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# Technical Criteria for Vegetation Protection Plans

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## PURPOSE OF THE TECHNICAL CRITERIA

This document outlines key expectations for vegetation protection and minimum requirements for Vegetation Protection Plan (VPP) submissions.

The Niagara Escarpment Plan (NEP) [[1]](#footnote-1) provides for the development of guidance material and technical criteria to assist the Niagara Escarpment Commission (NEC) with implementing the policies of the Plan. These documents are intended to support but not add to or detract from the policies of the Plan[[2]](#footnote-2).

This version of the Technical Criteria for Vegetation Protection Plans was approved by the Niagara Escarpment Commission on DATE, YEAR. The NEC will, from time to time, update the Technical Criteria for Vegetation Protection Plans to reflect current technology, provide clarification, or refine the processes. The revision date will be noted at the beginning of the document and the most current version will be available for download from the NEC website at [www.escarpment.org](http://www.escarpment.org).

## BACKGROUND

A Vegetation Protection Plan (VPP) is a technical plan that identifies existing vegetation that may be impacted by development and provides practical methods for vegetation protection and the mitigation of development impacts. A VPP is intended to:

* Demonstrate conformity to NEP policies that protect natural heritage and scenery
* Meet the requirements of any applicable municipal by-laws or other agencies’ policies (e.g., conservation authorities) including where more stringent policies are in place
* Implement recommendations of related natural heritage evaluations or environmental impact studies (EIS)

The NEP and the *Niagara Escarpment Planning and Development Act* (NEPDA)[[3]](#footnote-3) require the protection of natural heritage features and functions, and the preservation of natural scenery. Further policy context is provided in Appendix A.

Where it is anticipated that proposed development may impact existing vegetation, the NEC, as the implementing authority of the NEP, may require a VPP for applications such as:

* NEC Development Permit Applications - prior to NEC decision on an application or as a Condition of Approval to be completed for the issuance of a permit, depending on the significance of potential impacts
* Niagara Escarpment Plan Amendments
* Niagara Parks and Open Space System (NEPOSS) Master Plans
* Municipal approvals under the *Planning Act* or other processes (e.g., environmental assessments)
* Other applications under provincial or federal legislation (e.g., telecommunications tower) where the NEC is a commenting agency

Where it is determined that the proposed development may result in significant negative impacts to natural heritage features and functions, a VPP may be proposed in conjunction with a natural heritage evaluation or environmental impact study (EIS). The need for an EIS will be determined by the NEC in conjunction with other agencies (e.g., municipalities, conservation authorities). The VPP shall not duplicate the work of the EIS but shall support implementation of the EIS recommendations for mitigating impact on vegetation.

## EXPERTISE

A VPP shall be completed by a qualified professional with expertise in vegetation inventory, assessment, tree care, and maintenance. Qualified professionals include Arborists (ISA, ASCA), Landscape Architects (OALA), Registered Professional Foresters (OPFA), and Ecologists. Applicants are advised to select a professional with expertise appropriate to the scope of work and the nature of the vegetation to be protected.

## 4. SCOPE OF WORK

### 4.1 Area of Consideration

The area of consideration for the VPP includes the entire development envelope (area of site disturbance) and a prescribed area extending beyond the development envelope called the zone of impact, where applicable. Vegetation on adjacent properties may be included in the VPP where there is the potential for impact to occur.

NEC staff, in consultation with other regulatory agencies (e.g., conservation authorities, municipalities) will provide direction on the area of consideration. The qualified professional shall prepare a terms of reference (TOR) for NEC review and approval for applications where the inventory, assessment, and protection circumstances are complex.

### 4.2 Vegetation Inventory and Assessment

The VPP shall include identification of woody and herbaceous Species at Risk in Ontario (SARO). Where found and potentially impacted by development, requirements under the *Endangered Species Act* may apply. Identification of SARO may necessitate additional study and/or changes to the site plan.

Unless otherwise specified, the VPP shall include an inventory and assessment of existing vegetation within the area of consideration. Existing vegetation includes trees, tree stands, and other woody and herbaceous vegetation associated with woodlands, hedgerows, wetlands, and other natural areas. The inventory and assessment shall include:

1. Vegetation units:
	* Size and location of the vegetation unit in square metres or hectares
	* Site conditions (e.g., slopes, soils, drainage)
	* Structure/stratification (e.g. canopy, sub-canopy, understorey, groundcover) and associated species composition, height, and density, including identification of any invasive species and Species at Risk
	* Crown density
	* Condition (e.g., health, hazard trees, habitat features)
	* Capacity of the vegetation unit to withstand impacts
	* Opportunities for habitat creation (e.g., snags, logs)
2. Trees ≥ 150 mm DBH:
	* Location
	* Species (botanical and common names)
	* Diameter at breast height (DBH)
	* Crown diameter
	* Condition (e.g., health, structure, form, age/significance)
	* Recommended action (e.g., protect, remove, prune)

### 4.3 Vegetation Protection Measures

The VPP will include identification of appropriate vegetation protection measures to prevent physical injury to vegetation and changes to growing conditions that may result from proposed development.

Physical injuries to the trunk, bark, crown and roots of a tree are permanent and can be fatal. Root cutting can result in trees becoming destabilized or falling over, which may cause damage to buildings, personal property, and other vegetation. Soil compaction or adding fill in the root zone deprives tree roots of oxygen and water and can lead to tree decline. Removal of edge vegetation can leave interior vegetation exposed to the elements. Site grading can alter drainage patterns that affect moisture regimes in vegetated areas.

Establishing a ‘no-go’ zone is necessary to prevent physical harm to the trunk, canopy, and root zone of a tree or other vegetation which may result from construction, site alteration or demolition activities. Within this zone there shall be no construction; no altering of grade by adding fill, excavating, trenching, scraping, dumping or disturbance of any kind; no storage of construction materials, equipment, soil, construction waste or debris; no disposal of any liquids (e.g., concrete, gas, oil, paint); and no parking of vehicles or machinery.

Tree protection fencing shall be provided in a continuous manner at or outside the dripline of existing vegetation to be retained or at the limit of work (development envelope). Types of tree protection fencing include:

* Light duty tree protection fence (most applications) - 1.2 m high plastic construction fence (or equivalent) attached to 1.2 m high steel T-bars installed at 2.4 m on centre.
* Heavy duty tree protection fence (for constrained spaces where heavy machinery is operating in close proximity to the protection zone) - 1.2 m high page wire fence (or equivalent) attached to 2.4 m high square wood posts or steel T-bars installed at 2.4 m on centre and reinforced at all corners.
* Solid hoarding (for constrained spaces where heavy machinery is operating in close proximity to the protection zone) - 12 mm x 1.2 m x 2.4 m (4’ x 8’) plywood boards secured firmly to 1.2 m high wood posts/T-bar supports installed at 2.4 m on centre with 38 mm x 89 mm (2’ x 4’) top and bottom rails.
* Other protection barriers may be accepted where subsurface conditions (rock) prevent the installation of T-bars or posts and/or where fence installation may cause more damage to the environment. Alternates include straw bales, jersey barriers, and self-supporting fencing.

Tree protection fencing shall be installed before any construction starts and shall remain in good condition throughout construction. Where applicable, sediment control fencing may be attached to the tree protection fence. Any other tree protection measures proposed (e.g., limb and root pruning, watering, application of mulch, signage) shall be described in the VPP notes.

### 4.4 Tree Replacement

Where vegetation removal cannot be avoided, the NEC (in conjunction with other agencies) may require the planting of new vegetation and trees. Replanting of vegetation is critical to restoring the natural environment, buffering natural areas from the impacts of development, and in some cases, screening the visual impact of development on the Escarpment’s natural scenery. Proposed planting may be shown on a Landscape Plan or on the VPP, as needed. Tree and/or vegetation replacement requirements shall be determined in consultation with the NEC.

Where a failure to implement protective measures set out in the approved VPP results in the death of vegetation, replacement may be required using a per caliper or aggregate caliper method. Tree and/or vegetation replacement terms and conditions shall be determined in consultation with the NEC.

## 5.0 SUBMISSION FORMAT

Unless otherwise directed by NEC staff, the VPP shall include a plan drawing visually displaying the following information:

* Title block with the following drawing information:
	+ Written scale (i.e., 1:200) and bar scale
	+ North arrow
	+ Date of original drawing, along with the dates of each revision
	+ Project name, location and key map
	+ Professional/company name, contact information, and qualifications
	+ Comprehensive legend
* Existing and proposed buildings, structures, hard surfaces, grade changes, construction access and staging areas, fill or excavated material stockpiles, and all existing trees or vegetated areas within the area of consideration
* Development envelope (limit of work) and zone of impact boundaries, any planning constraints or setback requirements (e.g., designated Vegetation Protection Zone)
* Dripline of existing trees ≥ 150 mm DBH with identification numbers
* Dripline of existing vegetation and/or extent of vegetation units (where applicable)
* Trees or areas of vegetation to be removed and/or injured
* Tree protection fencing and vegetation protection zones
* Vegetation protection notes and details to specify best practices for the installation of tree protection fencing, vegetation removal, rehabilitation, timing of works, clean equipment protocols, certification of works, tree replacement/buffer planting/seeding, invasive species management, monitoring of tree/vegetation health, etc.
* Tree inventory table with tree identification number, species (botanical and common names), DBH, ownership (e.g., private, neighbouring, shared, municipal), condition ratings (health, structure, form), action. All condition ratings used in the assessment will be provided in a legend.

The plan drawing(s) may be accompanied by a written report where a detailed assessment has been undertaken.

A digital submission is acceptable provided that the drawing is legible when printed and/or viewed on a computer screen. A hard copy submission may be requested for review, particularly in the case of large format drawings or large drawing sets.

## 6.0 REVIEW AND APPROVAL PROCESS

An incomplete submission may delay review or decision on an application. Revisions and resubmission may be required to ensure that the appropriate criteria have been met. Other agencies may be copied on the submission where a coordinated review is required. Revisions to the site plan may be necessary depending on the significance of the impacts on existing vegetation.

The approved VPP becomes part of the final Development Permit or other approval. All work shall be installed as specified including certification of installation by a qualified professional and NEC notification. Changes require NEC approval prior to installation. Failure to implement a VPP in accordance with the approved Development Permit is a Provincial Offence and could result in fines and/or prosecution.

## 7.0 TERMINOLOGY

**Aggregate Caliper Method:** A method of determining tree replacement quantities that applies a depreciation factor for the pre-casualty health and structure of the tree(s) that have died

**Area of Consideration:** The area to be assessed in the VPP consisting of the development envelope and the zone of impact.

**Caliper:** The diameter of nursery-grown trees in accordance with the Canadian Standards for Nursery Stock. Trees less than 100mm are measured at 15 cm above grade; trees more than 100mm are measured at 30 cm above grade.

**Development Envelope:** The total area required to complete all of the proposed works including tree removal, construction staging and access routes, building, site alteration, and servicing.

**Diameter at Breast Height (DBH):** The diameter of the tree trunk measured at a height of 1.4 m above the ground (or forest duff layer) on the uphill side of the tree.

**Dripline:** The furthest horizontal extent of the branches of a tree or shrub.

**Hazard Tree:** A tree that poses a level of risk to people or property and that requires immediate removal, or other mitigating actions, to reduce the level of risk posed.

**Per Caliper Method:** A method of determining tree replacement quantities using multiple caliper-sized trees totalling the DBH of a larger tree that has died

**Vegetation Protection Zone (VPZ):** As defined in the NEP, a VPZ is a vegetated buffer area surrounding a key natural heritage or key hydrologic feature within which only those land uses permitted within the feature itself are permitted.

**Vegetation Unit:** A collection or association of plant species within a designated geographical unit which forms a relatively uniform patch, distinguishable from neighbouring patches of different vegetation types.

**Zone of Impact:** An area extending beyond the development envelope where impacts to the existing vegetation to be retained may occur. Zone size varies depending on the condition or characteristics of the vegetated area and may be determined by the qualified professional unless otherwise specified.

## APPENDIX A: POLICY CONTEXT

### **Provincial Policy Statement (PPS)**

The PPS (2020) directs that natural features and areas shall be protected for the long term, and that the long-term ecological function and biodiversity of the natural heritage systems should be maintained. Part 2.1 identifies that development and site alterations shall not be permitted in significant woodlands, wetlands, valleylands, wildlife habitat or Provincially Significant Areas of Natural and Scientific Interest (ANSIs), and adjacent lands, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

### **Niagara Escarpment Planning and Development Act (NEPDA)**

The need to address protection of vegetation associated with development is inherent in the Purpose of the NEPDA (Section 2), which provides for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment and ensuring compatible development; and in the Objectives (Section 8) related to the protection of unique ecologic areas (8.a), maintaining and enhancing natural streams and water supplies (8.b), and maintaining and enhancing the open landscape character through compatible farming, forestry and by preserving natural scenery (8.d).

### **Niagara Escarpment Plan (NEP)**

The NEP is premised on a landscape approach to planning which seeks to maintain a system of interconnected natural areas, features and systems. Protection and restoration of vegetation at the site level is necessary to maintain structure and function at the landscape level. The protection of natural heritage features, scenic resources and open landscape character is inherent in the designation objectives for Escarpment Natural, Escarpment Protection, and Escarpment Rural areas. These resources include the mosaic of woodlands, hedgerows, agricultural fields and natural areas that form the Escarpment landscape. Land use designations that provide for more intensive forms of development (Minor Urban Centres, Urban Areas, Recreation Areas, Mineral Resource Extraction Areas) all contain policies calling for implementation approaches that minimize the impact of growth and development, minimize impact on natural heritage features and functions, and are compatible with the scenic resources and character of these areas.

Many Development Criteria (Part 2) deal with protecting, rehabilitating, and enhancing natural heritage features and minimizing the impact of development through erosion and sediment control, avoidance of slopes and natural hazards, landform conservation and protection of scenic resources. Part 2 policies include significant restrictions on development in key hydrologic and natural heritage features and provide strong protection for Species at Risk.

1. Niagara Escarpment Plan (2017); Ontario; Order in Council No. 1026/2017; Office Consolidation December 21, 2018. Available for download at [www.escarpment.org](http://www.escarpment.org). [↑](#footnote-ref-1)
2. Ibid, page 11. [↑](#footnote-ref-2)
3. Niagara Escarpment Planning and Development Act; R.S.O. 1990, c. N.2. Available for download at [www.ontario.ca/laws/statute/90n02](http://www.ontario.ca/laws/statute/90n02). [↑](#footnote-ref-3)