

## Toronto Island Park Flood and Erosion Mitigation Project – Emergency Works Declaration

**To:** MECP Central Region Office, Ministry of Environment, Conservation and Parks Leslie Rich, Conservation Ontario

From: Jet Taylor, Senior Project Manager, Engineering Projects

**Date:** February 19, 2020

Toronto and Region Conservation Authority (TRCA) is preparing to undertake emergency flood and erosion control works within Toronto Island Park resulting from the 2017 and 2019 record Lake Ontario high-water events and associated flooding. Based on these events, coupled with flood mapping prepared by TRCA and Baird Engineering, 300 metres (m) of road along Lakeshore Avenue and 200 m of road along Cibola Avenue have been identified as requiring immediate raising in order to allow emergency service and operations vehicles to access the water treatment facility and Island resident community. 2019 flooding at the Island emergency service station is shown below in **Figure 1**.



Figure 1. Flooding along Cibola Avenue at EMS Station 48. City of Toronto, 2019.

Further, shoreline protection along Algonquin Island and Wards Island is inadequate with significant wave overtopping resulting in community road and dwelling flooding and health and safety concerns as shown in **Figure 2**.



Figure 2. Flooding along Algonquin Island. City of Toronto, 2019.

In the spring of 2017, snowmelt in combination with significant rainfall resulted in an unprecedented rise in the water levels of Lake Ontario. Lake levels reached their peak height on May 27, 2017 with a recorded elevation of 75.93 m IGLD (International Great Lakes Datum), the highest water level ever recorded. The flooding event impacted the entirety of Toronto's Waterfront, especially Toronto Island Park.

The flood significantly affected Toronto Island Park with over 800 residents, many businesses, and two schools directly impacted. Both City of Toronto and TRCA staff worked to prevent damage and the loss of property and assets through emergency flood mitigation efforts including deployment of 45,000 sandbags, 1000 meter bags, and over a dozen industrial pumps.

Despite these efforts, Toronto Island Park was closed for 88 days between May 4 and July 30, 2017 due to the flooding. The closure during peak season presented a major disruption in tourist and recreational activity which is an important source of revenue to the City and local businesses. The island parks also experienced significant shoreline erosion, damage, and debris accumulation over the spring and summer of 2017.

In 2018, TRCA retained Baird & Associates (Baird) to provide coastal engineering services to complete a study to assist in planning for and responding to future flood conditions. The study consisted of the following four major components: i) Flood Characterization Report, ii) Flood Risk Assessment, iii) Flood Mapping, and iv) Flood Mitigation Alternatives Report.

The City of Toronto, TRCA, and Baird held a meeting in December 2018 to identify the leading mitigation alternatives for the areas most affected by the 2017 flood, with consideration for the

recommendations made by Toronto Island residents. The alternatives included protecting low-lying residential areas with a berm or dyke structure, elevating low-lying roads, increasing the crest elevation of shore protection structures, and directing surface drainage to existing sumps. These alternatives were developed using the 500-year stillwater level for Toronto (static lake level plus storm surge) as the design water level.

In the spring of 2019, Lake Ontario experienced unprecedented water levels which surpassed the previous 2017 record by ten centimeters. Lessons learned from 2017, along with proactive mitigation measures implemented in 2018, effectively reduced the impact of flooding in 2019. Strategically placed short-term measures helped reduce the impact of the 2019 high lake level event; however, key areas were identified that require long-term flood protection. TRCA has committed to helping the City of Toronto with the development of a long-term solution through the Class Environmental Assessment for Remedial Flood and Erosion Control Projects (Class EA) process, and intended to initiate this process in early 2020 pending confirmation of available funding; however given the persistent elevated water levels in Lake Ontario, it is TRCA's declaration that critical elements of this long-term protection be carried out forthwith in response to an emergency and it is in the interests of public health and safety and environmental and property protection. The critical works will be undertaken in accordance with Section 9.0 – Emergency Measures of the Class EA, with the remainder of works following the standard Class EA process.

The scope of emergency works includes a geotechnical investigation and detailed design to advise subsequent construction to raise approximately 300 m of road along Lakeshore Avenue, 200 m of road along Cibola Avenue, 370 m of flood protection along the north shore of Algonquin Island and 300 m of flood protection along the north shore of Wards Island. A location map has been attached to this notice that shows the emergency works areas.

TRCA will access the Island via barge and will utilize existing park roads for access. Emergency services staff will be made aware of road works and access past the construction area will be made available. TRCA intends to mobilize as early as February 20, 2020 for subsurface investigations with construction scheduled to begin in March, 2020. To ensure public safety, formal and informal trails along work areas and the construction access route will be closed until the emergency works have been completed.

TRCA's public, government and stakeholder communication strategy involves a meeting with the City Councillor and Island residents (currently scheduled for February 23, 2020), Notice of Project Commencement letter issuance to stakeholders, signage, and maintaining an active website with project updates.

Following completion of the emergency works, TRCA will submit a written report within 14 working days documenting the location and nature of the emergency; the physical, biological, socioeconomic and/or cultural effects of the emergency; actions taken to resolve the emergency; effectiveness of the actions taken; and anticipated future remedial works.

For more information, please contact the undersigned at 416-661-6600 Ext. 5526 or jet.taylor@trca.ca.

Sincerely,

Jet Taylor,

Senior Project Manager, Engineering Projects Restoration and Infrastructure

