
TO: GENERAL COMMITTEE

SUBJECT: NORTH SHORE TRAIL VEGETATION MANAGEMENT PLAN REVIEW

WARD: ALL

PREPARED BY AND KEY CONTACT: K. RANKIN, M.SC.F., R.P.F., MANAGER OF PARKS AND FORESTRY OPERATIONS, EXT. 4754

SUBMITTED BY: D. FRIARY, DIRECTOR OF OPERATIONS

GENERAL MANAGER APPROVAL: B. ARANIYASUNDARAN, P. ENG., PMP, GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH MANAGEMENT

CHIEF ADMINISTRATIVE OFFICER APPROVAL: M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That staff in the Operations Department implement the recommendations for vegetation maintenance improvements as described in paragraphs 13 and 14 of this report and further detailed in Appendix "A" – North Shore Trail Vegetation Management Plan Update attached to Staff Report OPR002-23.
2. That staff in the Development Services Department include the recommendations for shoreline erosion mitigation, including ditch outfall improvements in the proposed 2024 Capital Improvement Project for the North Shore Trail as described in paragraphs 16 and 17 of this report and further detailed in Appendix "A" – North Shore Trail Vegetation Management Plan Update attached to Staff Report OPR002-23.
3. That staff in the Development Services Department rezone the City owned lands along the North Shore of Lake Simcoe from Heritage Park to Penetanguishene Road to Greenspace with special provisions to restrict uses during the next comprehensive review of the Zoning By-law and that uses are to be restricted to compatible purposes such as passive recreation, erosion and sediment control, trails, lookouts, stairs, open air structures, public swim and/or fishing platforms.

PURPOSE & BACKGROUND

4. The North Shore Trail is a continuous 4-metre-wide limestone path constructed on the original rail bed extending from the foot of Mulcaster Street to the eastern City Limit at Penetanguishene Road. The 3km trail is the northern extension of Barrie's existing waterfront trail system and is part of the 150km of maintained trails throughout city parks and natural areas.
5. The North Shore Trail Vegetation Management Plan directs staff in the implementation of vegetation maintenance work along the trail system, including views from the trail. It is the only trail in Barrie with a specific vegetation management plan.
6. Vegetation management along the North Shore Trail commenced in 2007 and was reviewed and revised in 2009 and 2011. Guiding principles of the current North Shore Trail Vegetation Management Plan approved by Council in 2011 included:
 - i) Provide a balanced approach to naturalization and beautification (i.e. planting and plant removal).

- ii) Maintain uniqueness of North Shore due to diversified waterfront topography, native vegetation and adjacent land uses.
 - iii) Create visual interest, viewsheds and visibility.
 - iv) Maintain and enhance the natural quality of the waterfront (Barrie Official Plan).
 - v) Protect and enhance existing tree and shrub cover through naturalization and infill planting (Waterfront Master Plan).
 - vi) Use native plant materials wherever possible (City naturalization strategy).
7. Since 2012, the annual maintenance of the North Shore Trail vegetation using contracted services has cost between \$18,000 and \$66,000, with the average contract price being approximately \$30,000. Contracted services costs have significantly escalated in the past 2 contracts, approximately doubling the average cost of maintenance. In addition, surface maintenance (limestone screenings) and erosion mitigation work has averaged \$20,000 per year.
8. On November 30, 2020, City Council adopted Motion 20-G-215:
- “That that staff in the Operations and Development Services Departments undertake a review including public consultation and update the North Shore Trail Vegetation Management Plan in order to:
- 1. Improve the health and diversity of the existing vegetative community.
 - 2. Implement appropriate trimming, pruning and thinning of existing trees to create a vigorous tree cover over the long term.
 - 3. Remove invasive species such as garlic mustard, phragmites, and dog strangling vine and managing sumac, virginia creeper and other similar species.
 - 4. Create appropriate vistas to the waterfront.
 - 5. Plant new trees and shrubs in appropriate locations in order to enhance the vegetation community.
 - 6. Encourage the proliferation of plants that support pollinators and bird habitats.
 - 7. Reduce the amount of erosion at Kempenfelt Bay.
 - 8. Report back to General Committee with the updated North Shore Vegetation Plan. (Item for Discussion 8.2, November 30, 2020) Sponsor: Councillor, A. Kungl”
9. Since the opening of the North Shore Trail in 2002, it has experienced significantly high use and interest from residents using the trail and those living adjacent to it. There is a long history of disagreement between residents who prefer open views of the water and those who prefer a completely natural trail and shoreline. Vegetation management on the trail and shoreline has attempted to balance those competing interests over the past 20 years resulting in a decline of tree cover of approximately 10% since the implementation of the 2009 Vegetation Management Plan.

ANALYSIS

10. Greenland Group of Companies (Greenland) was hired to complete a thorough review of the current maintenance practices on the trail, an updated vegetation inventory, complete public consultation and develop recommendations for updating the Vegetation Management Plan. Direction was provided to focus on the eight items noted in Council Motion 20-G-215 including providing solutions to address these issues.
11. A virtual Public Information Centre (PIC) was held May 18, 2022 to present Greenland’s preliminary findings and recommendations. Discussions and questions during the PIC included the following topics; vegetation management, trail maintenance, erosion issues, by-law concerns related to tents, ecological concerns and trail usage. There were also a significant number of comments that were outside of the scope of the vegetation management review and as such were not addressed.

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12. In addition, a public questionnaire was included as part of the review (posted online from May 7 to June 5, 2022). A total of 74 responses were received to the survey and many direct emails were also provided on how to improve the maintenance of the trail which are included in Appendix C of Greenland's report (Appendix A). Based on the survey responses received, some key items were:
- i) 60% of respondents were from Ward 1, while the other 40% were relatively evenly split (3 to 10 respondents) among the other 9 wards.
 - ii) More than half of the respondents (45/74) used the trail during the winter months even though it is not maintained.
 - iii) Only 3 of 74 respondents noted that they 'never' use the eastern section of the trail from Johnson's Beach to Penetanguishene Road, and no single trail section was significantly more used than the rest.
 - iv) 77% of respondents were somewhat or extremely satisfied with trail maintenance over the last 2 years, while only 59% of respondents were somewhat or extremely satisfied with trail maintenance over the last 10 years. This indicates that the City has been improving their practices over recent years since the implementation of the Vegetation Management Plan Review in 2011.
 - v) Non-native species removal was ranked as the most important issue to respondents, followed by trail surface maintenance. Viewpoints and access points to the water were ranked the least important.
 - vi) 81% of respondents felt that any improvements should be completed in less than 5 years.
13. The following Vegetation Management Plan enhancements were proposed by Greenland (see Appendix A for full Report):
- i) That the North Shore Trail Corridor be maintained as an Urban Forest, promoting a healthy and diverse vegetative community, including improvements in administrative processes, site assessments, tree planting and establishment and tree maintenance and monitoring. The following strategies are recommended:
 - a) Incorporate structural, functional, and genetic diversity into the North Shore Trail Forest system to build resilience in the face of climate change.
 - b) 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.
 - c) Provide proactive tree protection and restoration framework for tree maintenance and replacement standard to avoid urban forest coverage loss.
 - d) Establish specific and site-targeted measures for the different situations.
 - ii) That a ditch system be constructed on the north side of the trail, with collection points that direct flow to the Lake with outfall enhancements on the southern bank;
 - iii) That natural steps / pathways be created from the trail to the Lake at designated locations; and,
 - iv) That the City re-visit the policy and zoning of the North Shore Trail Corridor such that it can be redesignated as an Environmental Protection for greater control.
14. Greenland also recommended simplification of the maintenance areas into three distinct categories based on the existing site conditions. The three areas and associated maintenance strategies include the following:

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- i) High Urbanized Area Zone A from Sam Cancilla Park to the west edge of Kempenfelt Park, where the trail with sparse tree coverage is pressured by urban development and private properties. Proposed maintenance includes:
- a) 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;
 - b) 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;
 - c) Full removal of all non-native, invasive vegetation;
 - d) Removal of dead, diseased or hazardous trees from the vicinity of the trail;
 - e) 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;
 - f) Implement tree compensation (on the North Shore Trail) for any tree to be removed at a replacement ratio of 1:1 or to be determined by establishing Term of Reference for Tree Preservation;
 - g) Dense planting of low-growing shrubs or installation of managed turf;
 - h) Turf to be managed as a major waterfront park as defined in Management Category 1, of the Pesticide Use Policy;
 - i) Maintenance of the trail and existing viewpoints as identified within the North Shore Trail Master Plan (Final Concept: Multi-Use Trail, May 2002).
- ii) Transition Area Zone B from Kempenfelt Park to Vancouver Street, where the trail along Kempenfelt Drive is separated with public park or landscape strips covered by sumac thicket and some pioneer species (poplars, birches, and willows). Proposed Maintenance includes:
- a) 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.
 - b) Removal of all non-native, invasive vegetation;
 - c) Removal of dead, diseased or hazardous trees from the vicinity of the trail;
 - d) 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;
 - e) 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.
- iii) Forested Area Zone C from Vancouver Street to Penetanguishene Road, an area with less human-influenced landscape and includes dense Scotch Pine, White Cedar or Oak deciduous forest. The proposed maintenance of this zone is:
- a) Removal of dead, diseased or hazardous trees from the vicinity of the trail;
 - b) Reducing vegetation maintenance and keep the state of nature undisturbed;
 - c) Prohibiting any unnecessary tree removals;
 - d) Pruning of trees and shrubs to provide minimum clearances from the trail surface for safe passage;
 - e) Removal of non-native, invasive vegetation.
15. It is recommended to continue to maintain all major lookouts identified in the North Shore Trail Master Plan. No further lookouts are suggested to prevent urbanization of the trail. Existing

maintained viewpoints, openings and natural views are recommended to continue to be maintained along the south side of the trail.

16. Several erosion mitigation measures are proposed in Section 7 of the attached report (Appendix A) to address erosion along the slopes of the trail and address pedestrian access to the water. The estimated one-time capital cost of all recommended erosion control measures and natural steps/water access was \$408,000 (Table 8-1 of attached Report) with alternatives proposed on how to phase the recommended improvements. For cost efficiency and reduced construction impact on trail users, implementation of this work should be designed and included with the future access improvement capital project. The North Shore access improvement project is planned to commence in 2024 pending Council approval in the 2023 Business Plan.
17. Implementation of erosion mitigation measures (para 14) as part of a capital improvement project would allow Operations staff to focus on vegetation maintenance, tree and shrub planting, locating and removing non-native invasive species and supporting volunteer groups / adopt-a-trail group. Based on 2020 and 2022 contract prices, the existing \$30,000 Operating Budget for vegetation management (pruning and invasive species removal) will need to be adjusted within future Business Plans to complete the proposed vegetation maintenance strategies.

ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS

18. Trees and healthy shorelines provide many valued environmental benefits and services to the community including:
 - i) Mitigating the effects of Climate Change.
 - ii) Reduction in heat island effect resulting in lower energy consumption in the summer.
 - iii) Reduction in winter winds resulting in lower energy consumption in the winter.
 - iv) Sequestering of greenhouse gases in trees.
 - v) Stabilization of slopes and natural areas.
 - vi) Provision of wildlife habitat.
 - vii) Interception and absorption of rainfall and surface water flows, improving the water cycle.

ALTERNATIVES

19. There are several alternatives available for consideration by General Committee, including but not limited to:

Alternative #1: General Committee could alter the proposed recommendation by directing staff to maintain the status quo and not implement the recommendations within the 'North Shore Trail Vegetation Management Plan Update' (Appendix A).

This alternative is not recommended as it would not address the concerns and issues related to annual maintenance, shoreline erosion and reduction in natural tree canopy along the North Shore Trail.

Alternative #2: General Committee could alter the proposed recommendation by directing staff to implement the shoreline erosion and natural access improvements over 20 years, rather than in one coordinated capital project.

This alternative is not recommended as the 20-year cost of implementing shoreline erosion mitigation annually would be significantly higher than a single coordinated project. In addition, vegetation management along the shoreline and edge of the trail will continue to escalate in costs if erosion continues to worsen resulting in direct, negative impacts to the shore of Lake Simcoe.

FINANCIAL

20. The recommended alternative would result in an additional \$408,000 within the Capital Intake Form for the single coordinated capital project that includes shoreline erosion mitigation, the improved and accessible connections to the Northshore Trail, public amenities, Kempenfelt Drive multi-use asphalt trail improvements, and the water access points.
21. The recommended alternative would direct staff to increase the annual Operating Budget for vegetation management from \$30,000 to \$50,000.
22. Once the capital shoreline and erosion mitigation is completed, the recommended alternative would result in a future decrease in the operating costs of maintaining the North Shore Trail by reducing the cost of erosion mitigation and revegetation. Post-implementation of the Capital Improvement project (para. 20), the shoreline improvements would result in annual Operating Budget savings of \$10,000 from Shoreline Protection (1267-540500) and \$10,000 from the North Shore Trail Rehabilitation budget (1267-675600).

LINKAGE TO COUNCIL STRATEGIC PRIORITIES

23. The recommendation included in this Staff Report support the following goals identified in the 2022-2026 Council Priorities:
 - Infrastructure Investments - Implement climate action plans
 - Thriving Community – Expand and maximize access to parks and recreation opportunities

Goal 5 of the Climate Change Adaption Strategy is to “Protect Biodiversity and Enhance Ecosystem Functions” which include several related actions to improve green infrastructure, remove invasive species, reduce erosion risk, shoreline health, and promote native vegetation and biodiversity.



APPENDIX "A"

Attachment Report – North Shore Trail Vegetation Management Update