

Attachment 1 - Example of a Lake Ontario Shoreline Hazard Map Sheet

Toronto and Region Conservation Authority Lake Ontario Shoreline Flooding and Erosion Hazards



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This map presents the Lake Ontario shoreline hazard mapping completed on a reach-based assessment. The Lake Ontario shoreline within the TRCA jurisdiction was segmented into 49 reaches based on common features such as wave exposure, bank/bluff height, shoreline composition, etc.

The 1:2,000 scale digital terrain model from 2015 and orthom imagery from 2020 have been used to produce and map the shoreline flooding, erosion and dynamic beach hazard limits. Local irregularities and physical shoreline conditions affecting the hazard limits may not have been apparent in the terrain model or orthom imagery. The hazard mapping is a living document and reflects the potential hazard conditions using the most recent available shoreline data. Hazard limits will change over time, for example as the shoreline retreats or as large municipal shore protection projects are added or damaged. **Where development is proposed on a property or properties within the study area, the location and extent of hazard limits should be reviewed with regard to the most current and detailed site information available, with due consideration to the effect of shoreline conditions on adjacent properties and their associated shoreline and non-shoreline hazards. This map does not include non-shoreline hazards, i.e., those hazards not pertaining to coastal processes, such as valley and stream corridor flood and erosion hazards.**

Hazard Mapping

- Toe of Bank/Bluff
- Shoreline Erosion Hazard Limit
- 100-year Toe Erosion Allowance
- Shoreline Flooding Hazard Limit
- 100 Year Flood Level
- Dynamic Beach Hazard Limit

Legend

Elevation Contour, 1 m interval

Basemap Features

Elevation
Topographic elevation contours are derived from 2015 LiDAR dataset acquired by Airborne Imaging. The data was acquired on various dates between April/May, 2014 and April, 2015. The LiDAR Digital Terrain Model (DTM) is a 1 metre resolution gridded raster representing the bare-earth terrain derived from a classified LiDAR point cloud. Topographic contours are shown at 1 metre intervals.

Lake Ontario Water Level
The Lake Ontario Chart Datum (Low Water Datum, IGLD1985) elevation is: 74.2 metres.
At the time of the elevation data collection, the Lake Ontario monthly mean water level for April 2014 was 74.83 m and for April 2015 was 74.62 m (IGLD1985).
Corresponding with the aerial photography shown in this map, the Lake Ontario monthly mean water level for April 2020 was 75.32 metres and for May 2020 was 75.38 metres (IGLD1985).
Water Level information is provided by Canadian Hydrographic Service, Fisheries and Oceans Canada.
<http://www.waterlevels.gc.ca/>

Vertical Datums
The measurement of water levels uses a different vertical datum than that of land. Lake Ontario water levels are referenced to International Great Lakes Datum 1985 (IGLD1985). Elevations on this map are referenced to a land datum, Canadian Geodetic Vertical Datum of 1928 (CGVD28). The relationship between the lake and geodetic datums varies around the lake. For the TRCA Lake Ontario shoreline the vertical datum conversion between IGLD1985 and CGVD28 is documented by Natural Resources Canada at benchmark station TORO 1-1959 (also known as 59U9526 and 59U541) established by the Canadian Hydrographic Service in Toronto Harbour at the south side of Queen's Quay.
Elevations in IGLD1985 = CGVD28 + 0.083 metres.

Aerial Photography
The 2020 acquired aerial imagery at 8 cm resolution by First Base Solutions. Data was collected April and May 2020.
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Scale 1:2,000

1 centimetre = 20 metres

Map Projection: Universal Transverse Mercator, Zone 17
Horizontal Datum: North American Datum 1983
Grid Spacing: 100 metres

Mapping Prepared by:

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