

## Section I – Items for Board of Directors Action

**TO:** Chair and Members of the Board of Directors  
Meeting #5/19, Friday, May 24, 2019

**FROM:** Moranne McDonnell, Director, Restoration and Infrastructure

**RE:** **MORNINGSIDE CREEK RESTORATION PROJECT**

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### KEY ISSUE

Update on activities to restore and enhance natural heritage habitats associated with Morningside Creek. (RES.#A146/16)

### RECOMMENDATION

**IT IS RECOMMENDED THAT the Toronto and Region Conservation Authority (TRCA) continue to work with the City of Toronto and community stakeholders on the strategic ecological restoration of selected areas of Morningside Creek;**

### BACKGROUND

At Authority Meeting #7/16, held on September 23, 2016, Resolution #A146/16 was approved as follows:

*THAT approval be granted for Toronto and Region Conservation Authority (TRCA) to work with the City of Toronto for the restoration of habitats along Morningside Creek;*

Morningside Creek is the only remaining Redside Dace creek in Toronto. Redside Dace is a fish currently listed as endangered under the Ontario Endangered Species Act (ESA 2007) and federally under the Species at Risk Act (SARA). As described in the “Recovery Strategy for Redside Dace in Ontario” (2010), it is particularly important to develop and implement restoration efforts to protect and enhance the functional habitat required for Redside Dace. There are records of Redside Dace in Morningside Creek as recently as 2016. Despite the existing records of Redside Dace, there are still significantly degraded sections within this reach and opportunities for restoration that would benefit habitat conditions and expand local population ranges. The section of creek shown in the map below (Figure 1) has been significantly altered, most recently in the late 1990s and early 2000s by adjacent residential housing developments. Portions of the creek channel were relocated and restored at that time through construction of a meandering natural channel. However, much of the associated creek and floodplain remained in low vegetation cover contributing to higher than desired in-stream temperatures, which threatens the resident population of Redside Dace.

Since 2016, with funding provided by the Save the Rouge Valley System, and the Morningside Heights Landowners Group, and in-kind support from the City of Toronto, TRCA staff have been working to implement strategic restoration projects along Morningside Creek to improve overall natural system function and address Redside Dace habitat needs. During the last 2 years, restoration projects including planting, instream habitat improvements as well as monitoring have occurred along this section of Morningside Creek.

## Item 8.3.

Deliverables at the end of 2019 include:

1. Total of 1,065 m of stream restoration; including bank stabilization, bioengineering and substrate enhancement, instream habitat, erosion mitigation and water quality improvement; (Bioengineered cuttings: 31,840 plants planted)
2. Total of 3.2 ha of riparian area restored; including riparian shrubs to improve foraging areas for Redside Dace along the creek, upland shrub and tree plantings to help cool the creek and provide natural cover for wildlife; (13,475 plants planted)
3. Total of 0.6 ha Wetland Enhancement Plantings; (1,500 shrubs planted)
4. Total of 2.5 ha of upland and floodplain tree and shrub planting implemented by City of Toronto; (17,150 tree and shrubs planted)
5. Temperature monitoring of the creek and stormwater pond outlets to support the determination that the stormwater management ponds are not increasing stream temperatures as much as solar inputs
6. Three Community Events involving TRCA, City of Toronto and the local community (Over 1000 trees and shrubs planted).

As outlined in the Provincial Recovery Strategy, one of the main limiting factors for Redside Dace within the stream is elevated thermal conditions. Within the study area, TRCA, in partnership with the Ministry of Natural Resources and Forestry (MNRF) and the City of Toronto, completed a Thermal Balance Study (2017) to explore precipitation, discharge and water temperature data related to stormwater management ponds discharging into Morningside Creek. Analysis of this data suggested that thermal loading in the study reach receives greater contributions from solar inputs over those contributed from stormwater discharge. As such, riparian plantings have become a large focus regarding future restoration planning for this reach. By planting along the riparian area and floodplain, vegetation will help to shade out surface and creek flows and will help to cool in-stream temperatures for Redside Dace. With the support of the province and the City of Toronto, additional tree and shrub plantings are proposed throughout the floodplain. As an important component of the plan, planting will not occur around deeper in-water pools where resident Redside Dace commonly reside. This approach is consistent with the Recovery Strategy habitat condition recommendations for open undercut banks with overhanging grasses.

### **RATIONALE**

Morningside Creek has experienced considerable alteration in the past. This project has provided the opportunity to restore some of the natural diversity and ecological function that was negatively impacted by historical activities and more recent urban development within the system. The continuation of this project will allow for additional riparian and upland plantings to improve instream conditions, biodiversity and wildlife habitat including habitat for the Redside Dace. The project provides an excellent opportunity to work closely with TRCA's partners to further enhance the understanding on how to manage the natural environment within occupied Redside Dace streams.

## Item 8.3.

### 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 3 – Rethink greenspace to maximize its value**

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

#### FINANCIAL DETAILS

In 2016, Save The Rouge Valley System and the Morningside Heights Landowner Group Ltd., entered into an agreement to transfer \$1,000,000 to TRCA for restoration and community engagement activities. By the end of 2019, TRCA will have spent an estimated \$436,000 of these funds. The remaining \$564,000 will be utilized to increase vegetation along the stream through riparian plantings, additional instream works, hosting two community events, and post-implementation monitoring valued at \$10,000, to be carried out in years 1, 3 and 5 following completion of the final restoration activities in 2021. Expenditures incurred for these activities are being tracked within account codes 113-32 and 119-55.

#### DETAILS OF WORK TO BE DONE

Staff are currently in discussions with various agencies and partners to finalize the conceptual plans for future works. Future plans will include but are not limited to 3.6 ha of riparian plantings, 260 m of stream restoration through bioengineered material; 740 m of infill bioengineered material, and stream restoration works to improve meanders and bank stability and tertiary treatments for thermal inputs into the stream. Final delivery of all components will be completed by end of 2021. Future monitoring will continue in 2022, 2024 and 2026.

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**Date: May 8, 2019**

**Attachments: 1**

Attachment 1: Morningside Creek Restoration Plan 2016-2021

# Item 8.3.

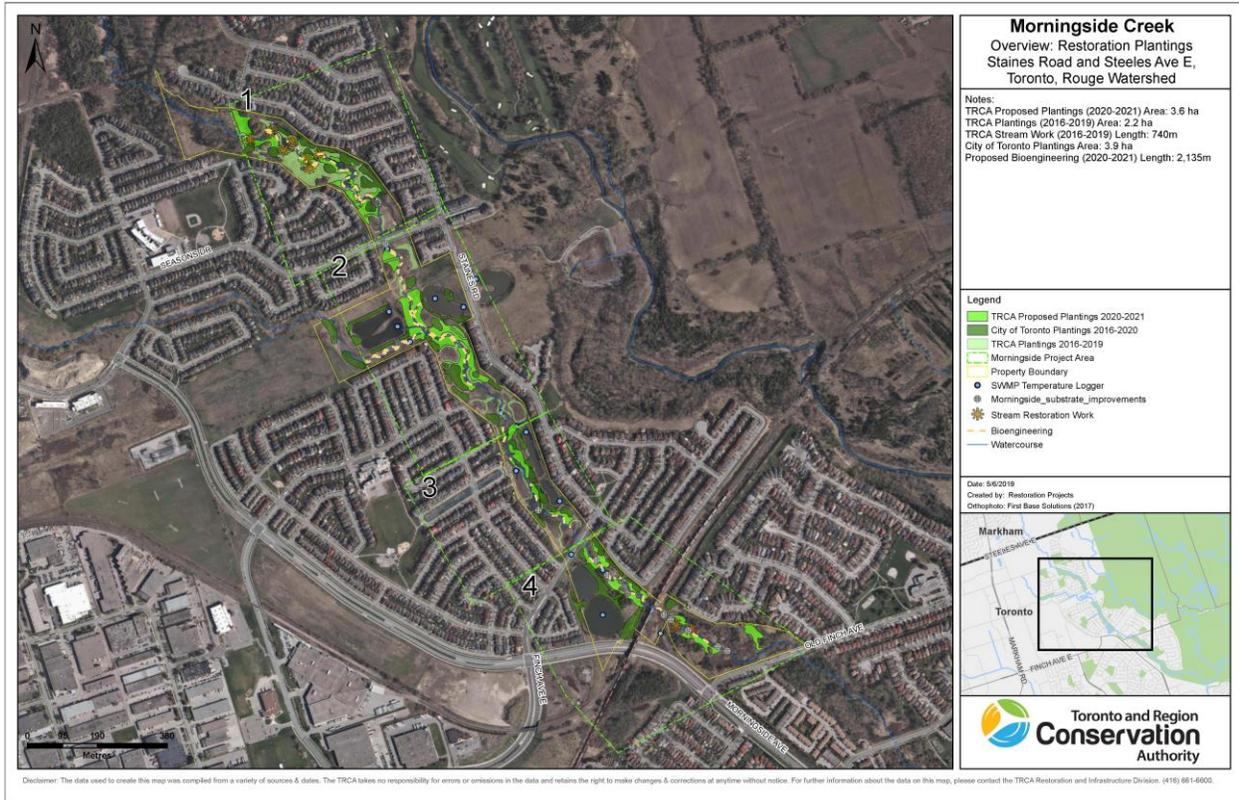


Figure 1. Morningside Creek Restoration Plan 2016-2021