

Item for the Information of the Regional Watershed Alliance

TO: Chair and Members of the Regional Watershed Alliance
Wednesday, November 9, 2022 Meeting

FROM: Anil Wijesooriya, Director, Restoration and Infrastructure

RE: **NATURAL CHANNEL RESTORATION PROJECTS IN BRAMPTON**

KEY ISSUE

Report on natural channel restoration and Eco Park partnerships in Brampton, specifically the Jordan Jefferson Jayfield Parks (JJJ) Natural Channel Restoration Project and Eastbourne Park Natural Channel Restoration Project.

RECOMMENDATION:

THAT the report on Natural Channel Restoration Projects in Brampton and accompanying presentation, be received.

BACKGROUND

In previous decades, many watercourses in the Region of Peel were modified through channelization and various forms of armouring. A standard practice at the time, channelization and armouring was done to improve flood flow conveyance. The realignment (straightening) of watercourses accompanied filling within valleylands to facilitate development, a practice that is no longer permitted due to negative environmental impacts. Current knowledge has shown that channelization can increase the chances of downstream flooding and erosion (Villard, 2015). Moreover, channels that have been lined with concrete or other hard treatments have a limited ability to sustain ecological function or provide habitat for fish and wildlife. Many of these altered channels are now nearing the end of their operational life expectancy and are in varying states of disrepair. These channels are now contributing to erosion and streambank failure, which can raise the risk of local flooding and damage to adjacent properties and infrastructure.

Natural channel restoration involves the replacement of hardened channels through the construction of a natural watercourse that will facilitate water conveyance; improve flood storage; and provide habitat for fish and wildlife. Restoring hydrologic processes benefits nutrient and sediment transport, aquatic habitat, and riparian cover. Natural channel design principles typically include widening the floodplain where possible; re-establishing channel meanders with in-stream substrates; reconnecting the channel to its floodplain; planting riparian areas; and installing structural habitat using woody debris.

The Eco Park model, approved by Brampton Council in January 2020, is made up of a network of sustainable urban/green spaces, referred to as Eco-Spaces, that better integrate residents with the natural environment. Most of Brampton's 2500 hectares of Natural Heritage System (NHS) forms the backbone of Brampton's Eco Parks. From this foundation, Brampton Eco Parks will expand and evolve into city parks, streetscapes, and other spaces to eventually form a comprehensive green network. Eco Parks aim to foster local stewardship, encourage active communities, help build attractive neighbourhoods, and responsibly connect people with nature. Eco Parks will help protect and support City infrastructure while conserving, enhancing, and celebrating Brampton's natural landscapes.

Item 8.1

The Jefferson, Jordan and Jayfield Natural Channel Restoration Project, which will be completed in Spring 2023, is the first to include Eco Park principles into its design. Components of the work include removal of a concrete lined channel and drop structures; widening the floodplain; creating a meandering watercourse with in-stream habitat; constructing floodplain wetlands; and extensive tree and shrub plantings. Eco Park design principles include upgrades to park amenities with opportunities to view the restored watercourse.

Completed Work to date:

- Construction of 1000m of Natural Channel restoration including 150m of new trail alignment
- Eco Park amenities installed (Outdoor Amphitheatre, Outdoor Classroom, Log play structure, log benches and lookout areas)
- Trees Planted: 8,425 trees and shrubs, 360 calipers, 7000 bioengineering stakes

Work Remaining:

- Installation of Eco Park Fitness Stations by end of 2022
- Remaining tree and shrub and riparian plantings in Spring 2023

Implementation planning has started for Eastbourne Park Natural Channel Restoration Project. To date, a detailed design has been completed for a 1km stretch of concrete lined channel within Eastbourne Park. Construction is scheduled to start in Fall of 2022 following the completion of JJJ. A Community meeting occurred on October 26, 2022 to inform residents of plans in advance of construction.

RATIONALE

A report titled “Ten Year Strategic Plan for Urban Stream Restoration in City of Brampton” was produced by TRCA in 2018 at the request of the City of Brampton to identify and prioritize potential urban stream restoration projects. Previously completed studies including “Interim Report: Peel Channels Remediation Strategy” (2014); “Spring Creek Remediation Project Fluvial Geomorphological Characterization” (2015); and “Aquatic Habitat and Geomorphology Monitoring: Progress Report” (2018) have been used to guide the prioritization process. A list of five priority sites were identified where degraded concrete lined channels would benefit most from stream restoration, using the following criteria:

- TRCA’s Integrated Restoration Prioritization ranking;
- Infrastructure state of repair;
- Flood risk potential;
- access and available work areas; and
- fish and wildlife habitat gain potential.

Five priority sites were identified, which include:

- Jefferson Jordan and Jayfield Parks
- Eastbourne Park
- Fallingdale and Earnscliffe Park
- Donald M. Gordon Chinguacousy and Hilldale Parks
- Maitland and Hilldale Parks

All these sites have excellent potential to be employ Eco Park design principles as they are well used by residents and have trail and amenity infrastructure already existing that could be enhanced and expanded.

Item 8.1

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 4 – Create complete communities that integrate nature and the built environment

Strategy 7 – Build partnerships and new business models

FINANCIAL DETAILS

Funds for the projects were obtained through Peel capital budgets to complete the stream restoration components of the work. The Eco Park portion of the project was funded through a Fee for Service agreement with the City of Brampton.

DETAILS OF WORK TO BE DONE

The JJJ Natural Channel Project will be completed in Spring of 2023. Construction is scheduled to begin at Eastbourne Park in late fall 2022 and the project is scheduled for completion in Fall of 2024. TRCA will continue work with the City of Brampton to implement priority projects identified in “Ten Year Strategic Plan for Urban Stream Restoration in City of Brampton”.

Report prepared by: John Stille

Email: john.stille@trca.ca

For Information contact: Clifton Coppolino, (365) 566-2359

Email: clifton.coppolino@trca.ca

Date: October 24, 2022