

North Shore Trail Vegetation Management Plan Update

Public Information Centre

May 18 2022

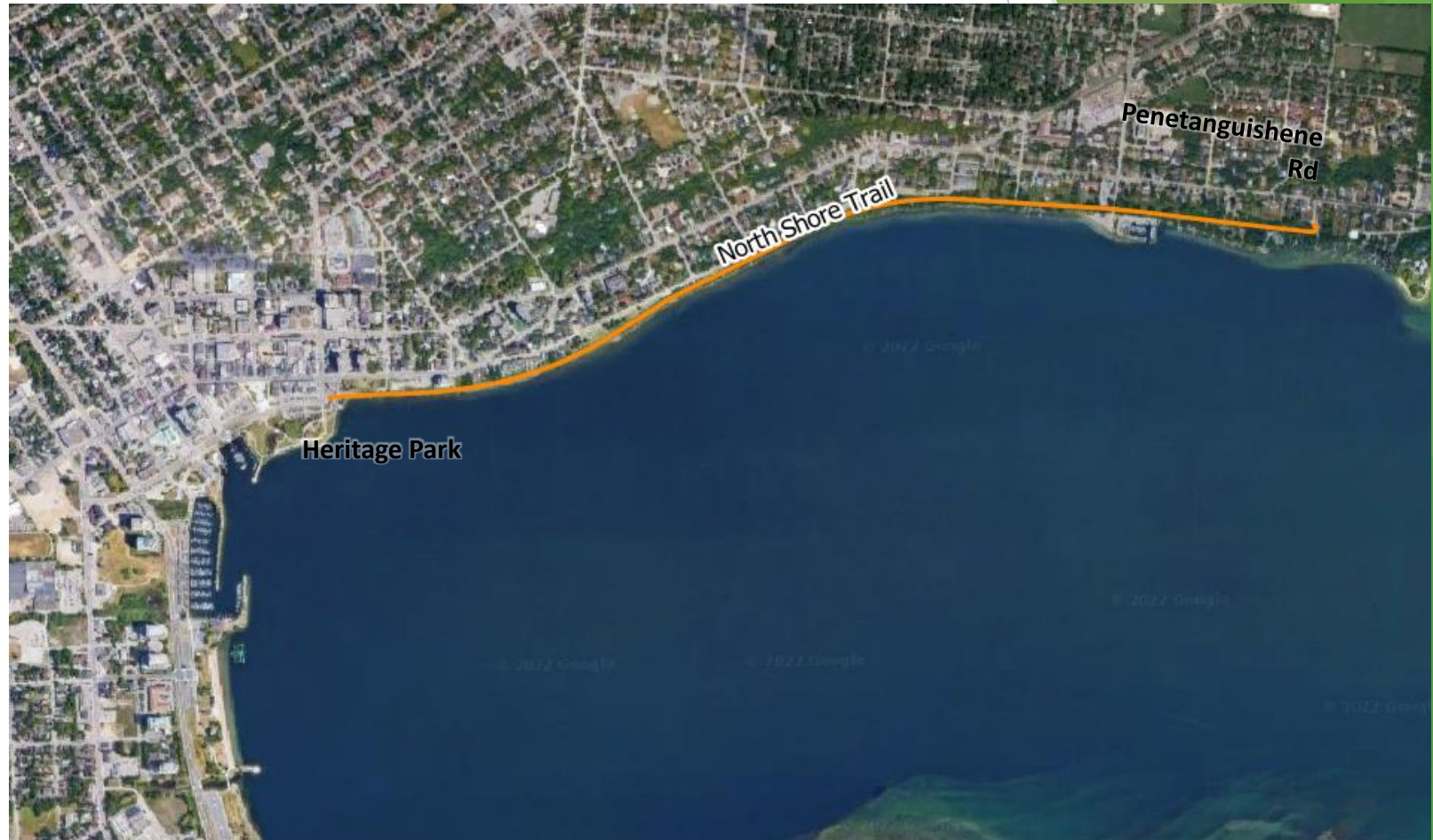


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Study Area

- ▶ 3 km limestone path along the north shore of Kempenfelt Bay in the east area of Barrie
- ▶ From Heritage Park to Penetanguishene Road
- ▶ Traverses through urban environments and natural features while acting as a buffer between Lake Simcoe and the City



Background of the North Shore Trail

- ▶ Constructed in 2002
- ▶ In early 2007 “Phase 1” for vegetation management was completed as part of a ‘Pilot Project’
- ▶ An updated Vegetation Management Plan was approved in 2009, now including “Phase 2 & 3” encompassing the entire length of the trail
- ▶ The 2009 Plan established guiding principles for maintenance activities
- ▶ An update was completed in 2011 to help Staff prioritize maintenance requirements and incorporate public feedback
- ▶ The update included a modified pruning width & highlighted many areas for the planting for native shrubs, perennials and wildflowers
- ▶ As vegetation matured and invasive species established a foothold, yearly maintenance activities have become more expensive and increasingly difficult to continue
- ▶ No update to the proposed maintenance activities has been completed since the 2011 update

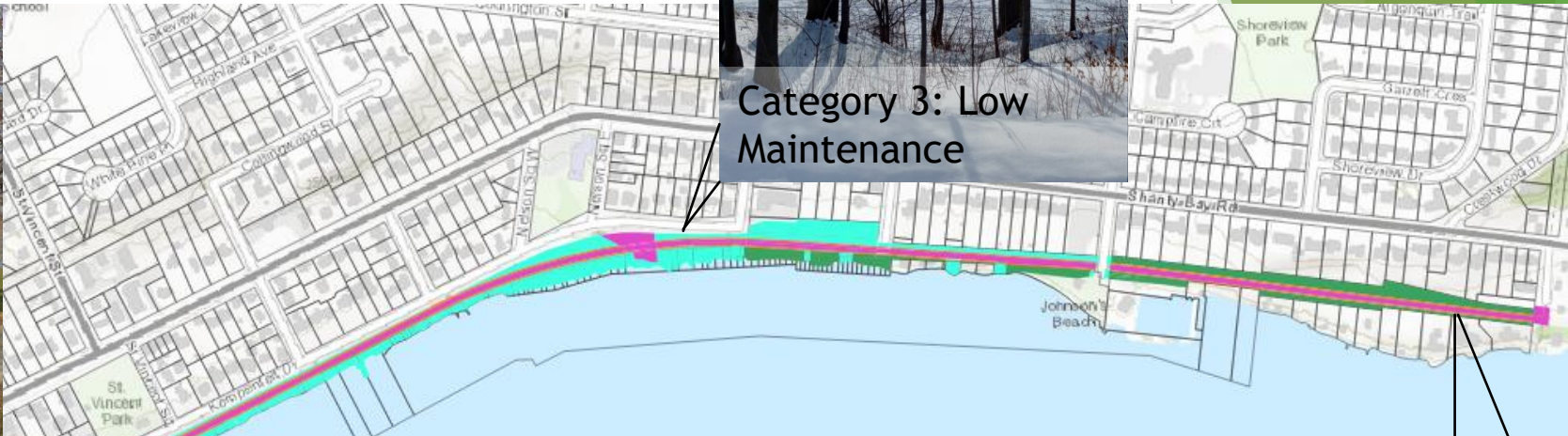
Study Purpose

- ▶ The Plan Update will establish standards for the maintenance of the trail and the trail experience for all Barrie residents, and establish methods to reduce erosion and protect the shoreline in the future
- ▶ This involves the following goals:
 - ▶ Provide recommendations to reduce on-going maintenance costs
 - ▶ Improve the health and diversity of the existing vegetative community
 - ▶ Control invasive species
 - ▶ Provide recommendations for the planting of new trees and shrubs to promote the return of natural vegetation communities & support bird and pollinator habitats
 - ▶ Provide recommendations for methods to reduce erosion and protect the shoreline in the future

Mission Statement

Enhance the North Shore Trail through the development of an updated Vegetation Management Plan, including policy recommendations, thereby increasing general trail satisfaction, addressing public feedback, and protecting and improving the health and diversity of the existing native vegetative community.

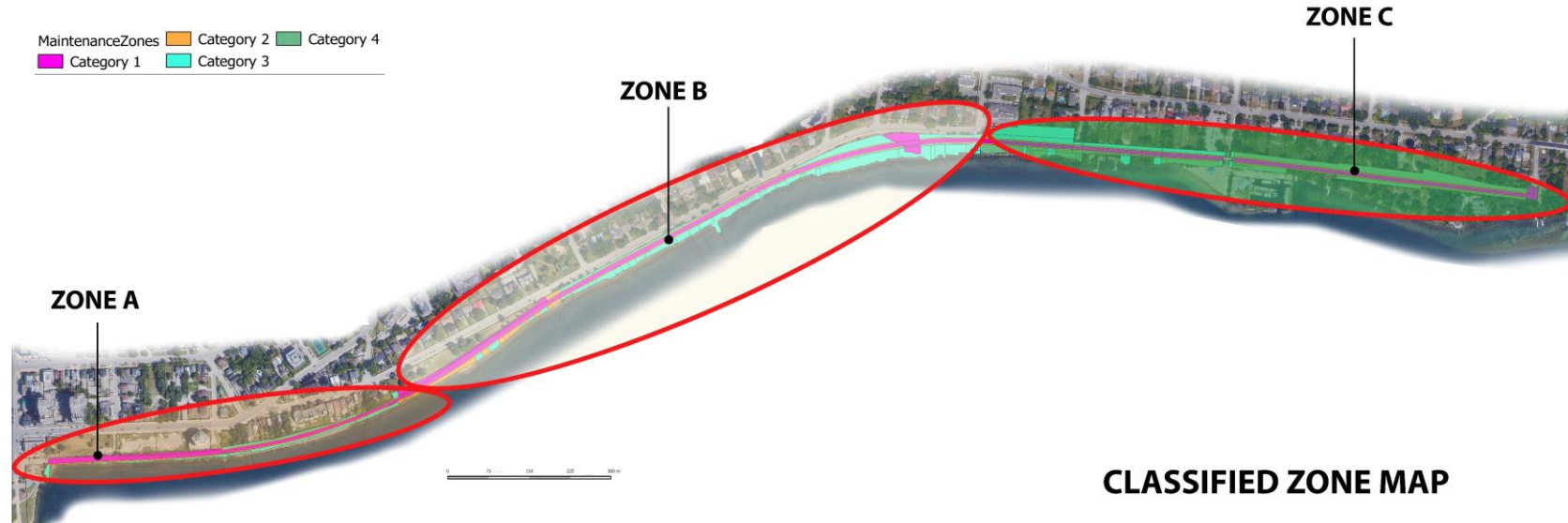
Existing Maintenance Program



Vegetation Inventory

► Vegetation and Maintenance can be split into 3 Zones:

- A: Highly Urbanized, sparse tree coverage
- B: Transition Zone, Public park or landscape strips covered by sumac thicket and groups of pioneer species (poplars, birch, willows)
- C: Forested Area, low human influence with dense scotch pine, white cedar or Oak deciduous forest



CLASSIFIED ZONE MAP

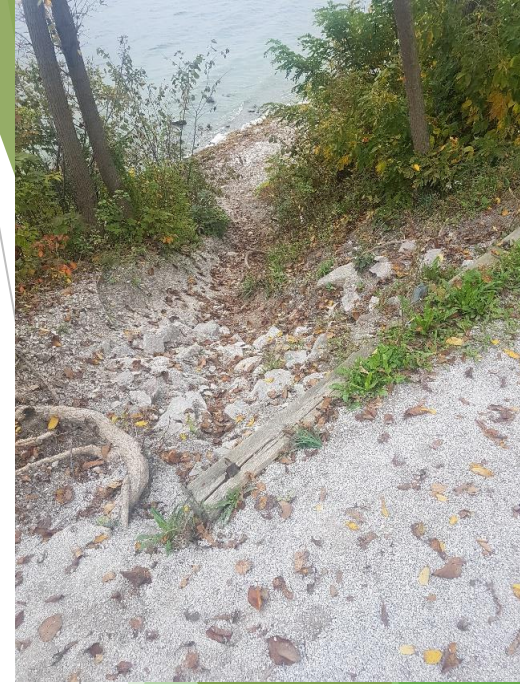
	Zone A	Zone B	Zone C
Primary ELC	Dry-Moist Old Field Meadow	Sumac Cultural Thicket	Dry-Fresh Oak-Hardwood Deciduous Forest
Secondary ELC	Sumac Cultural Thicket	Dry-Fresh White Pine-Oak Mixed Forest	Dry-Fresh Deciduous Forest Ecosite
Tertiary ELC	Anthropogenic	Dry-Fresh Oak-Red Maple Deciduous Forest	Dry-Fresh Poplar Mixed Forest

Invasive Species of Concern:

- Dog Strangling Vine
- Garlic Mustard
- Phragmites
- Black Locusts
- Sumac

Shoreline Erosion

- ▶ Several Areas experiencing moderate to severe erosion
- ▶ Caused by overland sheet flow overtopping the trail during precipitation events
 - ▶ Flow concentrates in low lying areas and erodes southern bank on its path toward the Lake
- ▶ Areas of concern have been addressed with armour stone or a wooden barrier, but erosion has continued
- ▶ Several locations further degraded due to public use where pathways are formed
 - ▶ In some locations footpaths have created a new path for sheet flow around current mitigation measures



Vegetation Management Alternatives

- ▶ Alternative #1: Do Nothing
 - ▶ Maintain Status Quo of the Trail
 - ▶ No upgrades, continue to use existing maintenance program
- ▶ Alternative #2: Site Specific Improvements Targeted Toward Future Vision
 - ▶ Development additional management options to address public comments/concerns & achieve a future vision for the trail
 - ▶ Reduce vegetation removal and maintenance to address concerns from Staff / Council and follow trend of increasing public consciousness of environmental concerns
 - ▶ Two options: a) Phased approach - complete improvements over 20 years, continue with yearly maintenance; b) Aggressive approach - complete improvements in 5 years, continue with reduced yearly maintenance

Recommended Vegetation Management Plan - Alternative 2

► Adapt the following key strategies:

- 1) Incorporate structural, functional, and genetic diversity into the North Shore Trail Forest system to build resilience in the face of climate change.
- 2) Develop partnerships with public and private landowners to create opportunities for urban forest programs on lands in or adjacent to the North Shore Trail boundary to respond to urbanization.
- 3) Provide proactive tree protection and restoration framework for tree maintenance and replacement standard to avoid urban forest coverage loss.
- 4) Establish specific and site-targeted measures for the different situations.

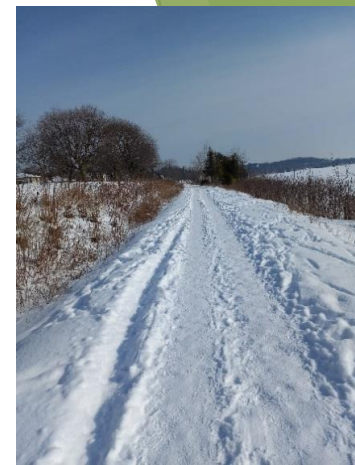
Maintenance Categories

- ▶ Urban Zone A: Sam Cancilla Park to West Kempenfelt Park (Maintenance Categories 1 & 2)
 - ▶ General maintenance of the trail corridor, including the removal of all trees, branches and/or shrubs within 1 metre horizontally and minimum 3.5 metres vertically from the trail surface;
 - ▶ Modified pruning and thinning width of an additional 2 metres along the trail where all small shrubs are removed or pruned to a height of less than 60 cm and trees pruned to a height of 2.5 metres for under canopy visibility;
 - ▶ Full removal of all non-natives, invasive vegetation;
 - ▶ Removal of dead, diseased or hazardous trees from the vicinity of the trail;
 - ▶ Creating a tree-lined promenade with the newly planted trees with 8- 10m spacing on the north side as the vegetation buffer. The trees selection is based on eco-physiological factors, practical, service-based, and aesthetic or cultural considerations;
 - ▶ Implement tree compensation for any tree to be removed at a replacement ratio 3:1 or to be determined by establishing Term of Reference for Tree Preservation;
 - ▶ Dense planting of low-growing shrubs or installation of managed turf



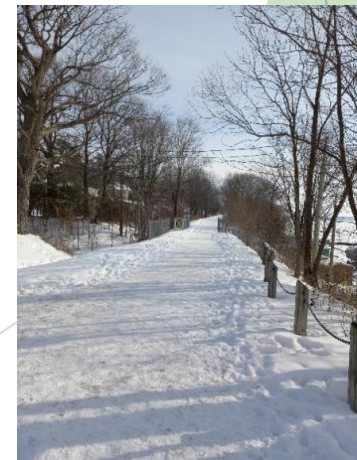
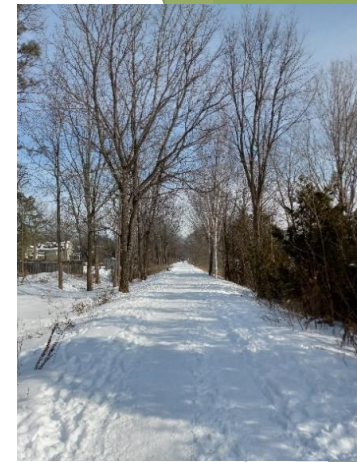
Maintenance Categories

- ▶ Transition Zone B: West Kempenfelt Park to Vancouver Street (Maintenance Categories 1,2 & 3)
 - ▶ General maintenance of the trail corridor, including the removal of all trees, branches and/or shrubs within 1 metre horizontally and minimum 2.5 metres vertically from the trail surface.
 - ▶ Removal of all non-natives, invasive vegetation;
 - ▶ Removal of dead, diseased or hazardous trees from the vicinity of the trail;
 - ▶ Adding and planting trees with a diversity of species with a recommended species list for forest restoration where required; The trees to be selected based on eco-physiological factors, practical, service-based, and aesthetic or cultural considerations;
 - ▶ Pruning, thinning or removal of small shrubs only to create, maintain or enhance views in a variety of options; filtered views, maintained openings and/or natural views



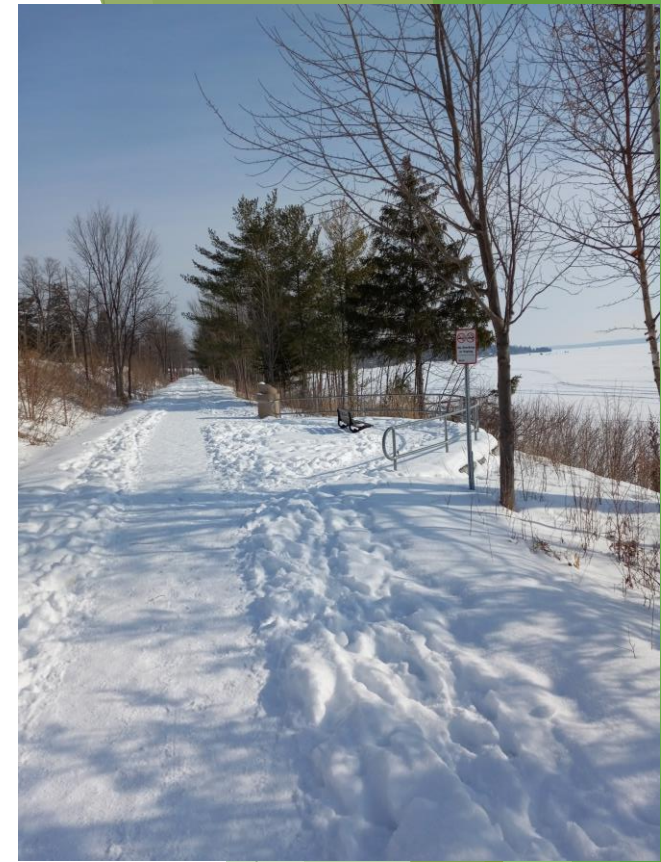
Maintenance Categories

- ▶ Forested Zone C: Vancouver Street to Penetanguishene Rd (Primarily Maintenance Category 4)
 - ▶ Removal of dead, diseased or hazardous trees from the vicinity of the trail;
 - ▶ Reducing vegetation maintenance and keep the state of nature undisturbed;
 - ▶ Prohibiting any unnecessary tree removals;
 - ▶ Pruning of trees and shrubs to provide minimum clearances from the trail surface for safe passage;
 - ▶ Removal of non-native/ invasive vegetation

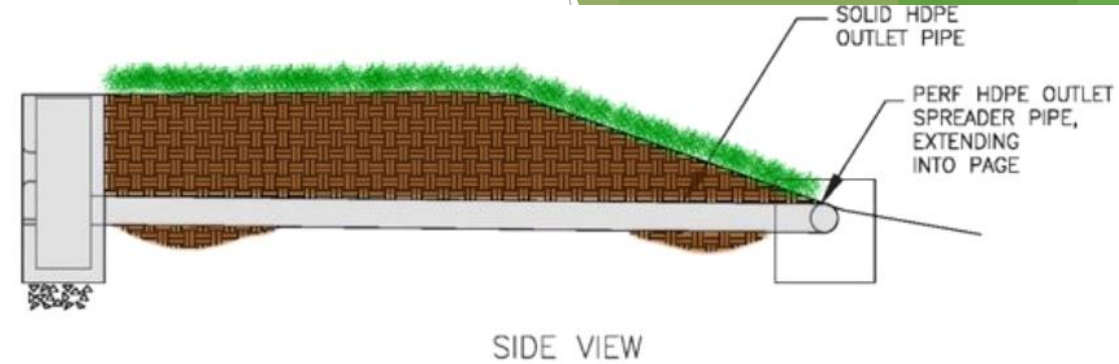


View Point Management

- ▶ Continue to maintain all existing Major Viewpoints
- ▶ Development of further access points to the shore addressed through erosion mitigation
- ▶ No additional major viewpoints recommended



Erosion Mitigation



- ▶ In order to reduce erosion, stormwater needs to be reduced from overtopping the trail / directed to specified reinforced locations
- ▶ Recommendations:
 - ▶ Construct a defined vegetated ditch system on the north side of the trail for collection to a specific discharge (low) point;
 - ▶ Install conveyance pipes (e.g. culvert) to convey collected stormwater under the trail and daylight on the south side with appropriate outfall protections i.e. 150mm dia. rip-rap;
 - ▶ Identify low areas of the trail for major overflow routes and enhance the southern slope with flow spreaders, rip rap, and/or reinforced vegetation as required;
 - ▶ Restore the southern bank of trail in select locations complete with Erosion Control Blankets (24-48 Month bio-degradable) and native vegetation; and,
 - ▶ Provide natural steps / pathways from trail down to lake to reduce foot traffic / trampled vegetation causing erosion *Based on the side slopes of the southern bank, a pathway with stairs to meet code and landings may be difficult and expensive.

Financial Considerations

- ▶ On-going maintenance per year is \$50k
- ▶ To continue to maintain the trail at existing levels will cost ~\$915k over the next 20 years (2022 dollars)
- ▶ 2 Options to Implement Alternative 2:
 - ▶ A) Phased Approach - Allocate 60% of yearly budget to suggested improvements, retain 40% for maintenance activities
 - ▶ B) Aggressive Approach - Complete all recommended upgrades in years 1-5 at higher capital cost, reduce maintenance budget for years 6-20

	Option 1 - Do Nothing	Option 2A - Phased Approach	Option 2B - Aggressive Approach
Initial Cost (years 1-5)	\$290K	\$287K	\$678K
Total Cost (years 1-20)	\$915K	\$928K	\$893K

Policy Recommendations

- ▶ Current Open Space land designation leaves protection and maintenance of trail open to general guidelines
- ▶ Environmental Protection may lend a more suitable land use designation to the trail
 - ▶ At minimum, changing the designation of the south side of the trail will limit encroachment of existing uses & promote natural heritage character of the area
 - ▶ Supported by Lake Simcoe Region Conservation Authority Policy
 - ▶ Trail corridor is within the LSRCA Regulated Area, which prohibits removal, alteration or disturbance of the trail, wildlife, or vegetation
- ▶ Amending the Land Use Category in the Official Plan from Open Space to Environmental Protection Zone reflects guiding principles in the Official Plan, LSRCA Policy and Barrie's Intensification Area Urban Design Guidelines

Final Recommendations

- ▶ That the City of Barrie Council adopt the Plan Update as described in the Final Report;
- ▶ That the North Shore Trail Corridor be maintained as an Urban Forest, promoting a healthy and diverse vegetative community;
- ▶ That a ditch system be constructed on the north side of the trail, with collections points that direct flow to the Lake with outfall enhancements on the southern bank;
- ▶ That natural steps / pathways be created from the trail to the Lake at designated locations; and,
- ▶ That the City re-visit the policy and zoning of the North Shore Trail Corridor such that it can be re-designated as an Environmental Protection for greater control

Thank You

- If there are any questions, please contact one of the representatives below:

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