

City of Markham Swan Lake

Shoreline Restoration Consulting Project, Community Meeting 2

April 26, 2022



Agenda

1. Introductions
2. Background – History of Swan Lake Planning
3. Objectives
4. Examples of Past Projects
5. Considerations
6. Feedback, Comments and Questions

Introductions

Activities to Date

In 2020, the City of Markham reached out to TRCA to provide a cost for a design to restore the Shoreline of Swan Lake

In 2021, TRCA entered into an agreement with the City of Markham to produce a conceptual shoreline restoration design for Swan Lake to address the following priorities:

- Invasive plant species management recommendation
- Identify shoreline restoration opportunities
- Recommendations for controlling access to the lake with formal lookouts

In 2022, TRCA and City of Markham held the first community consultation meeting (March 3rd) to present the proposed approach for the shoreline restoration plan.

Subsequently, TRCA completed detailed site investigations to document current impairments and restoration opportunities to further refine the conceptual shoreline restoration design.

Additional restoration opportunities have been identified beyond the scope of the current project, which can assist in overall park and lake improvements through future project and program delivery.

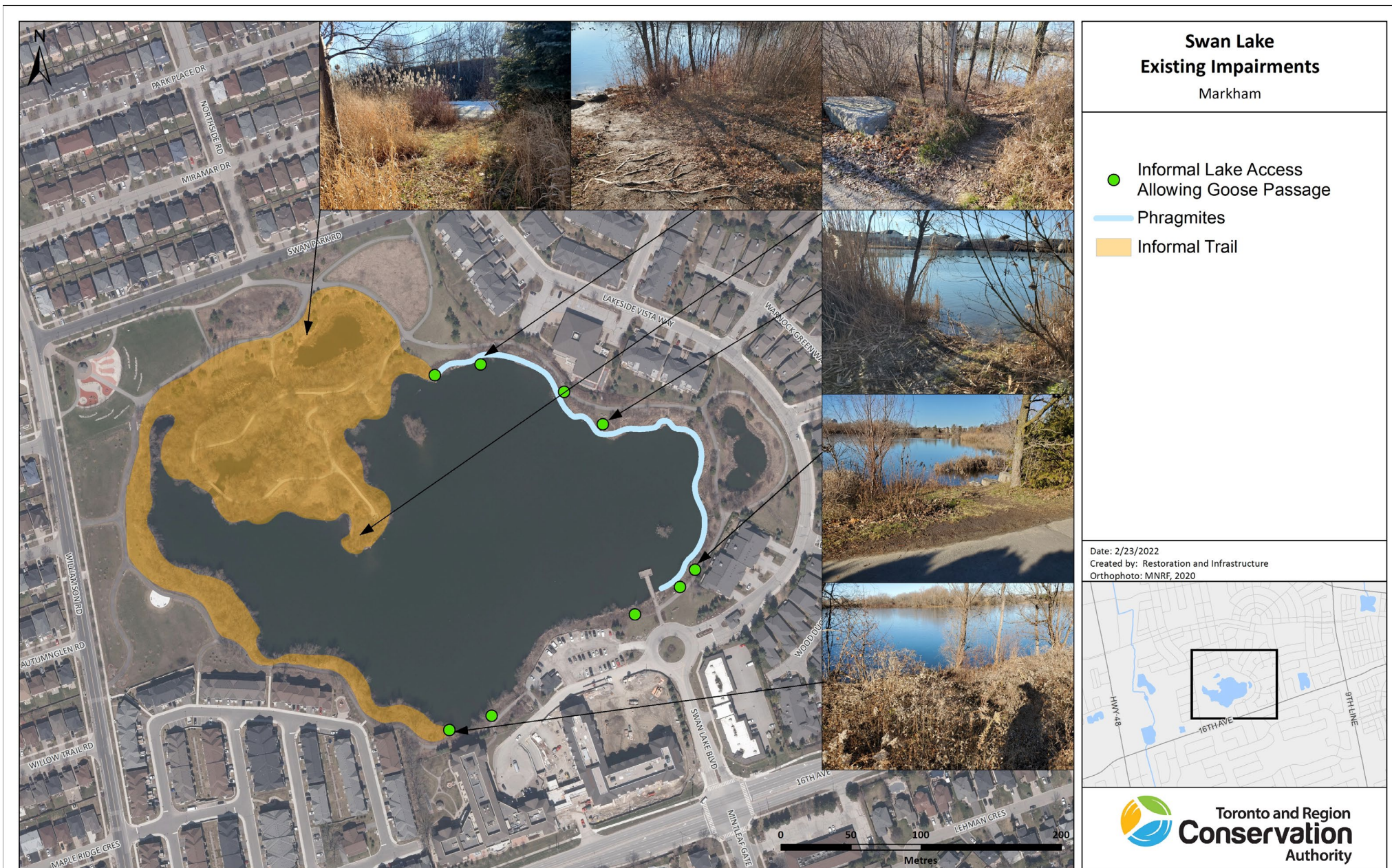
Objectives

- To provide an update on TRCA's restoration opportunities assessment
- To present the issues/challenges identified at Swan Lake
- To present opportunities for improvements to the shoreline
- To get feedback from the community on what is being proposed

A Need For Restoration – Priority Issues

- Invasive Species Management
- Shoreline degradation
 - Trampling from park users
 - Lack of emergent aquatic vegetation, terrestrial native plants/shrubs and shallow water habitat
- Controlling waterfowl access from water to land





**Swan Lake
Existing Impairments
Markham**

- Informal Lake Access
Allowing Goose Passage
- Phragmites
- Informal Trail

Date: 2/23/2022
 Created by: Restoration and Infrastructure
 Orthophoto: MNRF, 2020



Disclaimer: The data used to create this map was compiled from a variety of sources and dates. The TRCA takes no responsibility for errors or omissions. For further information about the data on this map, please contact the TRCA Restoration and Infrastructure Division, (416) 661-6600. May not be reproduced without permission. This is not a plan of survey. Produced by Toronto and Region Conservation Authority under licence with the Ministry of Natural Resources & Forestry. © Queen's Printer for Ontario

Restoration Goals

To Create a Diverse Naturalized Shoreline:

- Invasive Management
- Near shore/Shallow water habitat enhancements
- Riparian buffer
- Formalize access points to protect naturalized areas



Swan Lake

Restoration Opportunities Map

Markham, Rouge Watershed

- Legend**
- Recreation Node Opportunity
 - Viewing Node Retrofit
 - ▶▶▶ Precipitation Drainline
 - ~ Garbage Clean-Up
 - Invasive Management - Phragmites
 - Invasive Management - Dog Strangling Vine
 - BMP - Structure Removal
 - Forest
 - Shoreline Access Prevention
 - Green Infrastructure
 - Proposed Riparian
 - Aquatic Habitat and Emergent Zone
 - Expanded Shoreline Treatment
 - Marsh Wetland Enhancement
 - No Mow and Shrub Plantings
 - Sediment Check Dams
 - Wet Shrub Thicket

Date: 2022-04-21
 Created by: Restoration and Infrastructure
 Orthophoto: MNR, 2020





Swan Lake Restoration Priorities

Markham, Rouge Watershed

Legend

- Recreation Node Opportunity
- Viewing Node Retrofit

Priorities Projects

- Invasive Management - Phragmites
- Expanded Shoreline And Habitat Treatment
- Riparian
- Understory Planting

Date: 2022-04-25
Created by: Restoration and Infrastructure
Orthophoto: MNRF, 2020



Disclaimer: The data used to create this map was compiled from a variety of sources & dates. The TRCA takes no responsibility for errors or omissions in the data and retains the right to make changes & corrections at anytime without notice. For further information about the data on this map, please contact the TRCA Restoration and Infrastructure Division. (416) 661-6600. May not be reproduced without permission. This is not a plan of survey. Produced by Toronto and Region Conservation Authority under licence with the Ministry of Natural Resources & Forestry. © Queen's Printer for Ontario

Invasive Management: European Common Reed – Phragmites

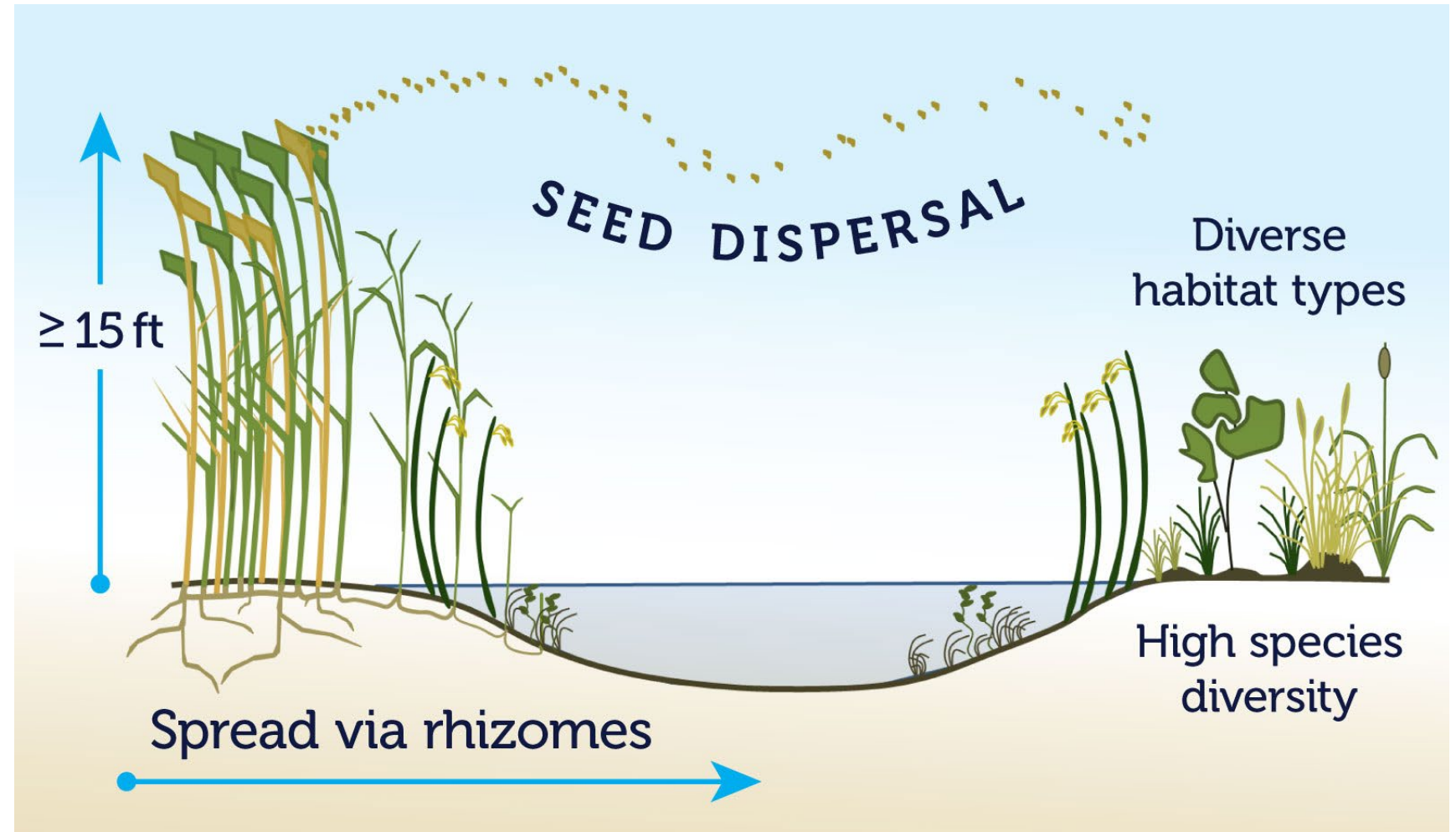
Why is it a problem?

- Out-competes all other plant species for water and nutrients
- Crowds out native vegetation, thus resulting in decreased plant biodiversity.
- Generally provides poor habitat and food supplies for wildlife.
- Increases fire hazards as stands are composed of a high percentage of dead stalks.
- Rigid and tough stalks reduce wildlife access and nesting ground
- Toxins from roots impedes growth, can kill neighbouring plants



How does it spread?

- Major spread vector are rhizomes
- Roads and associated drainage have increased the connectivity, resulting in increased transport of seeds and plant fragments
- Once established, VERY difficult to control spread



What can we do to control it?

- Planning needs to be carefully considered before moving ahead with best options for Swan Lake
- Best Treatment Options:
 - Multiple method treatments
 - Herbicide Applications
 - Cutting and disposal
 - Flooding
 - Spade
- Multiple year treatment
 - Plan for 2-4 years of management as seed and roots will continue to establish if remaining
- TRCA will be working closely with Markham and partners to work towards the best plan for managing phragmites within the site.



Success Stories – Tommy Thompson Park



Before



After

Success Stories – Tommy Thompson Park



Before



After

Non-Formal Access to Shoreline

Why is it a problem?

- shoreline trampling
- loss of vegetation
- loss of habitat along the shoreline
- creates access point for geese

What can we do to control it?

- close informal access to shoreline
- formalize viewing nodes with seating
- revegetate shoreline
- place woody structure along shoreline in-water



Naturalizing Informal Access Areas



Before



After

Recreational Viewing Nodes

Unwin Avenue,
Toronto Waterfront



Humber Bay Park West,
Toronto Waterfront



Lake Wilcox,
Richmond Hill



Degraded Shoreline

Why is it a problem?

- lack of riparian or in-water habitat
- lack of aquatic vegetation
- failing infrastructure

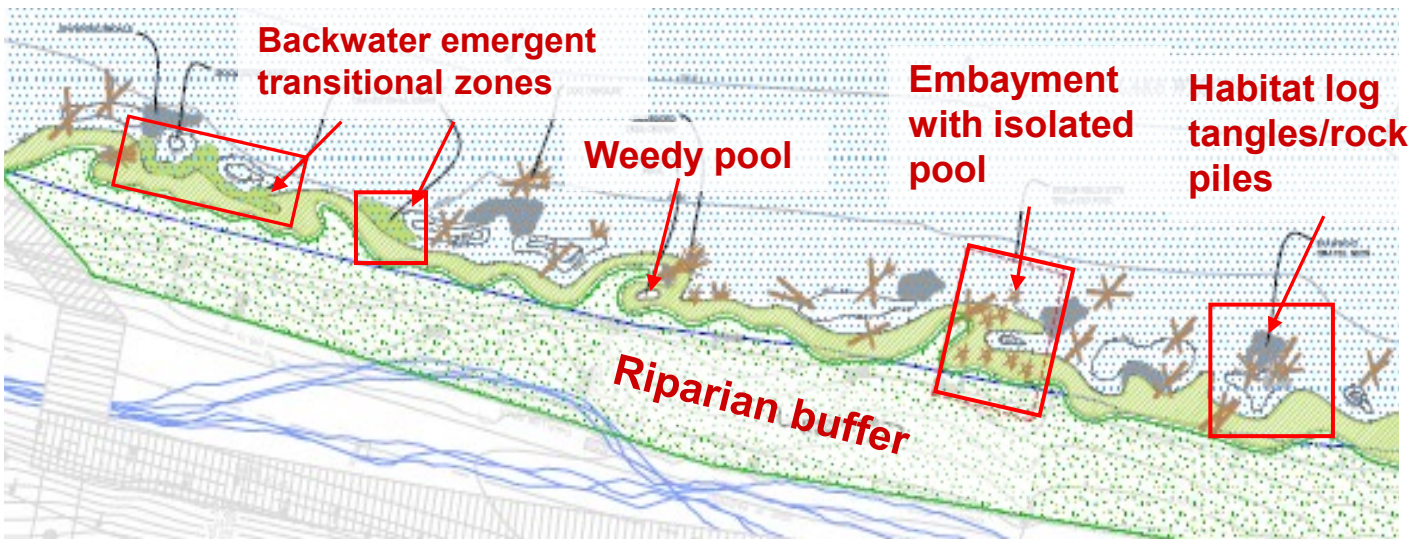
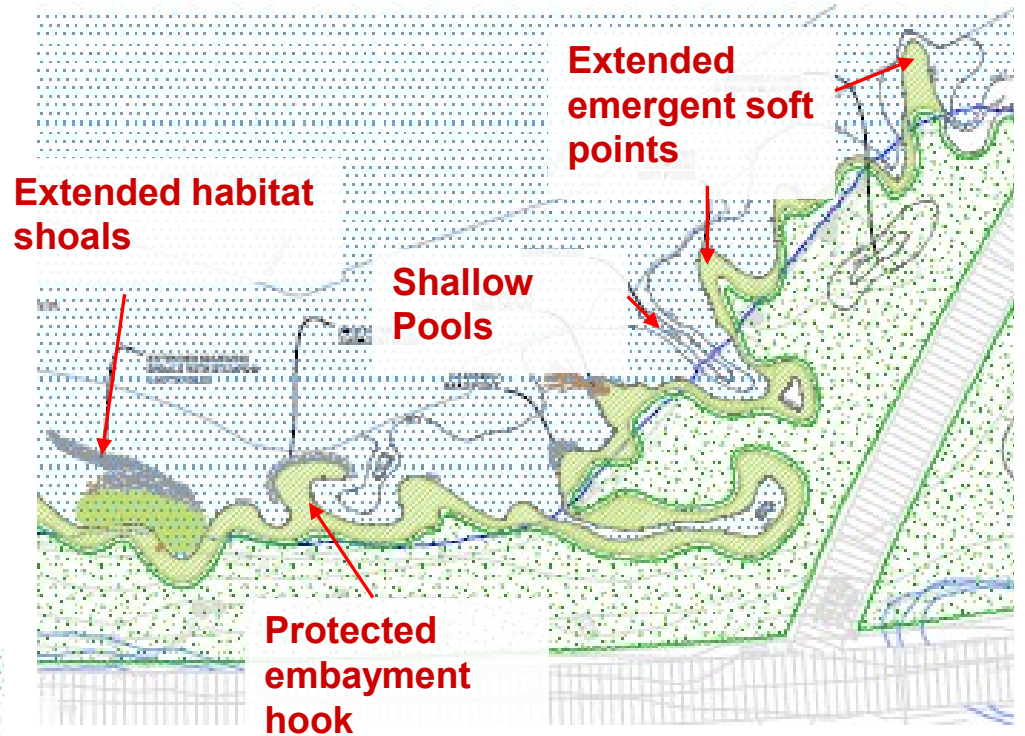
What can we do to control it?

- re-grade shoreline to promote in-water vegetation
- add woody structure in water for habitat
- plant along shoreline
- replace failing infrastructure with natural protection



Enhanced Shoreline Structures

Structural diversity to create differences in water levels, temperatures, species preference, while protecting the structural integrity and production of the shoreline



- Integrated channels
- Extending nodal shoals
- Isolated pools
- Protected shallow water zones

Restoring Degraded Shorelines

- Before



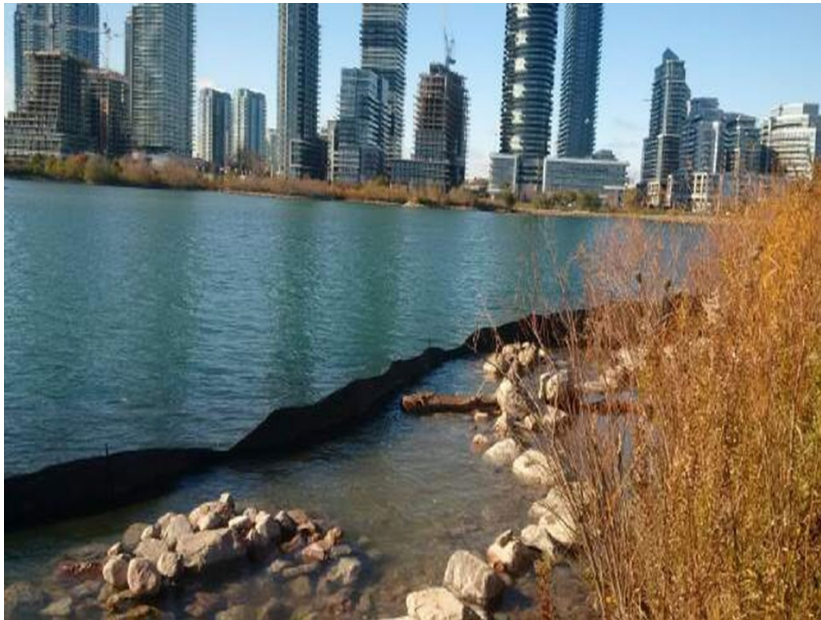
- After



Restoring Degraded Shorelines



Restoring Degraded Shorelines



What to expect during Construction...

Once the Shoreline Restoration Plan has been finalized. A detailed phasing plan can be developed to begin implementing the proposed work.

This will require construction activity and may result in temporary disruptions to portions of the park.

Some things to consider are:

- **IMPACT:** Loud noise (equipment)
- **MEASURE:** during working hours (adhere to by-laws)

- **IMPACT:** Dusty if warm and dry, Muddy if wet and cold, Entire construction area to be full of dirt, mud, and will remain until it greens up and is planted in the Fall.
- **MEASURE:** Add water to areas if too dry and dusty, mud on trails/roads will be cleaned daily.

- **IMPACT:** Traffic from large trucks and trailers delivering equipment and materials.
- **MEASURE:** Construction area will be cordoned off with perimeter fencing, Restricted entrance to shoreline construction area, Temporary road/trail closures for deliveries.

Next Steps

- Compile all public comments
- Develop a Draft Restoration Concept plan for Markham
- Receive comments from Markham
- Finalize Restoration Concept Plan
- Work with Markham to implement priority actions

Public Discussion

Public Discussion

Open discussion:

- Are there any initial thoughts on what is being proposed
- Are there any specific concerns?
- Site disturbances during construction
- Other...

Thank You

www.trca.ca

