

## Section I – Items for Board of Directors Action

**TO:** Chair and Members of the Board of Directors  
Meeting #9/19, Friday, October 25, 2019

**FROM:** Michael Tolensky, Chief Financial and Operating Officer

**RE:** **DISASTER MITIGATION AND ADAPTATION FUND UPDATE**

---

### KEY ISSUES

Toronto and Region Conservation Authority (TRCA) was successful in securing approximately \$56M through the Disaster Mitigation and Adaptation Fund (DMAF) through two TRCA led submissions. TRCA also partnered on a City of Toronto led application that will provide an additional \$20M of DMAF funding to TRCA.

TRCA continues to collaborate and support our partner municipalities to apply to similar funding programs that support TRCA objectives and achieve mutual goals and objectives. When TRCA's partner municipalities are successful with funding applications, TRCA will continue to liaise with staff to identify opportunities which leverage our expertise to implement these projects.

### RECOMMENDATION

**THAT the Disaster Mitigation and Adaptation Fund update report regarding the successful Toronto Region Ravine Erosion Risk Management and Hazard Mitigation Project; Toronto Waterfront Erosion Hazard Mitigation Project; City of Toronto led Toronto Tree Canopy and Waterfront Shoreline Project – Parks, Forestry & Recreation be approved;**

**AND FURTHER THAT TRCA continues to collaborate with its partner municipalities on multi-stakeholder grant opportunities in order to diversify revenue streams and leverage TRCA's expertise to strengthen continued partnerships.**

### BACKGROUND

In the spring of 2018, Infrastructure Canada (INFC) launched the DMAF program to combat the impacts of climate change on Canadian Communities. DMAF is a national program that will invest \$2 billion over 10 years to support large-scale infrastructure projects to help communities better manage the risks of disasters triggered by natural hazards such as floods, wildland fires, and droughts.

In January of 2019, TRCA submitted two DMAF project applications to INFC in support of TRCA initiatives under the Erosion Risk Management Program (ERMP). Both the Toronto Region Ravine Erosion Risk Management and Hazard Mitigation Project and the Toronto Waterfront Erosion Hazard Mitigation Project were approved under the DMAF program and together have secured \$56 million in federal funding over the next 10 years. Additionally, staff worked closely with Toronto Parks, Forestry & Recreation (PFR) to submit a separate City-led application which included several TRCA assets. PFR's Toronto Tree Canopy and Waterfront Shoreline Project has also been approved under the DMAF program, through which TRCA will be the ultimate recipient of an additional \$20 million in federal and capital funding over the next 10 years.

TRCA staff also provided input into DMAF applications by the City of Markham and City of Vaughan for projects that would address erosion hazard and flood risks of concern to TRCA.

## Item 8.5

While these specific applications were unsuccessful, both the City of Markham and City of Vaughan were successful with additional applications that secured federal funding in the amount of \$48.6M and \$16.6M respectively. TRCA will continue to pursue opportunities for collaboration with Markham and Vaughan on implementation of these projects that will leverage our expertise and provide shared benefits and efficiencies.

### **RATIONALE**

#### **Toronto Region Ravine Erosion Risk Management and Hazard Mitigation Project**

The July 8, 2013 storm event severely impacted the GTA causing over \$932 million in damage across multiple watersheds and municipal jurisdictions. This project is intended to address the most vulnerable hazards to property and critical infrastructure that were impacted from this major event and exacerbated by subsequent minor events in the Don River, Humber River, Etobicoke Creek, and Mimico Creek watersheds. The multiple erosion control assets proposed will provide cumulative resiliency to ensure the most erosion vulnerable areas are stabilized to safeguard infrastructure from a similar future event that is likely to impact the GTA in the future due to climate change and other factors.

There are 111 unique sites (15 in Etobicoke Creek; 16 in Mimico Creek; 48 in Humber River; and 32 in Don River) selected as part of this project at an investment of \$78 million for erosion control and critical infrastructure upgrades within the City of Toronto, Peel Region and York Region. Additional details regarding project implementation are available in *Attachment 1 - Toronto Region Ravine Erosion Risk Management and Hazard Mitigation Project List* and the location of each of the project sites can be seen in *Attachment 4 - Disaster Mitigation and Adaptation Fund Project Site Map*

Over the past five years, many of these sites and assets have experienced minor to moderate progression of erosion as observed under TRCA's ERMP. This rate of erosion is largely as a result of the multiple severe weather events that have taken place since the original event, including the high groundwater levels and rainfall event in May 2017. This observed increase in the frequency and intensity of significant weather events, coupled with the increasing age and deteriorating condition of existing erosion control structures, highlights the vulnerability of the ravine systems to future erosion if action is not taken to mitigate these hazards.

#### **Toronto Waterfront Erosion Hazard Mitigation Project**

TRCA currently owns and maintains an extensive network of 231 shoreline erosion control structures along the north shore of Lake Ontario extending from Etobicoke in the west to Ajax in the east. These structures are designed to withstand erosion processes in order to protect the shoreline, adjacent tableland, public amenities, and infrastructure. Many of these structures are at, or nearing, the end of their functional lifespan and require major maintenance to restore their protective capacity and ensure continued protection of critical assets. Due to limited funding however, the extent of work that can be carried out each year is not sufficient, resulting in an ever-deteriorating shoreline and a backlog of repairs that become increasingly costly if not addressed in a timely manner.

The ERMP has tracked the condition of all shoreline structures based on annual inspections dating back to 2006. Over the past two years, catalogued damages have increased significantly, largely as a result of the multiple severe weather events that the Toronto waterfront has endured. Most notably, this includes the 2017 record high Lake Ontario water levels and the record wave heights caused by the April 14-15, 2018 southern Ontario ice storm. The recent Spring 2019 high lake level event, which once again saw record breaking water levels, has caused further deterioration to these already vulnerable structures. This observed increase in the frequency and intensity of significant weather and high lake level events, coupled with the

## Item 8.5

increasing age and deteriorating condition of existing erosion control structures, highlights the vulnerability of the shoreline to continued erosion if action is not taken to mitigate the hazard.

Through the Toronto Waterfront Erosion Hazard Mitigation Project, TRCA will return this extensive network of shoreline erosion control structures to a state of good repair. This will be accomplished by implementing major maintenance works to restore the protective capacity of existing infrastructure, thereby enhancing the resiliency of the Lake Ontario shoreline to endure ongoing erosion risks. Completion of the project will repair and enhance 80 shoreline erosion control structures in order to protect recreational space and infrastructure across 13 waterfront parks while providing long-term erosion protection to over 10 km of the Lake Ontario shoreline. *Attachment 2: Toronto Waterfront Erosion Hazard Mitigation Project List* and *Attachment 4: Disaster Mitigation and Adaptation Fund Project Site Map* provides additional details and locations of the 13 project sites.

### **Toronto Tree Canopy and Waterfront Shoreline Project – Parks, Forestry & Recreation**

The City of Toronto led Toronto Tree Canopy and Waterfront Shoreline Project was developed in collaboration with TRCA and submitted to support efforts to proactively mitigate the increasing flood and erosion risks facing the Toronto waterfront and address the damage caused by the 2017 high lake level event and April 14-15, 2018 ice storm event.

The City's proposal recognizes that healthy trees provide an essential stormwater management service that can proactively mitigate the risk of floods by reducing peak flows. By expanding the City's newly planted tree program and increasing tree maintenance and natural area restoration, the proposed projects will increase the number of healthy trees that provide this service. Native plantings along the shoreline will also provide erosion control, proactively addressing erosion post floods.

The Project also involves repairs and enhancements to shoreline erosion control infrastructure from Marie Curtis Park in the west to Bluffer's Park in the east and includes 11 TRCA erosion control assets within Ashbridges Bay Park, Bluffer's Park and Humber Bay Park East and West. In addition, the project also includes remedial flood protection, path/boardwalk repairs and enhancement and erosion protection in other key areas including Toronto Islands, Tommy Thompson Park, the Western Beaches and the Eastern Beaches. TRCA and PFR are partnering in undertaking this work, with approximately \$20 million flagged for TRCA project delivery. Additional details regarding the City of Toronto led project sites can be found in *Attachment 3: Toronto Tree Canopy and Waterfront Shoreline Project List*.

### **Relationship to Building the Living City, the TRCA 2013-2022 Strategic Plan**

This report supports the following strategies set forth in the TRCA 2013-2022 Strategic Plan:

**Strategy 2 – Manage our regional water resources for current and future generations**

**Strategy 7 – Build partnerships and new business models**

**Strategy 12 – Facilitate a region-wide approach to sustainability**

### **FINANCIAL DETAILS**

Over the next 10 years, TRCA will receive a total of \$56 million in federal funding for two TRCA led projects through the DMAF program, as well as an additional \$106.4 million in matching municipal support from the City of Toronto, Region of Peel and York Region for the two TRCA led projects. The City of Toronto led Toronto Tree Canopy and Waterfront Shoreline project, will contribute an additional \$20 million of work for TRCA. TRCA is also in discussions with other municipal recipients of DMAF funds, including the City of Markham and the City of Vaughan, about potential fee for service implementation roles that would leverage our expertise to advance their projects.

## Item 8.5

### Toronto Region Ravine Erosion Risk Management and Hazard Mitigation Project

With the \$22.31 million in approved federal funding over the next 10 years, TRCA will work closely with our municipal partners to successfully implement major maintenance works for existing erosion control and sewer infrastructure, in addition to the implementation of new erosion control and slope stabilization works. These works will incorporate innovative solutions to realize a resilient network of structures capable of withstanding current and predicted severe weather events in order to mitigate the risk to safety, property, infrastructure, the environment, and economic disruption that is presented by ongoing erosion hazards across each of the four watersheds. *Table 1: Project Cash Flow – Ravine* details the anticipated cash flow over the next 10 years.

**Table 1. Project Cash Flow – Ravine**

Year	Recipient Contribution (60%)	Federal Contribution (40%)	Total Budget
2019/2020	\$11,567,572	\$4,627,029	\$16,194,601
2020/2021	\$5,117,848	\$2,047,139	\$7,164,987
2021/2022	\$6,775,446	\$2,710,178	\$9,485,624
2022/2023	\$6,912,578	\$2,765,031	\$9,677,610
2023/2024	\$6,871,800	\$2,748,720	\$9,620,520
2024/2025	\$5,195,550	\$2,078,220	\$7,273,770
2025/2026	\$4,668,900	\$1,867,560	\$6,536,460
2026/2027	\$5,075,700	\$2,030,280	\$7,105,980
2027/2028	\$3,593,550	\$1,437,420	\$5,030,970
<b>Total</b>	<b>\$55,778,944</b>	<b>\$22,311,578</b>	<b>\$78,090,522</b>

Note: yearly allocations subject to adjustment

### Toronto Waterfront Erosion Hazard Mitigation Project

The Government of Canada will be contributing \$33.80 million towards the Project through DMAF funding and the City of Toronto will be providing an additional \$50.69 million through capital levied funds. The Project will invest a total of \$84.49 million over 10 years to provide erosion protection and ensure the long-term resiliency of the Toronto waterfront. *Table 2: Project Cash Flow – Waterfront* outlines the detailed anticipated cash flow for the project over the next 10 years.

**Table 2. Project Cash Flow – Waterfront**

Year	Recipient Contribution (60%)	Federal Contribution (40%)	Total Budget
2019	\$ 297,000	\$ 198,000	\$ 495,000
2020	\$ 1,188,000	\$ 792,000	\$ 1,980,000
2021	\$ 1,513,000	\$ 1,008,667	\$ 2,521,667
2022	\$ 2,838,000	\$ 1,892,000	\$ 4,730,000
2023	\$ 3,488,000	\$ 2,325,333	\$ 5,813,333
2024	\$ 3,091,000	\$ 2,060,667	\$ 5,151,667
2025	\$ 5,894,000	\$ 3,929,333	\$ 9,823,333
2026	\$ 7,357,000	\$ 4,904,667	\$ 12,261,667
2027	\$ 8,622,000	\$ 5,748,000	\$ 14,370,000
2028	\$ 16,404,000	\$ 10,936,000	\$ 27,340,000
<b>Total</b>	<b>\$ 50,692,000</b>	<b>\$ 33,794,667</b>	<b>\$ 84,486,667</b>

Note: yearly allocations subject to adjustment

## Item 8.5

### **Toronto Tree Canopy and Waterfront Shoreline Project – Parks, Forestry & Recreation**

TRCA is the ultimate recipient (partner) on the City of Toronto led project and anticipates receiving \$20 million for project delivery. As the ultimate recipient agreement between City of Toronto and TRCA is still being finalized, the 10-year cash flow projections are not yet known at this time.

#### **DETAILS OF WORK TO BE DONE**

As a condition of the agreement with INFC, TRCA will aim to develop positive relationships through a meaningful and mutually respectful engagement process with communities whose interests may be impacted by these projects. Consultation and engagement with stakeholders are guided by TRCA's Engagement Guidelines and the aboriginal consultation obligations outlined by Infrastructure Canada as a condition of funding approval. TRCA will provide a notification to Aboriginal groups highlighting the funding support received by TRCA from Infrastructure Canada in support of ravine and waterfront erosion protection projects. Moving forward, TRCA will also continue to finalize the agreements with INFC and City of Toronto for all projects in order to initiate project activities. As work progresses, TRCA will continue to keep the Board of Directors of TRCA and all stakeholders apprised of the status of these projects and the associated funding.

**Report prepared by: Kimberly Krawczyk, extension 5862**

**Emails: [kim.krawczyk@trca.ca](mailto:kim.krawczyk@trca.ca)**

**For Information contact: Matthew Johnston, extension 5525**

**Emails: [matthew.johnston@trca.ca](mailto:matthew.johnston@trca.ca)**

**Date: October 25, 2019**

**Attachments: 4**

**Attachment 1:** Toronto Region Ravine Erosion Risk Management and Hazard Mitigation Project List

**Attachment 2:** Toronto Waterfront Erosion Hazard Mitigation Project List

**Attachment 3:** Toronto Tree Canopy and Waterfront Shoreline Project List

**Attachment 4:** Disaster Mitigation and Adaptation Fund Project Site Map