



North Halton Coordinated EA – James Snow Parkway Improvements

Preliminary Tree Inventory Report

Prepared for:

HDR Inc.,
100 York Blvd, Suite 300,
Richmond Hill, ON,
L4B 1J8

Project No. 3082 | July 2025



NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

North Halton Coordinated EA – James Snow Parkway Improvements

Preliminary Tree Inventory Report

Project Team

Ryan Archer	Senior Biologist, Project Manager
Jeremy Bannon	Terrestrial and Wetland Biologist/Certified Arborist, Component Advisor
Madison Postma	Registered Professional Forester, Component Manager
Gerry Schaus	GIS Specialist

Report submitted on July 16, 2025



Madison Postma, M.F.C., R.P.F.
Registered Professional Forester

Table of Contents

1.0	Introduction	1
2.0	Tree Inventory and Methodology	2
3.0	Summary of Tree Inventory Findings.....	4
4.0	Preliminary Tree Removal and Retention Analysis.....	5
4.1	Impacts Beyond the Scope of Tree Inventory	6
5.0	Preliminary Tree Compensation Plan	7
6.0	Tree Protection Measures and Recommended Mitigation.....	10
6.1	Prior to Construction	10
6.1.1	Timing Windows	11
6.2	During Construction.....	11
6.3	Post-Construction	12
7.0	Summary.....	13
8.0	References.....	15

List of Tables

Table 1. Retention and Removal Analysis.....	5
Table 2: Preliminary Tree Compensation	7

List of Appendices (Available Upon Request)

Appendix I Tree Inventory Data

Appendix II Tree Health and Potential for Structural Failure Assessment Criteria

Appendix III Conditions of Tree Assessment

Appendix IV Tree Data and Summary Tables

Maps (Available Upon Request)

Map 1. Study Area

Map 2a-2e. James Snow Parkway Tree Inventory

1.0 Introduction

Natural Resource Solutions Inc. (NRSI) was retained by HDR Inc., on behalf of Halton Region, to complete a Preliminary Tree Inventory Report (TIR) for the proposed road improvements to James Snow Parkway between Britannia Road and just south of Highway 401 in the Town of Milton (Map 1). The TIR informs the Municipal Class Environmental Assessment (MCEA) and Preliminary Design for these improvements, completed as part of the larger North Halton Coordinated MCEA for transportation corridor improvements of three regional roads: Regional Road 25, James Snow Parkway, and Steeles Avenue. Preliminary TIRs for Regional Road 25 and Steeles Avenues have been prepared under separate covers (NRSI 2025a, 2025b).

For the purpose of this report, the “study area” refers to lands within 120m of James Snow Parkway within the study limits (Map 1), which aligns with the Natural Heritage Assessment. This TIR addresses lands within 6m of the roadway. The study area currently consists of residential, industrial, natural, and other developed areas. Within the study area are components of the Regional Natural Heritage System, including a crossing of the Middle Sixteen Mile Creek Tributary, regionally significant woodlands, and wetlands.

This report has been prepared with consideration of the policies of the Halton Region’s Official Plan (2024), which is now regulated as a local plan by the Town of Milton, as well as the Regional Road Landscaping Guidelines and Specifications (2018), and Tree Canopy Replacement Policy on Regionally Owned Lands (Report No. LPS31-08, 2008). The Regional Municipality of Halton’s Tree By-law No 121-05 (2006) exempts activities undertaken by the municipality and is thus not applicable to this TIR.

The following report has been prepared based on the Preliminary Design and grading plans provided by HDR Inc. dated December, 2024. The report summarizes the following:

- Findings of the tree inventory;
- Assessment of overall health and potential for structural failure of inventoried trees;
- Preliminary tree retention analysis based on details of the proposed development plan;
- Protection measures for trees to be retained; and
- Recommended mitigation and compensation considerations.

2.0 Tree Inventory and Methodology

A comprehensive inventory of trees $\geq 10\text{cm}$ in Diameter at Breast Height (DBH) along James Snow Parkway, between Britannia Road and just south of Highway 401, was completed by NRSI Certified Arborists and Registered Professional Foresters on June 1 and 14, 2023. As Right-of-Way (ROW) survey data was not yet available, the tree inventory effort included all trees within 6m of the existing road edge. Trees located on private properties, with the potential to be impacted by the development were assessed from the property boundary. This inventory will be updated at the Detailed Design stage based on the refined proposed grading and development limits.

Individual trees $\geq 10\text{cm}$ in DBH were assigned an alphanumeric-identifier. Tree ownership was determined conservatively through desktop analysis based on the ROW limit provided by HDR Inc. (December 2024). Where trees are in close proximity to the ROW limit, confirmation of tree ownership may be necessary at a later stage, where required. The location of inventoried trees was surveyed using an SXBlue II GNSS GPS unit, as shown on Maps 2a-2e.

The following information was recorded for inventoried trees:

- Tree location;
- Tag number/alphanumeric identifier;
- Species (common and scientific name);
- DBH (cm);
- Number of stems;
- Crown radius (metres);
- General health (excellent, good, fair, poor, very poor, snag);
- Potential for structural failure (Improbable, Possible, Probable, Imminent); and
- General comments (i.e., disease, aesthetic quality, development constraints, prune to reduce structural failure, sensitivity to development, etc.).

The overall health of each tree and potential for structural failure was assessed based on the criteria outlined in Appendix II (Dunster 2009, Dunster et al. 2013). In carrying out these assessments, NRSI has exercised a reasonable standard of care, skill and diligence as would be customarily and normally provided in carrying out these assessments. The assessments have been made using accepted arboricultural techniques. These include a visual examination of each tree for structural defects, scars, external indications of decay such as fungal fruiting

bodies, evidence of insect attack, the condition of any visible root structures, the degree and direction of lean (if any), the general condition of the tree(s) and the surrounding site, and the current or planned proximity of property and people. None of the trees examined were dissected, cored, probed or climbed and detailed root examinations involving excavation were not undertaken. The conditions for this assessment, including restrictions, professional responsibility and third-party liability can be found in Appendix III.

3.0 Summary of Tree Inventory Findings

In total, 182 trees were inventoried in 2023, comprising 28 species. Of the trees inventoried, 144 (79%) are native species and 38 (21%) are non-native species. The most common species was White Spruce (*Picea glauca*), comprising 33.5% of all inventoried trees. The majority of trees are in fair or good condition and have an improbable likelihood of failure. A complete list of inventoried trees is provided in Appendix I and tree locations are shown in Maps 2a-2e.

Appendix I provides a list of inventoried trees, whether they are native or non-native, overall health, and potential for structural failure. A summary of the overall health of inventoried trees, along with their potential for structural failure can also be found in Appendix IV.

4.0 Preliminary Tree Removal and Retention Analysis

The tree removal and retention analysis in this report is considered preliminary and is based on the following considerations:

1. Trees identified as having a probable or imminent potential for structural failure or poor to very poor health, or confirmed dead. Removal may be recommended for safety, especially if they are located within striking distance of a component of the proposed project or existing infrastructure.
2. Trees that require removal based on the proposed ROW grading, servicing, or final road footprint.

Of the 182 trees inventoried, 76 would require removal under the existing plans. Many of these trees are in direct conflict with the proposed road construction, or are situated in close proximity to the grading limit and would incur severe root damage as a result of grading.

Table 1 provides a breakdown of the preliminary recommended actions. Appendix I includes a list of inventoried trees, overall health, potential for structural failure, and rationale for removal. Trees are shown on Map 2a-2e, along with their crown radius and Tree Protection Zone (TPZ) distance. The following categories were included in the analysis:

- Retain;
- Retain / Impact; and
- Remove.

Table 1. Retention and Removal Analysis

Proposed Action	Total
Total Trees to be Removed	76
Retain	105
Retain / Impact	1
Total Trees to be Retained	106
Total Number of Trees Inventoried	182

Of the 76 trees proposed for removal, 33 are considered boundary or off-property (outside of ROW) trees. If the main stem of any tree is located on multiple properties, all owners of those properties must be consulted before any tree removal occurs. Removal of any boundary or off-property trees will require the permission of all owners involved, as indicated in the *Forestry Act* (1990). NRSI is not aware of receipt of approval for these removals at this time, and our recommendation for removal should not be inferred to reflect any approval from any parties.

Some naturalized areas contained dead or dying trees, which will be left standing as valuable wildlife habitat. Where dead or dying trees are in proximity to development, the tree may be topped or delimbed while retaining the trunk. These snags should be clearly marked by a Certified Arborist before topping.

Additional trees <10cm DBH may require removal due to conflicts with the proposed undertaking, but these smaller trees were outside the scope of the inventory and are not addressed in this report. Since forestry tags were not used in this inventory, trees should be clearly marked by a Certified Arborist prior to removal.

4.1 Impacts Beyond the Scope of Tree Inventory

The tree inventory was conducted prior to the development of the road Preliminary Design, which occurred in early 2025. Through the subsequent completion of the Preliminary Design, road improvement works are now expected to extend farther from the existing ROW boundary in some locations, such as where a widened ROW is proposed. Additional tree inventory work will be required at the Detailed Design stage in order to update and refine the inventory presented in this report, to fully assess impacts to trees in these areas.

5.0 Preliminary Tree Compensation Plan

The Regional Municipality of Halton's Tree By-law (121-05) exempts activities or matters undertaken by a municipality from the requirement for a tree removal permit. However, it is required that in the interest of preserving the urban canopy, efforts be made to plant new trees to compensate for the proposed tree removals. Section 147.6.b) of the Halton Region Official Plan (2024), which is now regulated as a local plan by the Town of Milton, states that it is the policy of the Region to “*retain treescapes along major transportation corridors, replace trees cut down for public works and, wherever possible, develop new treescapes consistent with safe and aesthetically pleasing road or corridor design.*”

To determine the number of required compensation trees, the Canopy Replacement Schedule from the Tree Canopy Replacement Policy on Regionally-Owned Lands (LPS31-08) (Halton Region 2008) was used. Table 2 outlines the Region of Halton compensation requirements, the number of trees requiring replacement and the proposed number of replacement trees. To determine compensation requirements for multi-stemmed trees, the DBH of the largest stem was used. Three dead trees proposed for removal were excluded from compensation calculations.

Table 2: Preliminary Tree Compensation

DBH Category	# of Trees	Compensation Method	Compensation Total
Deciduous Trees			
Less than 10cm DBH	N/A	1:1	N/A
10cm – 15cm DBH	21	2:1	42
16cm – 20cm DBH	8	3:1	24
21cm – 25cm DBH	3	4:1	12
>25cm DBH	5 (229cm DBH total)	Equivalent of 6cm caliper trees or greater needed to equal diameter of the tree removed	38
Coniferous Trees			
<20cm DBH	34	2:1 200cm (in height) conifer trees	68
≥20cm DBH	2	4:1 200cm (in height) conifer trees	8
Total	73		192

It is noted that trees proposed to be retained that may be impacted by the roadways may also require compensation. Additionally, portions of wooded features proposed for removal is to be compensated for with an area-based ratio. The above tree compensation summary will be

updated through completion of the supplementary tree inventory work, and updated tree removal/retention analysis, that is to be completed during the Detailed Design phase.

Tree compensation plantings should be installed within the James Snow Parkway ROW to the extent possible. The Tree Canopy Replacement Policy on Regionally-Owned Lands (Halton Region 2008) also indicates that where there is no opportunity to plant on-site, cash-in-lieu payments are permissible, *“in accordance with the International Society of Arboriculture Standards for tree replacement value, payable to the Halton Region Green Fund.”*

Species used for compensation plantings, with the exception of street trees, should be native to the Halton Region. The use of non-native species that are tolerant of urban conditions (i.e. salt and drought tolerant) may be suitable for planting outside of natural areas, provided they do not include invasive species such as, but not limited to, Norway Maple (*Acer platanoides*) or Sweet Cherry (*Prunus avium*). A list of recommended plant material can be found in Appendix C of the Halton Region Regional Road Landscaping Guidelines and Specifications (2018).

The following will be considered during development of the planting/landscape plan:

- Plantings limited to non-invasive tree and shrub species that complement the surrounding natural features;
- A variety of species should be identified on the landscape plans so as to avoid a monoculture;
- No more than 10% of any one species and 20% of any one genus;
- Where applicable, the outer extents of any natural feature buffers or boundary between buffers and development area should be comprised of a mix of native tree and shrub species in an attempt to naturalize the area, increase presence of native species, provide wildlife habitat and protect from adjacent development encroachment (i.e., human foot traffic, dumping);
- Tree and shrub species to be situated in close proximity to roads should be salt and drought tolerant;
- Avoid ash (*Fraxinus* spp.) species due to the risk of the Emerald Ash Borer (*Agrilus planipennis*);
- All plant material is to conform to the latest edition of the Canadian Nursery Trades Association Specifications and Standards;

- Plantings installed as per specifications outlined in planting plans to be prepared by an OALA or Certified Arborist;
- Spacing of plant material should account for the ultimate size and form of the selected species and also the purpose of the planting, whether it be for screening, shade, naturalizing, rehabilitation, etc.;
- Special attention to location and height of trees in proximity to utilities and buildings, and;
- Ensure sufficient soil volume for all plantings.

6.0 Tree Protection Measures and Recommended Mitigation

Throughout all stages of development, efforts should be made to protect the health and root systems of trees that are marked for retention. The Region or their designate (e.g., construction inspector or site manager) should ensure that all employees and contractors are informed of the meaning and importance of tree protection measures and the ways in which trees to be retained are identified. The locations of Tree Protection Fencing (TPF) and other tree protection specifications will be provided at the Detailed Design stage.

6.1 Prior to Construction

Tree Protection Fencing (TPF) will be required along the limit of disturbance in order to prevent detrimental impacts to trees from development activities. Appendix E of the Halton Region Regional Road Landscaping Guidelines and Specifications (2018) provides protection details for typical TPF with heavy duty silt fencing. The drawings state that TPF should be installed at minimum 0.9m outside the dripline for trees to be protected in order that wooden support stakes can be placed at or outside the dripline. An Erosion and Sediment Control (ESC) Plan may be implemented in combination with the TPF.

The recommended locations of TPF are to be shown on the updated TIR mapping at the Detailed Design stage. In accordance with the Regional Road Landscaping Guidelines and Specifications (Halton Region 2018), to minimize impact to these trees, root pruning should be undertaken following root-sensitive excavation at the limit of grading. Root pruning, if necessary, should be performed by a Certified Arborist using an appropriate implement to make proper pruning cuts and encourage callous root growth. To prevent root desiccation, the excavated areas should be backfilled with uncontaminated topsoil as soon as reasonably possible. Where grading extends beyond the footprint of road improvements but within tree driplines, heavy machinery traffic must be restricted in order to minimize soil compaction and mechanical root damage.

Prior to installation of the TPF, trees should be clearly marked for removal by a Certified Arborist. The trees should then be felled and removed with minimal disturbance to neighbouring trees and other vegetation. It is recommended that a site meeting between the Certified Arborist and the tree removal contractor take place to discuss the removal approach (i.e. retaining stumps, equipment being utilized, etc.) and timing so that adequate tree protection can be coordinated.

Prior to works commencing, a Certified Arborist or other qualified environmental monitor is to inspect and provide written certification to the Region and Town of Milton that all protective measures have been satisfactorily installed. Signage indicating the purpose of the protection fencing is to be attached to the TPF. The signage is to identify the function of the TPF and that no dumping or storing of materials or equipment, soil grade changes or compaction, damage to tree parts, vehicle/machine traffic or refueling within the tree protection areas are to occur.

6.1.1 Timing Windows

Migratory Birds Convention Act

The removal of trees within the study area has the potential to disrupt nesting birds. The *Migratory Birds Convention Act* (MBCA, Government of Canada 1994) identifies a list of migratory bird species that are protected. It prohibits the destruction of nests, individuals and activities that would cause an adult bird to abandon a nest. Tree removal is to occur outside of the core nesting period for migratory birds as established by the Canadian Wildlife Service (CWS 2012), which extends from approximately April 1 through August 31. Every developer/consultant/contractor, etc. is legally obliged to carry out due diligence to protect migratory birds from harm during all construction projects.

Species at Risk Bat Habitat

Seven suitable bat roosting habitat trees were identified along the roadside portions of the study area (Map 2a-2e). Removal of any of these trees, or other treed features within the study area, may cause impacts to Species at Risk bats and their habitat. Impacts to Species at Risk or their habitats are prohibited unless permitted or authorized by the Ontario Ministry of the Environmental, Conservation and Parks in accordance with *Endangered Species Act* requirements. It is recommended that the suitable habitat trees be removed outside of the bat active period (i.e., outside of April 1-September 30) to avoid impacts to individual bats. Additional information regarding bat habitat within the study area can be found within the Natural Environment Report (NRSI 2025c).

6.2 During Construction

The TPF is to be maintained by the contractor or their agents during the entire construction period to ensure that trees being retained and their root systems are protected. Any minimal damage (i.e. damage to limbs or roots) to trees to be retained during construction must be pruned using proper arboricultural techniques.

Should any trees identified to be retained in the final report be seriously damaged or die as a result of construction activities, the Region and Town will be consulted and presented with a proposed plan of action, such as treatment or replacement. Any replacement species are to be reviewed by a member in good standing with the Ontario Association of Landscape Architects (OALA) or Certified Arborist.

6.3 Post-Construction

All TPF is to be removed upon completion of construction activities. Watering and pruning of newly planted trees will be carried out as required during the warranty period (approximately two years). Any areas of bare soil within the construction area are to be re-vegetated (e.g., sod in urban areas, or otherwise application of a suitable native herbaceous seed mix or nurse crop) as soon as feasible to prevent erosion of soils and keep dust to a minimum.

7.0 Summary

NRSI was retained by HDR Inc. on behalf of Halton Region to complete a Preliminary TIR for the proposed improvements to James Snow Parkway between Britannia Road and Highway 401 in the Town of Milton (Map 1).

NRSI Registered Professional Foresters and Certified Arborists conducted a preliminary tree inventory on June 1 and 14, 2023. A total of 182 trees belonging to 28 species were inventoried and assessed. Of the 182 inventoried trees, 76 are currently proposed for removal. The tree removal analysis presented in this report is based on a preliminary area of development, which will be further refined during the Detailed Design stage. Additional tree inventory work will be undertaken as part of an updated TIR to be completed during Detailed Design phase to incorporate the full extent of the proposed road infrastructure widening and improvements.

It is recommended that all proposed tree removals occur in consideration of general timing windows for migratory birds (April 1 through August 31) and the bat active season (April 1 – September 30) (i.e., no removals between April 1 and September 30). As such, it is recommended that tree removals are completed before March 31 or after October 1 to avoid potential contraventions of the *Endangered Species Act*.

According to the *Forestry Act* (1990), it is required that any adjacent landowners be consulted prior to the removal or, or any activity that may impact, trees located on or bordering their property. Written permission from these landowners should be provided prior to the proposed works. TPF is to be installed prior to any on-site work, in order to provide adequate protection for retained trees and their root systems. The recommended locations of TPF will be mapped at the Detailed Design stage. The installed TPF is to be inspected by a Certified Arborist, and is to be maintained throughout the construction phase of the project. All TPF is to conform to the specifications of the Regional Road Landscaping Guidelines and Specifications (Halton Region 2018).

As per the compensation requirements set by the Canopy Replacement Schedule from the Tree Canopy Replacement Policy on Regionally-Owned Lands (LPS31-08) (Halton Region 2008), a total of 192 replacements trees are required as compensation for the 76 trees currently proposed for removal. Tree compensation plantings should be installed within the James Snow Parkway ROW to the extent possible. The Tree Canopy Replacement Policy on Regionally-Owned Lands (Halton Region 2008) also indicates that where there is no opportunity to plant

on-site, cash-in-lieu payments are permissible. The tree compensation total will be updated and finalized through completion of the updated tree inventory, and tree removal/retention assessment, to be completed during the Detailed Design phase.

8.0 References

- Canadian Wildlife Service (CWS). 2014. Migratory Birds Convention Act (MBCA) and Regulations. Available online: <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html>
- Dunster, J.A. 2009. Tree Risk Assessment in Urban Areas and the Urban/Rural Interface: Course Manual. Silverton, Oregon: Pacific Northwest Chapter, International Society of Arboriculture.
- Dunster, J.A., E.T. Smiley, N. Matheny, and S. Lily. 2013. Tree Risk Assessment Manual. Champaign, Illinois: International Society of Arboriculture.
- Halton Region. 2006. Tree Preservation By-Law No 121-05. Regional Municipality of Halton.
- Halton Region. 2018. Regional Road Landscaping Guidelines and Specifications. Available online: <https://www.halton.ca/The-Region/Regional-Planning/Planning-Applications/Download-Engineering-Design-Guides-Manuals>
- Halton Region. 2024. The Regional Plan – Official Plan for the Halton Planning Area. Regional Municipality of Halton. July 1, 2024.
- Lee, H. T., Bakowsky, W. D., Riley, J., Bowles, J., Puddister, M., Uhlig, P., & McMurray, S. (1998). Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch.
- Natural Resource Solutions Inc. (NRSI). 2025a. North Halton Coordinated MCEA – Regional Road 25 Improvements Draft Preliminary Tree Inventory Report. Prepared for HDR Inc. July 2025.
- Natural Resource Solutions Inc. (NRSI). 2025b. North Halton Coordinated MCEA – Steeles Avenue Improvements Draft Preliminary Tree Inventory Report. Prepared for HDR Inc. July 2025.
- Natural Resource Solutions Inc. (NRSI). 2025c. North Halton Coordinated EA – James Snow Parkway Improvements Draft Natural Environment Report. Prepared for HDR Inc. February 2025.
- Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. October 2000.
- Ontario Ministry of Natural Resources (OMNR). 2011. Bats and Bat Habitats: Guidelines for Wind Power Projects. First edition. July, 2011.
- Watt, R.W. and M.C. Caceres. 1999. Managing for Snags in the Boreal Forests of Northeastern Ontario. OMNR. Northeast Science and Technology. Technical Note- 016. 20p.