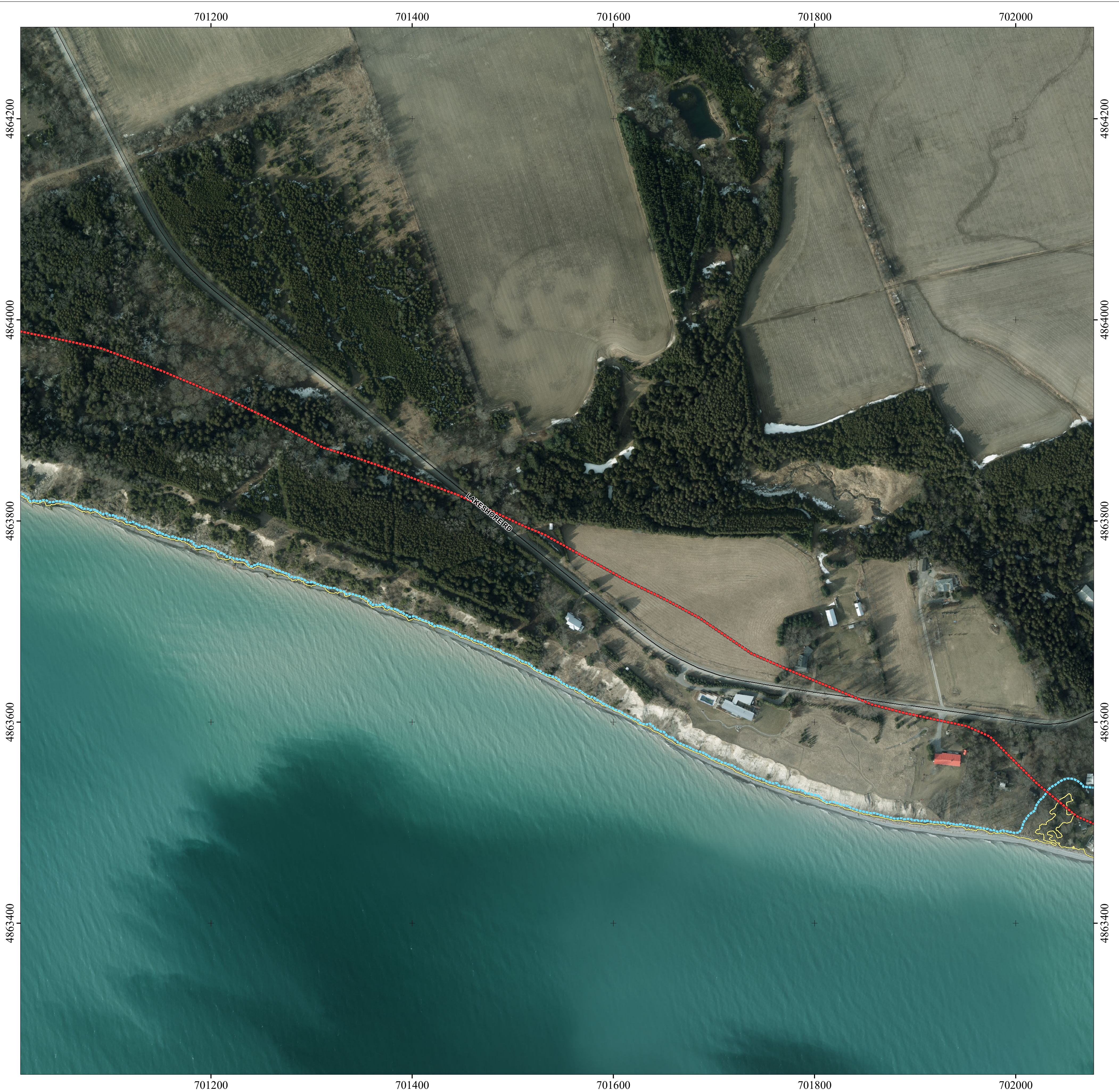
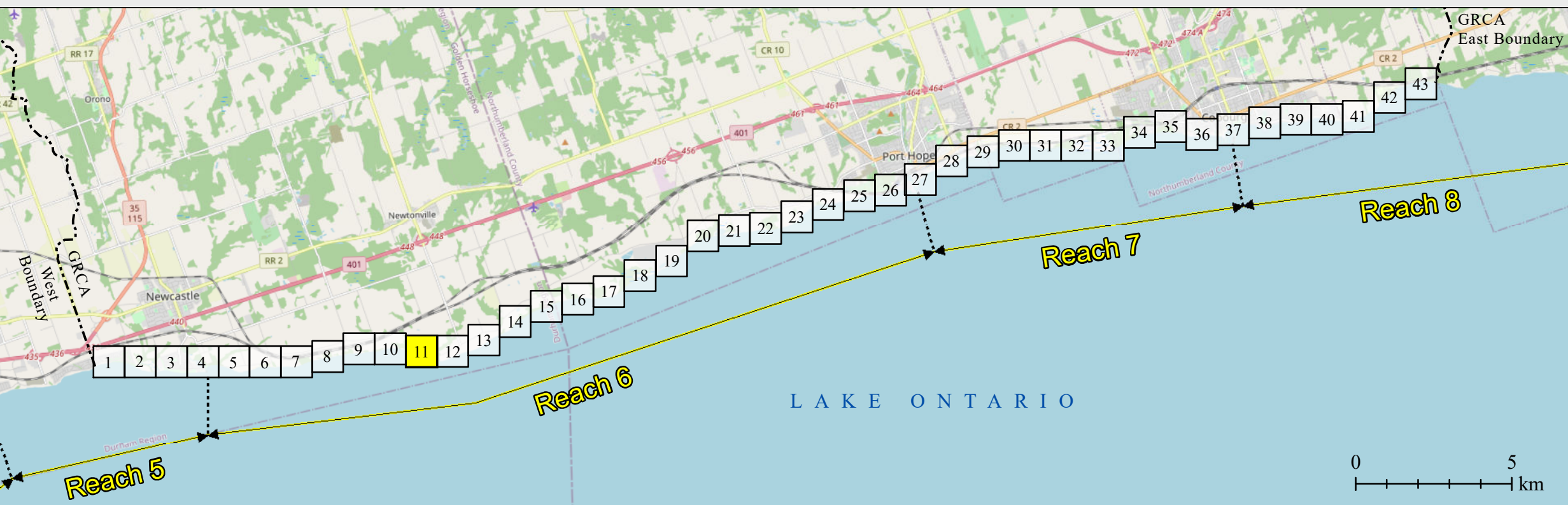


PREPARED BY:



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MAP PUBLISHED MARCH 2020



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PREPARED BY:



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PETER J. ZUZEK
PRACTISING MEMBER
1121
ONTARIO
March 31, 2020



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P.E. No. 12626
PROVINCE OF ONTARIO

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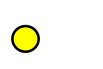



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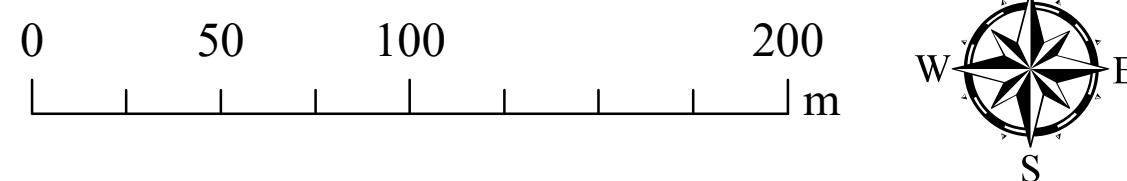
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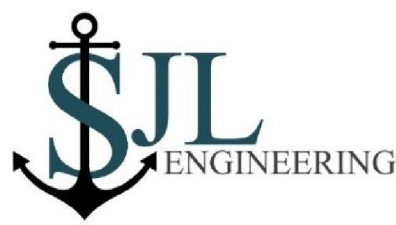
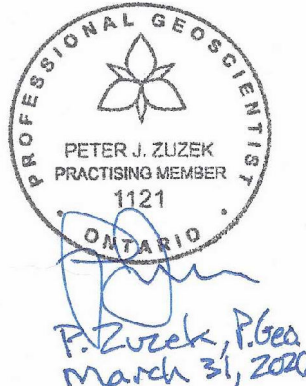
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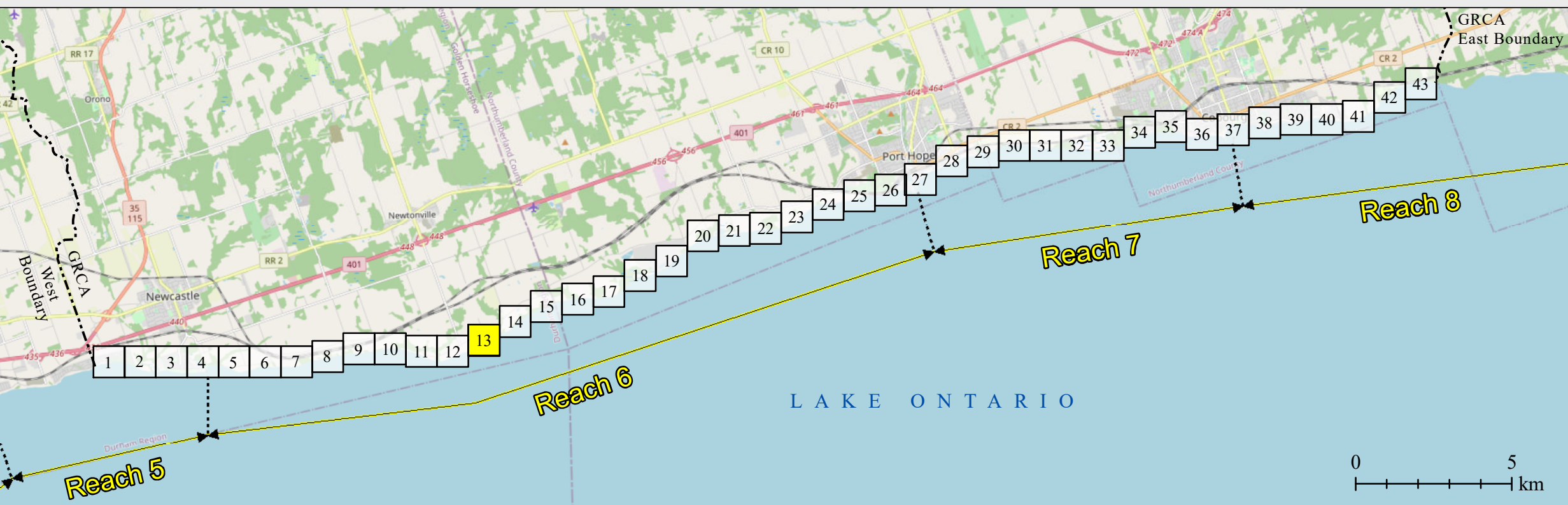


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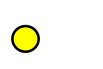



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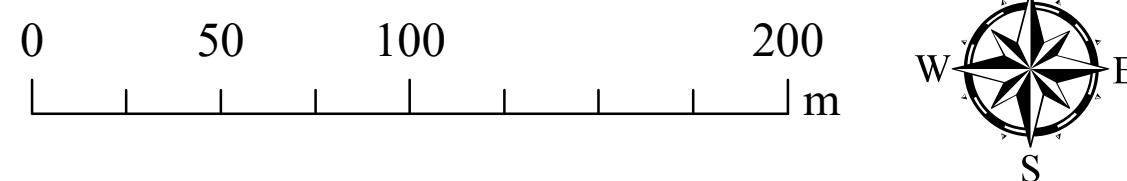
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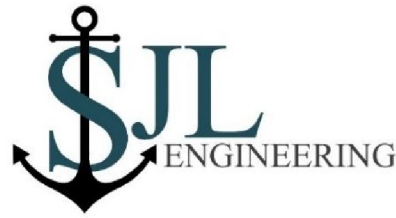
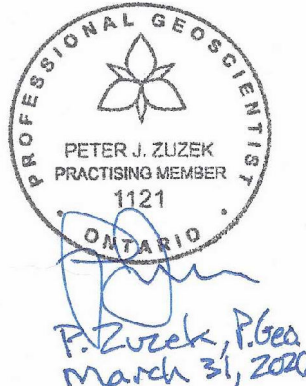
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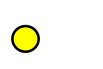



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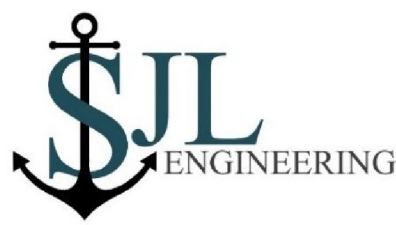
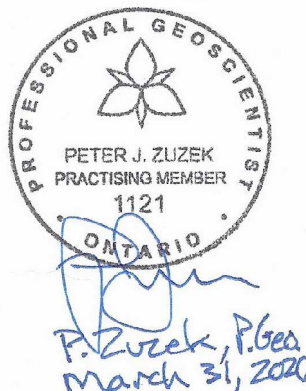
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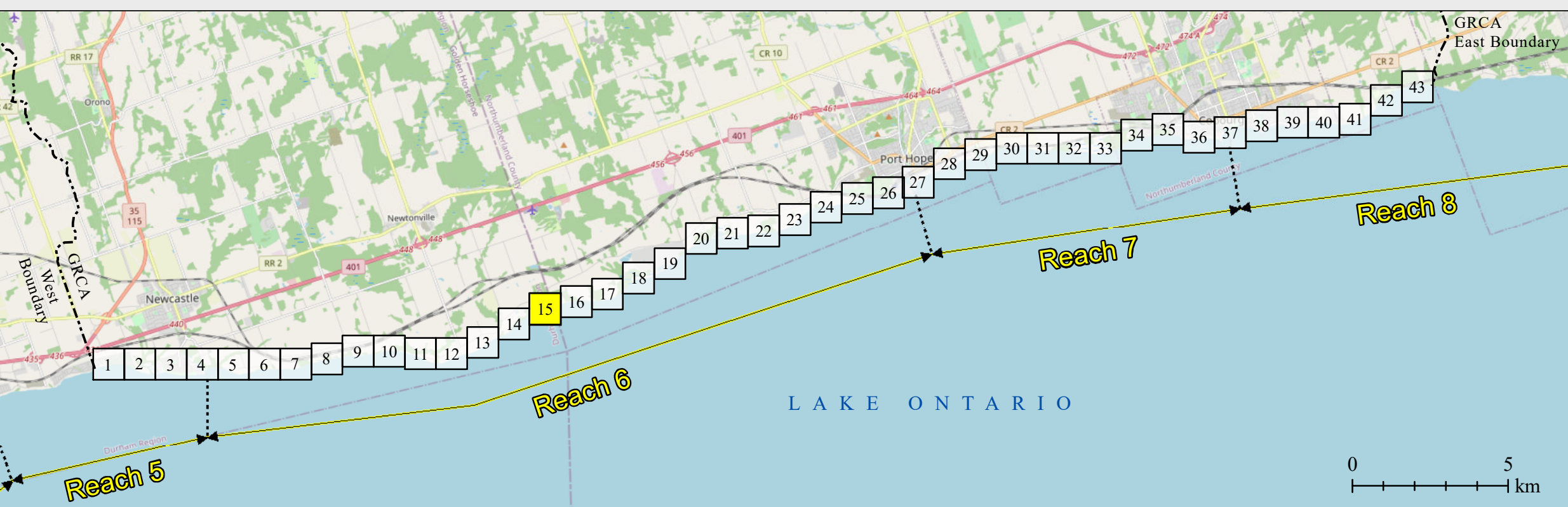
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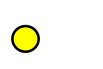



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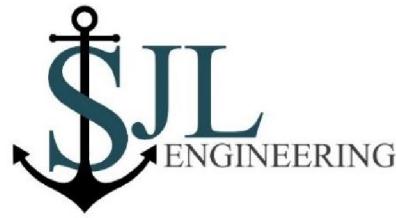
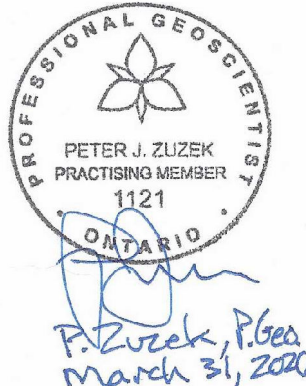
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The 100 Year Combined Flood Level considers both static lake level and storm surge, having a combined probability of being equalled or exceeded during any year of 1% (i.e., probability, P =0.01). The 100 Year Combined Flood Level elevation for GRCA is +76.01 m IGLD85 (+75.55 m to +75.60 m CGVD2013).

Flood Hazard Limit

The Flood Hazard Limit is defined as the 100-Year Flood Level plus an allowance for wave runup and uprush. For the exposed shoreline, wave effects are calculated based on localized nearshore conditions and waves. For embayments, the standardized 15 m setback is applied. Refer to the Lake Ontario Shoreline Management Plan for additional details.

Toe of Bluff

The Toe of Bluff is the transition from the gently sloping beach to the steep portion of the bank or bluff slope.

Stable Slope Allowance

The Stable Slope Allowance is defined as a horizontal setback equivalent to 3.0 times the height of the bank or bluff.

Erosion Hazard Limit

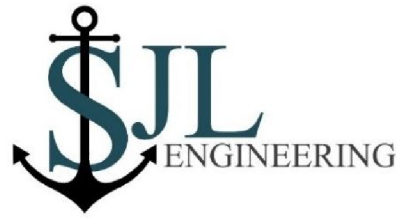
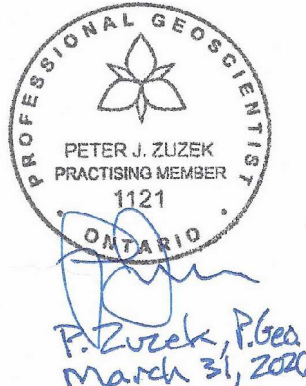
The landward extent of the Erosion Hazard is the sum of the 100 year erosion rate plus the Stable Slope Allowance, measured horizontally from the toe of the bank or bluff.

The Erosion Hazard Limit is not mapped in sheltered waters, however, localized shoreline/riverine erosion may occur and is subject to review by the Conservation Authority.

Dynamic Beach Hazard Limit

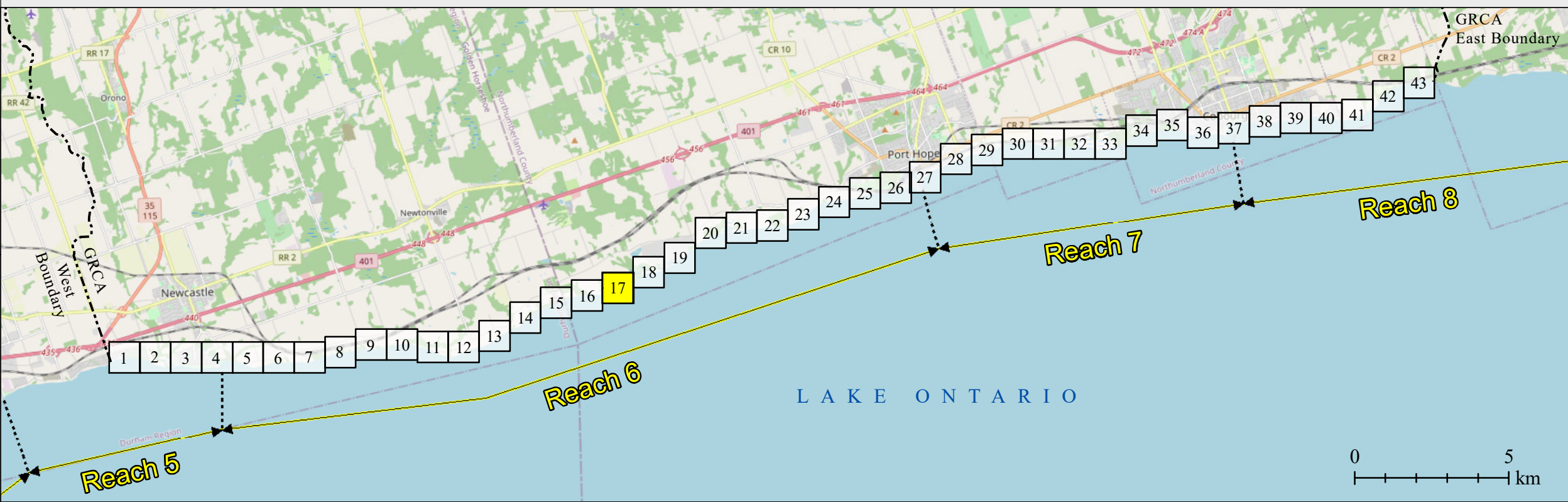
The Dynamic Beach Hazard Limit is defined as the sum of the Flood Hazard plus 30 metres measured horizontally. If the dynamic beach is eroding, an additional erosion allowance is included and a separate Erosion Hazard Limit is not shown. Refer to the Lake Ontario Shoreline Management Plan report for additional details.

PREPARED BY:



This map was published March 2020 for the Ganaraska Region Conservation Authority (GRCA). The mapping of hazardous lands, including erosion, flooding, and dynamic beach areas, is subject to change. The proponent of a proposed development on or adjacent to the hazardous lands should contact GRCA to discuss permit requirements.

Every reasonable effort has been made to ensure the accuracy of this map. However, neither GRCA, Zuzek Inc., SJL Engineering, or any other affiliated party assume any liability arising from its use. This map is provided without warranty of any kind, either expressed or implied.



Mapping prepared by Zuzek Inc. for the Ganaraska Region Conservation Authority.

MAP PUBLISHED MARCH 2020



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GRCA Map
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LAKE ONTARIO SHORELINE MANAGEMENT PLAN HAZARD MAPS

Ganaraska Region Conservation Authority (GRCA)

LEGEND:

Hazard Mapping:

- 100 Year Flood Level
- Flood Hazard Limit
- Erosion Hazard Limit
- Dynamic Beach Setback

Base Mapping:

- Geographical Names
- Dynamic Beach (Start Pt)
- Dynamic Beach (End Pt)
- Road Network
- GRCA Administrative Boundary

INTERPRETATION OF THE HAZARD MAPS:

The hazard maps were prepared to support the Lake Ontario Shoreline Management Plan. Wetland and riverine floodplains are not included on these hazard maps. The Dynamic Beach Setback is the onshore limit of the shaded pink polygon. The offshore limit in the lake highlights the linkages between overall beach stability and health, nearshore sediment resources, and longshore sediment transport. The hazard limit(s) are not the official regulatory limits of the Conservation Authority. Please contact the Conservation Authority for details on the regulatory limit and implications for any proposed work.

DATA SOURCES:

2018 Orthophotography and Digital Surface Model (DSM) provided by the Ministry of Natural Resources and Forestry

2016-2017 LiDAR Digital Terrain Model obtained from the Ministry of Natural Resources and Forestry. Contains information licensed under the Open Government Licence – Ontario.

Geographical Names obtained from Natural Resources Canada Road Network File, 2016 Census. Statistics Canada Catalogue no. 92-500-X

Inset Map: © OpenStreetMap contributors

Definitions:

100 Year Flood Level
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The Dynamic Beach Hazard Limit is defined as the sum of the Flood Hazard plus 30 metres measured horizontally. If the dynamic beach is eroding, an additional erosion allowance is included and a separate Erosion Hazard Limit is not shown. Refer to the Lake Ontario Shoreline Management Plan report for additional details.

Datums:
Horizontal: UTM 17N NAD1983, metres.
Vertical: CGVD2013, metres

Datum Conversion:
IGLD1985 - CGVD2013 = 0.42 m (average)
To convert from IGLD85 to CGVD2013, subtract 0.42 m.
Note: There are local variations along the reaches within GRCA. Refer to the Lake Ontario SMP for additional details.

0 50 100 200 m

PREPARED BY:

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