

TOWN OF WHITBY

Tree Protection Requirements For New Development

2020



For more information, contact
Planning and Development 905.430.4306 or visit

whitby.ca/Tree Protection Requirements for New Development



Table of Contents

1.0	Introduction	4
1.1	Purpose	4
1.2	Objectives	5
1.3	Scope of Application: Regulated Trees	6
1.4	The Tree Protection Process in the Town of Whitby	6
1.5	Town of Whitby Department Roles and Responsibilities	7
1.6	Assumptions and Limiting Conditions	8
1.7	Policy Context: Legislation, Policy, By-Laws, and Regulations Guiding Tree Protection	9
2.0	Submission Requirements for Tree Inventories, Plans and Reports	10
2.1	Introduction	10
2.2	Consultant Qualifications	10
2.3	Tree Inventory Requirements	11
	2.3.1 Tree Inventory Plan (TIP) Requirements	12
2.4	Arborist Report Requirements	13
2.5	Tree Preservation and Protection Plan (TPP) Requirements	13
2.6	Format Requirements for TIP and TPP Plan Submissions	14
2.7	Regulated Conditions	14
3.0	Tree Preservation and Protection during Construction	15
3.1	General Recommendations	15
3.2	Establishment of the Tree Protection Zone (TPZ)	15
	Table 3.1: Tree Protection Zones for Individual Specimen Trees	16

3.3	Types of Tree Protection Fencing	18
3.3.1	General	18
3.3.2	Tree Protection Fencing for Woodlots / Edge Management	18
3.3.3	Sediment Control Fencing	18
3.4	Signage	18
3.5	Prohibited Activities within the Tree Protection Zone	19
3.6	Preventing and Minimizing Injury to Protected Trees during Construction	20
3.7	Responding to Injuries or Damage	21
3.8	Significant Injury Requiring Tree Removal	22
4.0	Compensation and Appraisals for Tree Removals	24
4.1	Introduction	24
4.2	Compensation Strategies	25
4.2.1	Replacement Plantings	25
4.2.2	Transplanting	26
4.2.3	Cash Contribution to Town Tree Reserve	26
4.3	Appraisals for Existing Trees	27
4.3.1	Appraised Values for Municipal Trees	27
4.3.2	Appraisal Format and Submission Requirements	28
5.0	Inspections, Monitoring and Financial Securities	29
5.1	General Inspection and Monitoring Requirements	29
5.2	Required Inspections	30
5.2.1	Pre-construction Phase	30
5.2.2	Construction Phase	30
5.2.3	Post-construction Phase	31
5.3	Schedule and Reporting	31
5.4	Financial Securities and Release Requirements	32

6.0	Additional Resources	33
6.1	Town of Whitby:	33
	Planning and Development Department	33
	Additional Reference Information:	33
	Public Works Department	33
6.2	Other:	33
	Ontario Tree Marking Guide-Version 1.1 (Technical Series)	33
7.0	Details and Notes	34
Detail 700	Light Duty / Temporary Tree Protection Fencing	34
Detail 701	Heavy Duty Tree Protection Fencing	35
Detail 702	General Tree Protection Notes	36
Detail 703	Signage	37

1.0 Introduction



1.1 Purpose

The Town of Whitby recognizes the fundamental role that trees play in providing an improved quality of life for all residents. Trees moderate the impacts of climate change and contribute to the environmental sustainability of our community. The protection of woodlands and the urban forest canopy is directly connected to the ecological health, functions and biodiversity of the natural environment. It is also an important factor in public health and well-being, and to the physical and economic health of our local community. Trees also have cultural, historic and aesthetic value.

The maintenance, growth and enhancement of the urban forest and woodlands are a priority for the Town to ensure a healthy, sustainable forest canopy and a sustainable, livable town. The trees within the municipality are all part of the Town's urban forest and woodlands. This includes trees in natural areas (woodlands or forests), and planted trees in manicured settings, such as boulevards, parks, along streets, and in private backyards. Large, healthy trees take time to grow and are not easily replaced. Plans created with tree protection in mind help protect the Town's urban forest and woodlands. **Reference to these requirements may assist in the protection and preservation of trees and woodlands on private and public lands.**

The Town of Whitby Tree Protection Requirements for New Development (TPR) guides landowners and developers in activities related to existing trees. These requirements are applicable to development in various contexts on both public and private lands.

Tree removals that fall under the jurisdiction of the Town's Tree Protection By-Law, or applications for development within the Town of Whitby must fulfill these requirements prior to any tree removals.

These requirements will be applied subject to such adjustments as may be deemed reasonable and appropriate depending on the scope and complexity of each circumstance. Higher standards may be required where warranted.

1.2 Objectives

The Tree Protection Requirements for New Development will:

- promote the effective, long-term retention, maintenance and enhancement of the Town's woodlands and urban forest canopy (the preservation of existing trees is preferable to replacement);
- establish general requirements for the preservation, protection and avoidance of injury to existing trees;
- identify opportunities to restore tree and woodland health through pruning, transplanting, re-planting and landscaping;
- outline the requirements for the inventory and assessment of existing trees;
- provide requirements for protecting trees whenever tree protection measures are required, including general maintenance requirements;
- outline the requirements for the preparation of a Tree Protection Plan (TPP);
- ensure that trees worthy of protection are identified early in the development process and that Tree Protection Plans are used to guide the layout, grading, landscaping, servicing and drainage of a proposed development, supported by clear tree management recommendations;
- establish objectives and performance standards which will ensure that tree management, assessment and evaluation for new developments is optimized;
- provide consistent, standard requirements for tree related plans, reports, studies, appraisals and permits, ensuring the provision of a consistent, reliable and efficient approval process;
- determine compensation requirements for unavoidable removals to ensure the Town's woodlands and urban forest canopy is protected and enhanced;
- promote current arboricultural practice;
- ensure roles and responsibilities are formally addressed;

- enhance communication between residents, development agencies and the Town; and
- promote education, awareness and investment in the protection of the Town's woodlands and urban forest canopy

1.3 Scope of Application: Regulated Trees

These requirements apply to Regulated Trees on both public and private property. Regulated Trees are trees that fall within the jurisdiction of any municipal, regional, provincial or federal policy area By-law and/or permit process, or are associated with an agreement related to development. A regulated tree can be located on both municipal and private property.

The Tree Protection Requirements for New Development reflect the policies of the Town of Whitby. Failure to adhere to these requirements and any related Town policies and/or Town By-Law requirements may compel financial responsibility for any resulting damage to trees or for unauthorized tree removals. Individuals may be charged under the provisions of the applicable Town Tree By-Law or subject to orders to comply.

1.4 The Tree Protection Process in the Town of Whitby

To be effective, tree inventory, assessment, financial appraisals, protection and permit processes must be coordinated with the preparation and review of preliminary development, construction or proposed tree removals. The possible constraints that existing trees may place on these activities must be considered well before the plan review stage, and proponents are encouraged to investigate opportunities to maximize the protection, preservation and planting of new trees in their activities.

The following summarizes the general approach by the Town of Whitby for providing protection for existing trees in plans of development:

- As a condition of development approval, and prior to the removal of any trees or vegetation on proposed development lands, proponents are required to comply with the Tree Protection Requirements for New Development, including the provision of financial securities if required;
- Proponents will submit a Tree Inventory Plan (TIP) and Arborist Report assessing existing trees and vegetation on the development lands. A Tree Preservation and Protection (TPP) Plan is also required and will include recommendations for all aspects of tree health, including protection measures, long term monitoring and maintenance requirements;
- Any additional requirements identified by the Town, such as Certified Tree Appraisals, Heritage Permits or other Tree Removal Permits, or related studies and/or plans will be included as part of the submission of a draft plan of a subdivision or site plan application to the Town of Whitby;

- Submissions will be provided in accordance with these and any other applicable requirements, and subject to any associated policy, legislation or external jurisdictional requirements;
- Required plans must be prepared to the satisfaction of the Planning and Development Department, and Tree Protection Fencing must be installed prior to removal of any tree(s) or vegetation;
- If pre-grading is requested, the TPP must be approved prior to issuance of a Site Alteration permit. If the TPP will affect final design, adjustments to the plan may be required prior to draft approval;
- In addition to the provisions of the Tree Protection By-law No 4640-00, Official Plan Section 5: Environmental Management, the requirements of the Subdivision Agreement and all other applicable legislation, Developers, Builders and land owners are required to comply with these requirements through the Subdivision Servicing and Building process. Applicable permissions include grading and fill permits, building permits, site alteration permits, heritage permits, committee of adjustment, land division process, etc.;
- It is the responsibility of the Developer to acquire a qualified professional Consultant, preferably a Landscape Architect, to correctly prepare a TPP, while an ISA (International Society of Arboriculture) Certified Arborist will be required for the tree inventory and assessment process and field work; and
- Any questions regarding the Tree Preservation Requirements for New Development will be directed to the Town's Planning and Development Department.

1.5 Town of Whitby Department Roles and Responsibilities

The **Planning and Development Department** is responsible for coordinating the installation of new trees through development, the protection of existing trees and woodlots through the planning process and various legislative tools (refer to 1.7) and to ensure compliance with the Town's policies, including Tree Protection policies and Tree Protection Requirements for New Development. The Planning and Development Department is also responsible for the coordination and approval of Tree Removal Permit applications, including those requiring a Heritage Permit.

The **Building Division of the Planning and Development Department** advise appropriate Town staff when trees on Town property may be impacted by proposed building activities.

The **Forestry Group, Parks Division in the Operations Department** is responsible for the installation and care of trees on municipal property, providing support when trees on municipal property may be impacted (including capital works), for generating appraisals for municipal trees under threat, for responding to enquiries about trees

on municipal property from residents (street trees, open spaces, parks, adjacent woodlands, etc.) and in emergencies.

The **Public Works Department (Development Engineering and Environmental Services)** is responsible for coordinating enforcement of the Tree Protection Requirements for New Development in association with any Site Alteration, Grading/Fill, and Curb-cut permits in consultation with the Planning and Development Department. Proposed landscape works, tree planting and tree protection works related to Subdivision and Site Plan development applications are also reviewed and coordinated with the Planning and Development Department.

The **Capital Works Division of the Public Works Department** is responsible for tree protection requirements for trees on municipal property, generally in accordance with these Tree Protection Requirements for New Development and in consultation with the Forestry Group, Parks Division of the Operations Department. They also plant new trees during road works and other infrastructure projects.

The **Parks Division of the Community and Marketing Services Department** is responsible for the design and installation of parks and open spaces in association with development applications, including the installation of new trees.

The **By-law Services Division of the Legal and Enforcement Services Department** is responsible for enforcing formal written complaints pursuant to the Town of Whitby By-Laws, such as the Tree Protection By-law and the Property Standards By-law.

Contact information is available in: [Who to Contact at the Town of Whitby about Trees](#).

1.6 Assumptions and Limiting Conditions

- The Town assumes no liability for any issues related to compliance with the Tree Protection Requirements for New Development;
- Care has been taken to obtain reasonable information from reliable sources for these requirements;
- The Town of Whitby reserves its right to apply discretion in the interpretation of these requirements, and to reference additional relevant Tree Protection Requirements or professional advice when reviewing each project; and
- The Town of Whitby recognizes that not all trees are able to be preserved. Tree preservation will be considered relative to planning and engineering constraints. Trees that are in poor health, structurally unstable or an undesirable species may be candidates for removal. Urban intensification may also not provide sufficient space to permit all desirable trees to be preserved.

1.7 Policy Context: Legislation, Policy, By-Laws, and Regulations Guiding Tree Protection

The responsibility for protecting, maintaining and enhancing the forest canopy is primarily shared between public agencies, such as the Town of Whitby, the Region of Durham, the Central Lake Ontario Conservation Authority (CLOCA), the Ministry of Natural Resources and Forestry (MNRF), the Province of Ontario and, to a limited extent, the Federal Government.

More detailed information about the various levels of jurisdiction that provide a framework for protection of woodlands and the urban forest in Whitby can be found in [Policy Context: Legislation, Policy, By-Laws, and Regulations Guiding Tree Protection in the Town of Whitby.](#)

2.0 Submission Requirements for Tree Inventories, Plans and Reports



2.1 Introduction

The following information will assist in the preparation of required submission materials to the Town in support of development applications, where regulated by Tree Protection By-Laws or other applicable legislation or policy, or when required by the Town. The submission of sufficiently detailed information in the appropriate format ensures the review by Town staff is efficient and effective.

Consultation with the Planning and Development Department is required in advance of a submission to determine the level of detail and submission materials required in each circumstance. Submission requirements for small-scale developments or those with a limited number of existing trees may be streamlined at the discretion of the Planning and Development Department.

Submission requirements for Tree Removal Permit applications not associated with development applications are determined on an individual basis by the Planning and Development Department and depend on the complexity and scope of the proposed removals. Refer to [Tree Protection By-Laws and Tree Removal Permits](#) for more information.

2.2 Consultant Qualifications

The developer will acquire a qualified professional to survey, map and evaluate existing vegetation prior to designing the draft plan of subdivision or site plan. An International Society of Arboriculture (ISA) Certified Arborist (Arborist) can advise on

which trees are suitable for retention, determine necessary protection measures, and assist in designing a layout that maintains tree health and safety before, during and after construction.

Tree Inventories and Tree Preservation Plans will be prepared by an Arborist that is a member in good standing with the ISA, an Ontario Qualified Arborist (Ministry of Training, Colleges and Universities (MTCU)), a Qualified OPFA Member of the Ontario Professional Foresters Association, or a Landscape Architect that is a member in good standing with the Ontario Association of Landscape Architects (OALA).

Tree Inventory Surveys will be prepared by a land survey professional licensed by the Association of Ontario Land Surveyors (OLS). Tree Inventory Plans will be overlaid upon the Grading Plan, and include both existing and proposed grade information and features (swales, berms, retaining walls, servicing, silt fencing, trees, etc.). Additional features may be required to be located by the OLS Surveyor where impacts are implied to boundary trees or trees on adjacent properties that may be impacted by the proposed development.

Depending on the scope and complexity of a proposed development, a Tree Inventory and Tree Preservation Plan may be able to be combined.

Arborist Reports will be prepared by an ISA Certified Arborist, a Qualified OPFA Member, or an Ontario Qualified Arborist (MTCU).

For Woodland and/or Edge Management Plans, a collaborative assessment may be prepared by a Landscape Architect (OALA), an ISA Certified Arborist, a Qualified OPFA Member and/or a Consulting Ecologist in conjunction with a completed Environmental Impact Study (EIS). Information will build upon the ecological assessment of natural heritage features and functions. Vegetation assessment recommendations will be integrated with and complementary to recommendations for the conservation of the NHS and linkages, as appropriate and with reference to applicable legislation and policy requirements. This includes setback requirements for buffers from boundaries of NHS features and areas, as well as requirements for restoration or other measures.

2.3 Tree Inventory Requirements

The Tree Inventory will generally identify:

- **Individual trees** within the property equal to or greater than 10 cm DBH (trunk diameter at breast height 1.4 metres above grade);
- **Individual trees** equal to or greater than 10 cm DBH on adjacent property within 6 metres of the property line, or with a tree canopy that crosses the shared property line (trees on adjacent private property will not be tagged, and information will be collected by visual estimation only);

- **Individual trees** equal to or greater than 10 cm DBH on public property (Town or Regional), or with a tree canopy that crosses the shared property line; and
- **Groupings of trees** (including hedgerows) - identify total number of stems within a grouping of trees.

Locations for all trees will be surveyed and located with reference to the property boundary and accompanied by the existing grade elevations at the base of each tree.

Detailed information for identified trees will be provided through a **Tree Inventory Summary Chart and Species Tally**. A template for these is available [here](#).



2.3.1 Tree Inventory Plan (TIP) Requirements

A Tree Inventory Plan (TIP) will illustrate the surveyed locations of all existing vegetation by type (coniferous, deciduous), extent of canopy, and tree tag/ inventory identification number. This information can also be overlaid on an air photo.

“Existing vegetation” includes:

- groups of trees and/or vegetation, woodlots and/or forests accurately located relative to the property boundary; and
- Individual trees and vegetation, woodlots and/or forests on adjacent sites where the dripline is within 6.0 metres of the property line or the proposed development may have impacts.

Tree Inventory Plans will also illustrate:

- topography and slope, including valleys or other natural grade-related features;

- existing drainage patterns and any relevant surface characteristics (ponds, wetlands, ground water features, stream side protection areas, etc.);
- linkages to off-site habitat areas;
- applicable legislated or regulated areas (Oak Ridges Moraine, CLOCA jurisdiction, Greenbelt, Species at Risk, designated Heritage Trees protected by designation under the Ontario Heritage Act, etc.);
- general existing site information, including any existing structural features or hard surfaces (buildings, roads, patios, sheds, fencing, etc.); and
- [Tree Inventory Summary Chart and Species Tally](#).

2.4 Arborist Report Requirements

An analysis of the data generated in the Tree Inventory will generally be required to be submitted through an Arborist Report. The Arborist Report will provide a detailed review, analysis and interpretation of the information generated in the Tree Inventory. The Arborist Report will include the Tree Inventory within the Report. The Arborist Report may also contribute additional information not included in the Tree Inventory.

The Report will provide an assessment of the potential impacts of the proposed development on affected trees / vegetation. An Arborist Report will also provide specific recommendations for the protection of trees to remain, including maintenance measures before, during and after construction activities. It will also deliver recommendations for removals, advise of any associated legislative and permit requirements, and reference applicable Town of Whitby (or additional) technical drawings and any other supporting information.

Additional details about the information required to be provided in an Arborist Report is available in [Arborist Report Requirements](#).

2.5 Tree Preservation and Protection Plan (TPP) Requirements

A Tree Preservation and Protection Plan (TPP) is required whenever proposed development may impact existing vegetation. This plan will illustrate the recommendations of the Arborist Report and build on the information illustrated on the Tree Inventory Plan. The TPP will identify existing trees to be protected or removed, illustrate the TPZ for protected trees and provide detailed information regarding required tree protection measures. Illustrated technical details and notes will be shown. The plan will be coordinated with and reflect the layout of the proposed development, including any site features or structures.

Details about the information requirements of a TPP is available in [Tree Preservation and Protection Plan Requirement Checklist](#).

2.6 Format Requirements for TIP and TPP Plan Submissions

Plan submissions will be prepared as an overlay onto a current property survey prepared by a Certified Ontario Land Surveyor (OLS) illustrating existing buildings and site features as well as the proposed development.

Additional detailed requirements for title blocks and graphics are available in [Format Requirements: Tree Preservation and Protection Plans](#).

2.7 Regulated Conditions

Regulated conditions may impact tree protection and removal activities and the recommendations provided in Tree Inventories, Arborist Reports, and Tree Preservation and Protection Plans. Legislated requirements are discussed in greater detail in [Policy Context: Legislation, Policy, By-Laws, and Regulations Guiding Tree Protection in the Town of Whitby](#). More specific information is also available in the resources provided in the links below:

- [Ash Trees and the Emerald Ash Borer \(EAB\)](#)
- [Migratory Birds Convention Act](#)
- [Development and Woodlands in Designated Areas](#)
- [Forestry Act and Boundary Trees](#)
- [Endangered Species, Species at Risk and Butternut Trees](#)
- [Tree Risk Assessment](#)
- [Heritage Trees](#)



3.0 Tree Preservation and Protection during Construction

3.1 General Recommendations

Successful tree preservation occurs when decisions about trees are based on professional assessments. Measures to prevent damage to existing vegetation and to optimize tree health must occur before, during and after construction to prevent both site degradation and soil compaction, and in order to minimize or eliminate the negative impacts of construction activities on any existing vegetation that will remain. Impacts from development and construction must consider both the potential for immediate injury as well as long-term, chronic stress from more subtle impacts. A more in-depth discussion about the important structural elements of a tree is available in [The Crown and Root Structure of a Healthy Tree](#).

Damage to trees from construction is often irreversible and cumulative. Preservation of existing trees requires the commitment of everyone involved in designing, constructing and managing a project. Communication between owners, their agents and consultants, Arborists, contractors and sub-contractors and/or neighbours, if applicable throughout the construction process is critical to ensuring everyone is aware of the issues surrounding tree protection and fully understands the requirements and methods for protection to be successful, including:

- Establishing the Tree Protection Zone (TPZ) area with fencing and signage;
- Avoiding prohibited activities within the TPZ;
- Coordinating construction traffic and haul routes to avoid the TPZ;
- Avoiding the TPZ when staging materials and storage areas;
- Understanding maintenance requirements for protected trees within TPZ's; and
- Responding to Damage or Injuries appropriately.

Additional information can be found in [Protection Recommendations for Common Construction Related Impacts Causing Tree Injury](#). The TPZ and protection measures will be regularly monitored by the Arborist throughout the project, and in accordance with the requirements of the approved Tree Preservation Plan.

3.2 Establishment of the Tree Protection Zone (TPZ)

The Tree Protection Zone (TPZ) is the minimum setback required to maintain the structural integrity of a tree's anchor roots, and is based on generally accepted arboricultural principles. A TPZ prevents physical damage and mechanical injury to

trees, prevents soil compaction, protects tree roots, and helps to avoid soil contamination. TPZ's are based on the diameter at breast height (DBH) of a tree, as outlined in Table 3.1 (below).

Table 3.1: Tree Protection Zones for Individual Specimen Trees

DBH (Diameter at Breast Height) Trunk Diameter (cm) (measurement at 1.4 m above grade)	Minimum* Tree Protection Zone (TPZ) Distance Required (m) TPZ Measurement from outside edge of trunk flare (m)
less than 10	1.2
10 – 29	1.8
30 - 40	2.4
41 – 50	3.0
51 – 60	3.6
61 – 70	4.2
71 – 80	4.8
81 – 90	5.4
91 – 100	6.0
Greater than 100	6 cm per 1 cm at DBH**

Notes:

- * Measurements provide minimum protection distances for anchor and transport roots, however, extensive feeder roots (responsible for water and nutrient absorption, and gas exchange) may extend beyond these setbacks, therefore, the Town and/or the Arborist may require larger TPZ for high-value, Heritage Conservation District, or otherwise significant trees and depending on the site conditions at each location
- ** converted from the ISA Arborist Certification Study Guide recommendations for Erecting Barriers, Ch. 13 “Trees and Construction”

The following criteria should also be applied to ensure the TPZ is effective:

- Design specifications for tree protection fencing and signage will reflect the requirements of the approved Tree Protection Plan, including the Arborist Report, where applicable.
- Construction Management plans, Grading plans, and Erosion and Sediment Control plans will reflect the requirements of the approved Tree Protection Plan.
- TPZ Protective fencing will be installed prior to the commencement of any site work (including any tree removals, ground breaking, grading, site clearing, demolition or any other type of construction), in accordance with the location

- requirements of the approved Tree Protection Plan and to the satisfaction of the Arborist and the Town.
- The Arborist may be required to provide the Town written verification that all of the required tree protection measures have been installed in accordance with the approved Tree Protection Plan.
 - All tree protection fencing must remain intact, in place and in good condition throughout the entire duration of the project. No fencing is to be removed, relocated or otherwise altered without the written permission of the Arborist and/or the Town.
 - Any tree protective fencing that is installed is the responsibility of the Contractor. The Arborist will regularly inspect protective fencing (where required and in accordance with the requirements of the Tree Protection Plan) and the Contractor will maintain protective fencing regularly in good repair.
 - Tree Protection fencing for individual specimen trees and/or vegetation to remain will completely enclose (or enclose up to property lines, where appropriate) trees to be protected and be positioned in accordance with distances identified in [Table 3.1: Tree Protection Zones](#) (page 16) at the edge of the TPZ or at the edge of the tree's dripline plus 1.0 metre, whichever is greater.
 - Groups of trees and woodlots will be protected by shared tree protection fencing around the entire clump(s) wherever possible, or along the full length of the limit of development and at the limit of the largest TPZ for any tree in the grouping, and at a minimum distance of 10 meters beyond the drip line of a woodland to be preserved; woodland TPZ's will be determined in consultation with the Town and CLOCA; for more information about this requirement, refer to [Development and Woodlands in Designated Areas](#)
 - To ensure no materials enter the TPZ, plywood tree protection fencing will be utilized wherever fill or excavated materials must be temporarily located near a TPZ (refer to [Detail 701-Heavy Duty Tree Protection Fencing](#))
 - Areas designated for soil stockpiling will be fenced with sediment control fencing and in accordance with the approved Tree Preservation Plan. Sediment control fencing may be attached to the Tree Protection Fencing where appropriate.
 - Boulevards adjacent to TPZ areas will be well maintained controlling weeds and grass, and maintaining clear circulation routes and views in and around TPZ areas.
 - At the completion of construction works and approval has been received from the Arborist and the Town, the Contractor is responsible for the complete removal of the protective fencing.

3.3 Types of Tree Protection Fencing

3.3.1 General

The following types of tree protection fencing provide protection of TPZ areas:

- [Detail 700: Temporary / Light-Duty Tree Protection Fencing](#)
The Contractor will install protective fencing on (50 mm x 50 mm x 6 mm) -2.4 m length steel T-bars positioned 1.2 m on centre maximum. The protective fencing will be wired in 3 places evenly spaced along the steel T- bar with #10 galvanized wires.
- [Detail 701: Heavy-Duty Tree Protection Fencing](#) will be constructed of minimum 1.2 m height x 19 mm thick (4 foot ht. x ¾ inch thick) plywood sheets on a T-bar post or 50 mm x 100 mm wooden frame; supported upright using L-shaped supports to prevent root damage. All supports and bracing will minimize disturbance and damage to roots.

3.3.2 Tree Protection Fencing for Woodlots / Edge Management

- 1.2 metre height page-wire fencing supported by steel T-bar posts may be installed around large tree groupings or in areas of low construction equipment and machinery traffic if approved by the Town; or
- 1.2 metre height page-wire fencing or orange safety fencing supported by steel T-bar posts may be substituted where visibility is a safety concern and with the prior approval of the Town; a 38 mm x 89 mm (2 foot x 4 foot) frame will be used to support this fencing.

3.3.3 Sediment Control Fencing

- Areas designated for stockpiling of excavated soil must be outside of the TPZ and enclosed with sediment control fencing;
- Sediment control and erosion control style fencing must be coordinated with Tree Protection fencing on all associated plans; and
- Sediment control fencing will be installed in accordance with Ontario Provincial Standards (OPSD-219.130, Section 7, Figure 5), and, with the prior approval of the Town, may be attached to the tree protection barrier as directed by the Town.

3.4 Signage

Signage reflecting the requirements of [Detail 703: TPZ Signage](#) will be prominently mounted on each side of the TPZ protection fencing for the duration of the project when required by the Town. Signage will be a minimum of 40 cm x 60 cm, and constructed from corrugated plastic board (or an equivalent material) and installed to withstand inclement weather conditions. Signs will be no more than 20 metres apart.

TPZ Signage will include the following information:

- Town of Whitby;
- Tree Protection Zone/TPZ; and
- **Note:** All construction related activities, including grade alteration, excavation, soil compaction, and materials or equipment storage, disposal of liquids, and vehicle traffic are NOT permitted in this area. This tree protection barrier must remain in good condition and must not be removed or altered without authorization of the Town. Concerns or enquiries regarding this TPZ can be directed to the Town of Whitby, Planning and Development, (905) 430-4306.



3.5 Prohibited Activities within the Tree Protection Zone

No unauthorized activities may take place within a TPZ established through a development or permit process through the Town. Construction workers and machinery must not disturb or access the identified TPZ. Areas within the tree protection fencing will remain undisturbed and will not be used for:

- Storage of construction materials and/or supplies, building materials, debris or demolition materials, equipment of any type;

- Access, parking, or movement of vehicles, equipment or pedestrians. Access routes will be established away from protected areas;
- Operation of equipment within the TPZ (unless supervised by the Arborist and/or the Town);
- Inactive, idling equipment is not permitted within the vicinity of the trees. Equipment will be operated in compliance with the Town's Idling Bylaw 6489-11;
- Heavy equipment working around tree canopies must have a deflective pipe on the exhaust stack to direct heat and exhaust away from leaves/the canopy;
- Grade alteration by adding or removing soil or fill, excavating (including for directional or micro-tunneling and boring entering shafts), trenching, topsoil or fill scraping, compaction of soil, dumping, snow storage or disturbance of any kind;
- No fuels, chemicals, or other contaminants will be applied, flushed, stored or dumped including concrete sluice, pool water or backwash, oil, paint, etc.;
- Nailing or stapling into a tree, including attachment of fencing, electrical wire, signage, the stringing of cables, rigging, installation of lights, use of the trunks as a winch or support, temporary power pole, or sign post;
- Installation of parking pads, driveways, sidewalks, walkways, paths, trails, retaining walls, raised gardens, or other landscape works;
- Clearing operations will be identified in areas including the location of proposed buildings, parking lots, right of ways and cut/fill earthwork zones; and
- The flow of water or discharge over a slope or through a natural area is prohibited. Any trees and/or other vegetation located downhill of water flow will be protected from siltation by straw bales and/or siltation fence, and in accordance with the approved TPP.

Negligence to these standards may lead to halt of construction and penalties up to \$10,000 as defined under the Tree Protection By-law No.4640-00.

3.6 Preventing and Minimizing Injury to Protected Trees during Construction

Careful application of maintenance measures in advance of and during construction reduces the potential for injury to protected trees (trees within a TPZ). These measures also promote tree hardiness and help to mitigate construction impacts. The following methods will be considered as part of the recommended measures included in an approved Tree Preservation and Protection Plan:

- establishment of the TPZ;
- pruning in accordance with proper arboricultural methods;

- watering during the dry season;
- mulching as directed by the Arborist;
- root protection and prevention of soil compaction;
- root-feeding and/or root-pruning;
- dry-welling;
- aeration / soil remediation;
- transplanting (refer to **Chapter 4.2.2 Transplanting**);and
- monitoring (refer to **Chapter 5.1 General Inspection and Monitoring Requirements**).

Additional information about these and other maintenance measures is available in [Maintenance Requirements for Protected Trees during Construction](#).

3.7 Responding to Injuries or Damage

Tree Injury includes physical damage to any above ground or below ground portion of a tree. Injury to protected trees (trees within a TPZ) during construction activities may be unavoidable despite everyone's best efforts to plan ahead. Works that require encroachment into the TPZ, such as grading or excavation will injure or damage trees, including their root systems. Additional information about the causes of construction-related tree injuries and potential responses is provided in [Protection Recommendations for Common Construction Related Impacts Causing Tree Injury](#).

An appropriate arboricultural response may be required where there has been a non-significant injury. If an injury is anticipated or occurs, the Project Supervisor is required to immediately contact the Arborist for an evaluation so that appropriate mitigation and recommended measures are provided in a timely manner. The Arborist may be required to submit a written report documenting the injury to the Town and describing the injury. Reports will also include any mitigation recommendations and verify that these recommended measures have been implemented.

During construction activities that directly impact tree roots, an Arborist that is Tree Risk Assessment Qualified may be required to monitor and provide plant health care recommendations to mitigate the negative impacts of these activities.

Mitigation recommendations may include:

- Soil de-compaction (vertical mulching) / aeration;
- Various load-spreading techniques, such as horizontal root protection / mulching of the root zone;
- Canopy Pruning (for clearance of equipment and to avoid damage, etc.);
- Bark tracing;

- Root pruning;
- Fertilization, including deep-root fertilization; and/or
- Other standard arboricultural treatments, as specified by the Arborist.

3.8 Significant Injury Requiring Tree Removal

Unplanned tree removals may become necessary due to unanticipated circumstances or site conditions. Where construction works impact healthy trees approved for retention and protection within a TPZ, authorization from the Town is required prior to any deviation from approved TPP plans. In the event of unauthorized injury or removals to trees, additional compensation may be required in accordance with **Chapter 4: Compensation and Appraisals for Tree Removals**.

Every effort will be made to avoid unplanned tree removals during active construction on a development site. Trees suffering significant injuries as defined below may be removed with the prior approval of the Town, under the direction of the Arborist and in accordance with the following requirements.

Significant Injuries that **may** lead to Tree Removal:

- crown-damage or removal of greater than 30% of a tree's branches or crown;
- roots-exposure, severing, or compaction of more than 25% of the tree's roots within the minimum TPZ; and/or
- stem, bark or trunk wounds greater than 50% of the diameter (or 25% of the circumference) of the tree.

Should any tree designated to remain sustain significant damage due to Contractor negligence, remediation will be as directed by the Arborist and be provided at the Contractor's expense.

When removals are unavoidable or are due to significant injuries, the following requirements apply:

- Approved removals will be executed prior to proposed site works;
- Removals will be provided by an Arborist or tree worker, and will minimize site disturbance and avoid damage to protected trees, soil, and any provided tree protection measures;
- Adjustments to the TPZ as a result of required removals will be determined in consultation with the Arborist and the Town;
- The Arborist may recommend additional tree protection measures to be provided in advance of required tree removals, such as horizontal root protection, the addition of mulch to the root zone, soil aeration, and pruning of deadwood or removal of limbs that may be impacted by construction;

- Tree(s) approved for removal will be clearly marked in advance of removal with paint at a 1.4 metre height as well as at the base of the trunk (stump height) in accordance with the [Ontario Tree Marking Guide](#); and
- Removals due to significant injury will not occur until written approval has been provided by the Town, and the Arborist has confirmed to the Town in writing that any required additional tree protection measures are in place or have been provided for remaining trees designated to remain.

4.0 Compensation and Appraisals for Tree Removals



4.1 Introduction

The removal of any tree reduces the tree canopy in the Town of Whitby. The Town's priority is to avoid any loss of tree canopy, and to enhance the Town's forest canopy. Replacement of lost tree canopy is supported through requirements for compensation.

As a condition of approval for Draft Plan of Subdivision and Site Plan Application, and where required by the Town, Zoning By-Law Amendment, Land Division or Minor Variance, compensation will be required for the unauthorized removal, injury or death of protected trees (trees to be retained) prior to the expiry of an associated warranty period and due to development impacts like construction damage. Compensation will be required for unavoidable removals of existing trees on municipal property (boulevards, parks, open spaces, etc.). Compensation requirements are considered in addition to the typically required landscape and street tree plantings required as part of development approvals.

Unauthorized tree injury or removal may also be subject to penalties under Town of Whitby By-Laws, including the [Tree Protection By-Law 4640-00](#), the [Property and Boulevard Maintenance By-Law 5937-15](#), the [Parks By-Law 7419-18](#) and/or the [Regional Woodland Conservation and Management By-law 30-2020](#).



4.2 Compensation Strategies

Compensation may include on-site replacement plantings, or, where not feasible on the development lands, off-site. The location and quantity of replacement plantings will be determined through consultation with the Town and in accordance with the Town's requirements. The establishment and maintenance of replacement trees, as well as a one-year warranty period are the responsibility of the proponent.

Where unexpected removal of protected trees is anticipated, it may be possible to transplant protected trees (trees to be retained) to an alternate location. Alternatively, a one-time cash contribution equal to the appraised value of the removed existing tree(s) may be received into the Town's Tree Reserve.

Replacement planting, transplanting, and appraisals to determine compensation values are discussed in more detail below.

4.2.1 Replacement Plantings

The following potential replacement planting options may be considered. These are organized in order of priority:

- Replanting within the same area of disturbance / removals;
- Replanting adjacent to the area of disturbance / removals with written authorization of the land owner; or

- Replanting elsewhere within the Town on municipally owned lands, preferably in proximity to the area of disturbance, and with approval from the Town.

Acceptable replacement plantings will be determined by the Town based on the review and approval of landscape plan submissions for the development, where appropriate. Reasonable efforts will be made to compensate for canopy loss through on-site, and/or off-site plantings by the developer. Replacement plantings will be provided at the developer's expense and in accordance with the tree planting standards and specifications provided in the [Town of Whitby Landscape Plan Guidelines](#). Typically, this requires 60 mm caliper deciduous trees, or coniferous trees with a minimum height of 1.8 metres.

The value of replacement plantings does not include the Town's typical tree planting requirements associated with development approvals, such as street trees, park and open space trees, buffer planting requirements, etc. Naturalization plantings that include shrub groupings, perennials and grasses / seeding as well as trees in open spaces may be considered an acceptable alternative where deemed appropriate by the Town. Consultation with the Town will assist in determining the appropriate quantity, type and locations plantings. If appropriate, planting compensation plans will be required to be submitted to, reviewed by and approved by the Town prior to installation.

4.2.2 Transplanting

In circumstances where removal of existing trees or other vegetation cannot be avoided, and existing trees have the potential to be transplanted to avoid injury, an Arborist will be required to provide an assessment of the tree / vegetation to determine its suitability for transplanting. Consideration for tree size, species, site conditions and time of year are necessary prior to electing to transplant existing trees. Recommendations for transplanting will reflect current arboricultural standards and best practices. Impacted existing trees on municipal property may also be assessed by the Town's Arboricultural staff. Tree relocation is approved through consultation with the Town. The Town may require additional warranty securities for transplanted trees. The applicant will assume all relocation and establishment costs, including maintenance during the warranty period.

4.2.3 Cash Contribution to Town Tree Reserve

A cash contribution to the Town's Tree Reserve may be received as compensation that is equal to the appraised value of the removed existing tree(s). The Town may consider compensation through a cash contribution to the Town's Tree Reserve in circumstances where:

- more replacement trees are required than can be reasonably accommodated within the development site;
- the proposed development precludes the establishment of vegetation on-site; and/or

- where trees are removed from Town property due to activities on a development site.

Contribution value will be based on the appraisal of the removed tree(s) or vegetation. HST (13%) and contingency (15%) will be added to appraisal values. Depending on the appraisal technique and at the Town's discretion, an additional 10% administration fee may also be required. This fee contributes to management of the installation costs. Required compensation values may be reduced by deducting the value of any replacement plantings provided. Payment will be submitted to the Corporation of the Town of Whitby Tree Reserve Account to fund future tree planting initiatives on municipal property.

4.3 Appraisals for Existing Trees

The appraised value of an existing tree may be determined through a variety of methods. The technique used to generate an appraised value will be determined through consultation with the Town and will depend on the scope and complexity of each circumstance as well as the type and nature of the trees being removed. A variety of potential appraisal techniques including detailed information about condition rating criteria, depreciation factors and physical deterioration rating criteria, functional limitation rating criteria are discussed in [Tree Appraisal Techniques and Submission Requirements](#).

Where an appraisal is required by the Town, it will be generated by an ISA certified tree appraiser. An appraiser will have sound knowledge of plants, and be familiar with the various legislation and policy requirements impacting their appraisal activities. An appraiser will abide by the Codes of Ethics and Standards of Practice associated with their practice. An appraiser may be required to take on the role of mediator, arbitrator, consulting expert or expert witness and may be held accountable for their opinion. The appraiser will maintain Professional Liability Insurance.

4.3.1 Appraised Values for Municipal Trees

Appraisals for trees on municipal property will be generated by ISA Certified Tree Appraiser staff in the Forestry Division of the Town of Whitby Operations Department. These appraisals rely on the methods published in the Guide for Plant Appraisal, 10th Edition (Second Printing) (Council of Tree and Landscape Appraisers) International Society of Arboriculture, 2019. The Reproduction Cost Method in combination with the Trunk Formula Technique is generally utilized.

The appraised value of the evaluated tree is the result of the total cross sectional area of the trunk at DBH, the unit cost of the trunk area, and three depreciating factors: condition rating, functional limitations and external limitations. Unit costs are as determined by a Regional Plant Appraisal Committee (RPAC). In 2010, the Ontario ISA Chapter of the RPAC determined that unit costs were \$6.51 / cm.

Generally, appraised values for existing trees on public property are generated to assist in the determination of appropriate compensation to the Town for removals

required in support of private development on an adjacent property. Additional costs are typically not included, such as the cost of removal or for tree maintenance required due to damages resulting from construction, as these works are not provided by the Town. This method also does not account for ecological and/or environmental benefits lost due to tree removal.

Compensation for damaged or removed existing trees on public property will be determined on a case-by-case basis. When space is not available for the installation of equivalent value trees in the same area on municipal property, a cash contribution to the Town's Tree Reserve for the future planting of trees on municipal property may be required.

4.3.2 Appraisal Format and Submission Requirements

Appraisal requirements depend on the scope and nature of the assignment. An Appraisal Report may be required to be included with the submission of a Tree Inventory, Arborist Report and/or Tree Preservation Plan.

A checklist identifying the information typically required to be included in an Appraisal Report, as well as an example of a typical format that may be utilized in the generation of an Appraisal is available in [Tree Appraisal Techniques and Submission Requirements](#).



5.0 Inspections, Monitoring and Financial Securities



5.1 General Inspection and Monitoring Requirements

Protected trees (trees identified to remain in a development) are at risk of potential injury during construction. The property owner / developer are responsible for the implementation of all approved tree-protection related plans and for full compliance with the requirements outlined in the TPR.

The Arborist (or professional consultant as approved by the Town) will be retained on site by the property owner / developer with a copy of the approved Tree Preservation Plan (TPP) to ensure the plan is successfully implemented. Monitoring by the Arborist will include communication with the project superintendent and be provided through regular inspections and during the following critical stages of the construction process:

- Assistance with changes in the field impacting tree protection including unexpected injuries, and during approved pruning activities, structural enhancements and/or root pruning;

- During treatments, such as fertilization (if required); and
- During any disturbance or unavoidable activities within or immediately adjacent to the TPZ including grading, excavation, and potential injury to protected trees to ensure trees will not be injured by compaction, cut/fill, drainage, trenching, etc.; the contractor will provide the Arborist with 48-hours' notice in advance of any such activities;

5.2 Required Inspections

5.2.1 Pre-construction Phase

- Establishment of the TPZ including on-site confirmation and acceptance by the Town's Landscape Inspector;

Note: the Arborist will provide written certification to the Town that required tree protection fencing has been satisfactorily installed prior to the issuance of a demolition, building, fill and/or site alteration permits.

- Prior to commencement of construction, the contractor will conduct a pre-construction meeting to discuss tree protection requirements with construction workers, the Arborist, and Town's Landscape Inspector;
- The Contractor will be thoroughly informed by the Developer of their contractual obligations regarding tree preservation. Contractors are responsible for all protection techniques, to the satisfaction of the Arborist/Town; and
- All contractors, site supervisors, and project managers will also be informed of the Tree Protection requirements at a pre-construction meeting and be informed that they are required to adhere to the recommendations, direction and supervision of the Arborist.

5.2.2 Construction Phase

- Inspections in accordance with the requirements of the approved Tree Preservation and Protection Plan and/or Arborist Report;
- Regular monitoring to provide preventative and/or corrective action and/or recommendations when necessary including tree markings, removals, implementation of any recommended maintenance and/or mitigation measures (boring, pruning, mulching, etc.);
- Consideration for changes in health and structural condition of protected trees (lean, cracks, evidence of cavity nesting birds or insects, growths on the trunk or along roots) as well as at changes in drainage patterns, soil conditions, sun and wind exposure; and

- The contractor will provide the Arborist with 48-hours' notice in advance of any such activities.

5.2.3 Post-construction Phase

Note: Monitoring and TPP warranty period requirements associated with subdivision development will be determined in consultation with Town's Planning and Development Department.

- At the completion of construction activities and/or site alteration, all protected trees and vegetation are required to be inspected by the Arborist and the Town to evaluate the impacts of construction on the overall health, vigor, and structural stability of the protected trees, to evaluate their suitability for continued retention, and to provide direction for any final mitigation measures or maintenance requirements necessary to maintain tree health post construction;
- Removal of tree protection barriers (upon approval of the Town);
- Additional post-construction inspections may be required at the discretion of the Town to evaluate the ultimate success of the tree protection measures;
- Inspection and certification to the Town of the installation of any requirements for compensation plantings; and
- Post-construction inspections may be required up to a year or more, in accordance with the recommendations of the approved TPP/Arborist report, after preliminary acceptance of landscape works by the Town.

5.3 Schedule and Reporting

An Inspection and Reporting schedule is required to be included as part of the approved Tree Preservation Plan / Arborist Report. The schedule will identify the anticipated timing and frequency of monitoring inspections, and address the type of information that will be included in the Inspection Reports. Inspection reports are required to be submitted to the Town after each inspection.

Reports will include any additional recommended tree preservation and maintenance measures as well as detailed descriptions of:

- site conditions including the condition of the protected trees, protection measures, any action taken, and any additional recommendations;
- unanticipated removals;
- tree injuries;
- TPZ issues and response recommendations / methods;
- photographic records of site conditions and protected tree(s); and
- protocols for failure of and/or damage to tree protection measures.

5.4 Financial Securities and Release Requirements

Where tree protection measures are required as a condition of a development agreement or plan approval, the Town requires financial securities for these measures. The value of these securities will be determined by the Town, and will be held for a specified period of time, depending on the type of scope and complexity of each circumstance.

A reduction or release of financial securities will be provided once all construction activities are complete. Prior to consideration for a reduction or release of the securities, the Town may require certification from the Arborist that the protected tree(s) are in good health and condition, there has been no encroachment into the tree protection zone (TPZ) and the protected trees have not been injured or destroyed as a result of the construction activities. A final Inspection for Satisfactory Completion may also be required to facilitate a reduction or release of a security value.

In accordance with the conditions of the associated development agreement or permit, it is the developer / property owner's responsibility to contact the Planning and Development Department to request an Inspection for Satisfactory Completion, as well as reduction or a release of any associated financial security values. These requests will occur at the completion of all construction and landscaping activities.

6.0 Additional Resources

The preparation of Tree Inventory Plans (TIP), Tree Preservation and Protection Plans (TPP), Arborist Reports, or other required submission materials shall consider the most recent editions (or as amended) of policies, standards, guidelines and requirements. Links to resources not identified elsewhere in these requirements are provided below:

6.1 Town of Whitby:

Planning and Development Department

- [Site Plan Approval Manual 2018](#)
- [Site Plan Approval Manual for Oak Ridges Moraine, Environmentally Sensitive and Hazard Land Areas 2015](#)
- [Whitby Official Plan](#)
- [Tree Protection By-Laws and Tree Removal Permits](#)
 - [Tree Removal Permit Application Submission Requirements](#)

Additional Reference Information:

- [Glossary of Tree Terms](#)
- [Bibliography](#)

Public Works Department

- [Design Criteria and Engineering Standards](#)
- [Driveway Widening and Curb Cuts](#)
- [Tree Services](#)
 - [Who To Contact at the Town of Whitby about Trees](#)
 - [Impacts to Existing Trees on Public Property](#)
 - [Tree Species Intolerant of Construction](#)
 - [Where to find More Information about Trees](#)

6.2 Other:

Ontario Tree Marking Guide-Version 1.1 (Technical Series)

<https://www.ontario.ca/document/tree-marking>

A guide prepared by the Ministry of Natural Resources to support delivery of the Provincial Tree Marker Training Program and to provide operational guidance to tree markers who employ the partial-cut Silvicultural system in Ontario.

7.0 Details and Notes

Detail 700

Light Duty / Temporary Tree Protection Fencing

DRIP LINE: THE WIDTH OF THE TREE CROWN AT ITS WIDEST BRANCHING, 360 DEGREES AROUND THE TREE

TREE PROTECTION FENCE TO BE 1200mm HEIGHT, HEAVY-DUTY / WIRED ORANGE PLASTIC WEB SNOW FENCING, OR APPROVED EQUIVALENT. PROTECTIVE FENCING FOR INDIVIDUAL TREES SHALL BE POSITIONED IN ACCORDANCE WITH DISTANCES IDENTIFIED IN TABLE 1: TREE PROTECTION ZONES. APPROVED SIGNAGE SHALL BE PROVIDED EVERY 15m OF FENCE LENGTH.

EXISTING GRADE TO BE MAINTAINED AT FULL LIMITS OF PROTECTIVE FENCING

(50mm X 50mm X 6mm) STEEL T-BARS, 2400mm LENGTH, SPACED 1200mm APART MAXIMUM ON CENTRE AND TO AVOID VISIBLE SURFACE ROOTS. T-BARS SECURED TO APPROVED TREE PROTECTION FENCE WITH #10 GALVANIZED WIRE AT THREE EVENLY SPACED LOCATIONS ALONG LENGTH OF T-BAR. T-BARS TO BE INSTALLED AT MINIMUM 1200mm DEPTH BELOW GRADE, TYPICAL ENTIRE LENGTH OF PROTECTIVE FENCING.

PROTECTIVE FENCING FOR WOOD LOTS OR GROUPS OF TREES TO BE POSITIONED AT A MINIMUM DISTANCE OF 1000mm BEYOND THE DRIP LINE OF EACH WOOD LOT OR GROUP OF TREES TO BE PRESERVED, OR AS DIRECTED BY THE CONSULTING ARBORIST.

TABLE 1: TREE PRESERVATION ZONE

DBH (Diameter at Breast Height) Trunk Diameter (cm)	Minimum Protection Zone (TPZ) Distance Required (m)
less than 10	1.2
10 - 29	1.8
30 - 40	2.4
41 - 50	3.0
51 - 60	3.6
61 - 70	4.2
71 - 80	4.8
81 - 90	5.4
91 - 100	6.0
> 100	6cm / 1cm dia.

* measurement of DBH taken at 1.4m above grade
 * TPZ distances measured from outside edge of trunk flare

NOTES:

- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED
- ALL PROTECTIVE FENCING TO BE LOCATED AS DIRECTED BY I.S.A CERTIFIED ARBORIST
- TPZ FENCING SHALL NOT BE ATTACHED TO TREES
- ALL TREE PROTECTION SHALL BE IN PLACE AND MUST BE INSPECTED AND APPROVED BY THE TOWN PRIOR TO ANY CONSTRUCTION ACTIVITIES, AND REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES HAVE CONCLUDED, OR AS DIRECTED BY THE CONSULTING ARBORIST
- NO CONSTRUCTION ACTIVITY, MATERIAL STORAGE, GRADE CHANGES, SURFACE TREATMENT OR EXCAVATIONS OF ANY KIND IS PERMITTED WITHIN THE TREE PROTECTION ZONE
- REFER TO TREE INVENTORY & PRESERVATION PLAN FOR REQUIRED FENCING TYPE
- REFER TO TOWN OF WHITBY STANDARD #702 FOR GENERAL TREE PROTECTION NOTES

THE CORPORATION OF THE TOWN OF WHITBY PLANNING & DEVELOPMENT DEPARTMENT

CHECKED: *[Signature]* APPROVED: *[Signature]* SCALE: N.T.S.

LIGHT DUTY TREE PRESERVATION FENCE

DWG. DATE: JANUARY 2021
 REVISION No.: 002
 REVISION DATE: MAY, 2022
 DWG No. 700

Detail 701

Heavy Duty Tree Protection Fencing

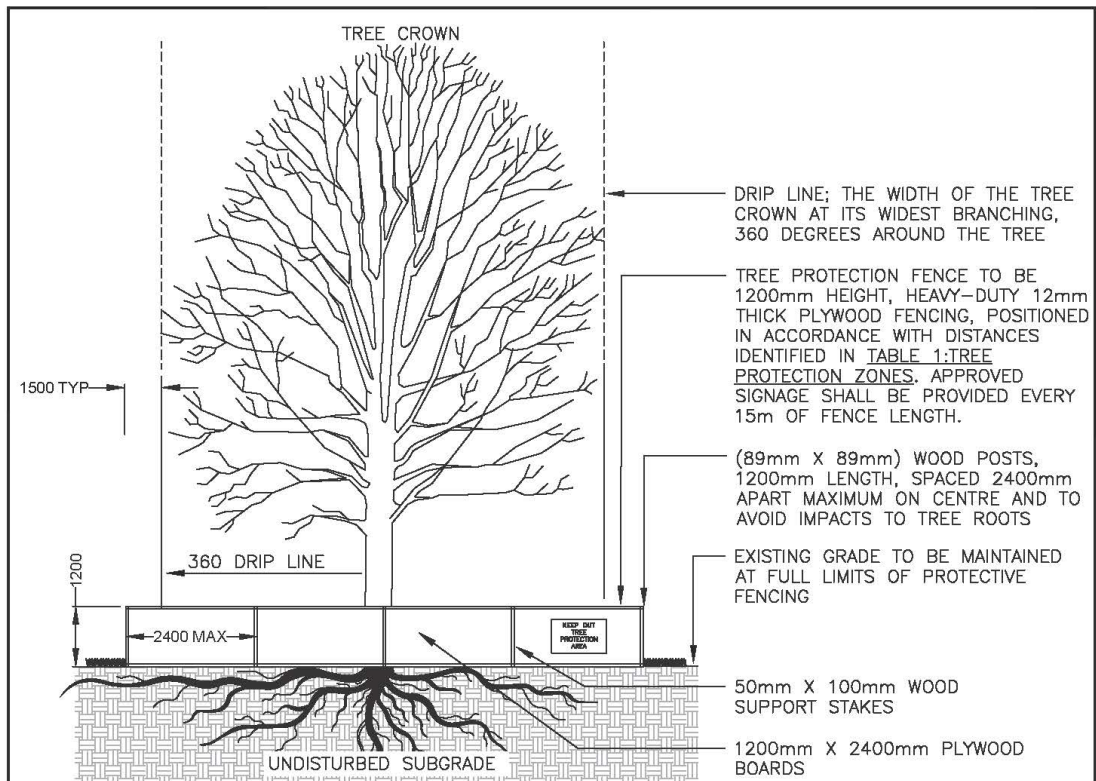
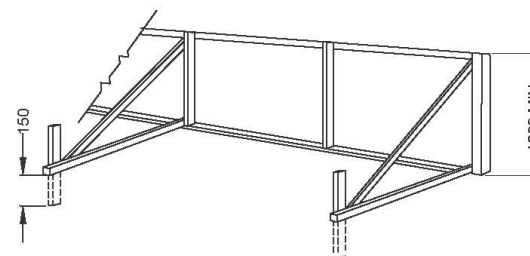


TABLE 1: TREE PRESERVATION ZONE

DBH (Diameter at Breast Height) Trunk Diameter (cm)	Minimum Protection Zone (TPZ) Distance Required (m)
less than 10	1.2
10 - 29	1.8
30 - 40	2.4
41 - 50	3.0
51 - 60	3.6
61 - 70	4.2
71 - 80	4.8
81 - 90	5.4
91 - 100	6.0
> 100	6cm / 1cm dia.

* measurement of DBH taken at 1.4m above grade
 * TPZ distances measured from outside edge of trunk flare

FENCE CONSTRUCTION



* all connection points to be rigid
 ** all supporting stakes and hoarding posts to be wood 50mm x 100mm members
 *** dashed line represent below grade

NOTES:

1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED
2. ALL PROTECTIVE FENCING TO BE LOCATED AS DIRECTED BY I.S.A CERTIFIED ARBORIST
3. TPZ FENCING SHALL NOT BE ATTACHED TO TREES
4. ALL TREE PROTECTION SHALL BE IN PLACE AND MUST BE INSPECTED AND APPROVED BY THE TOWN PRIOR TO ANY CONSTRUCTION ACTIVITIES, AND REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES HAVE CONCLUDED, OR AS DIRECTED BY THE CONSULTING ARBORIST
5. NO CONSTRUCTION ACTIVITY, MATERIAL STORAGE, GRADE CHANGES, SURFACE TREATMENT OR EXCAVATIONS OF ANY KIND IS PERMITTED WITHIN THE TREE PROTECTION ZONE
6. REFER TO TREE INVENTORY & PRESERVATION PLAN FOR REQUIRED FENCING TYPE
7. REFER TO TOWN OF WHITBY STANDARD #702 FOR GENERAL TREE PROTECTION NOTES

THE CORPORATION OF THE TOWN OF WHITBY		PLANNING & DEVELOPMENT DEPARTMENT	
CHECKED <i>[Signature]</i>	HEAVY DUTY TREE PRESERVATION FENCE	DWG. DATE: JANUARY 2021	
APPROVED <i>[Signature]</i>		REVISION No.: 002	
SCALE: N.T.S		REVISION DATE: MAY. 2022	DWG No. 701

1. THE AREA WITHIN THE DRIPLINE OF ALL EXISTING TREES AND / OR AREAS TO BE PROTECTED SHALL BE PROPERLY PROTECTED WITH TREE PROTECTION FENCING AS DETAILED ON THE APPROVED TREE INVENTORY AND PRESERVATION PLAN. ALL EXISTING TREES WHICH ARE TO REMAIN ON SITE, OR ON ADJACENT PROPERTIES WHICH MAY BE AFFECTED, WILL BE FULLY PROTECTED WITH PROTECTIVE FENCING ERECTED MINIMUM 1.0m OUTSIDE THE DRIPLINE OF TREES, OR IN THE CASE OF INDIVIDUAL SPECIMEN TREES, AS PER TABLE 1: TREE PROTECTION ZONES, PRIOR TO COMMENCEMENT OF ANY SITE DISTURBANCE, CLEARING, DEMOLITION AND/OR CONSTRUCTION, TO THE SATISFACTION OF THE ISA ARBORIST AND THE TOWN.
2. GROUPS OF TREES AND OTHER EXISTING PLANTINGS TO BE PROTECTED WILL BE DONE IN A LIKE MANNER WITH SIMILAR STRUCTURES AROUND THE ENTIRE CLUMP(S).
3. AREAS WITHIN THE PROTECTIVE FENCING WILL REMAIN UNDISTURBED, AND WILL NOT BE USED FOR THE STORAGE OF BUILDING MATERIALS, EQUIPMENT, SURPLUS SOILS, OR CONSTRUCTION DEBRIS.
4. ALL SUPPORTS AND BRACING SHALL BE IN ACCORDANCE WITH APPLICABLE DETAIL. ALL SUCH SUPPORTS SHOULD MINIMIZE DAMAGING ROOTS OUTSIDE THE TREE PROTECTION FENCE.
5. NO CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT OR EXCAVATIONS OF ANY KIND ARE PERMITTED WITHIN THE TREE PROTECTION ZONE.
6. NO RIGGING CABLES WILL BE WRAPPED AROUND OR INSTALLED IN TREES AND / OR PROTECTED AREAS.
7. NO CONTAMINANTS WILL BE DUMPED OR FLUSHED WHERE FEEDER ROOTS OF PROTECTED TREES AND / OR AREAS EXIST.
8. THE DEVELOPER AND / OR CONTRACTOR WILL TAKE EVERY PRECAUTION NECESSARY TO PREVENT DAMAGE TO TREES, SHRUBS OR OTHER PLANTS TO BE RETAINED.
9. DAMAGED LIMBS WILL BE PRUNED TO REMOVE DAMAGED BRANCHES. ALL PRUNING CUTS WILL BE MADE TO A GROWING POINT SUCH AS A BUD, TWIG OR BRANCH. NO STUBS SHOULD BE LEFT. POOR CUT LOCATION, POOR CUT ANGLE AND TORN CUTS ARE NOT ACCEPTABLE. PRUNING OF THOSE TREES WHERE HEAVY BLEEDING MAY OCCUR TO BE POSTPONED UNTIL IN FULL LEAF. DO NOT DAMAGE LEAD BRANCHES OR REMOVE SMALLER TWIGS ALONG MAIN BRANCHES.
10. WHERE ISA CERTIFIED ARBORIST APPROVES, LIMBS OR PORTIONS OF TREES ARE TO BE REMOVED TO ACCOMMODATE CONSTRUCTION WORK, THEY WILL BE REMOVED CAREFULLY IN ACCORDANCE WITH ACCEPTED ARBORICULTURE PRACTICE AND MEASURES WILL BE TAKEN TO PREVENT ANY FURTHER DAMAGE.
11. WHERE ROOT SYSTEMS OF PROTECTED TREES ARE EXPOSED DIRECTLY ADJACENT TO OR DAMAGED BY CONSTRUCTION WORK, THEY WILL BE TRIMMED NEATLY AND SPRAYED WITH AN APPROVED ANTIDESSICANT TO PREVENT DRYING, AND THE AREA IMMEDIATELY BACK-FILLED WITH APPROPRIATE MATERIAL.
12. ROOTS OF EXISTING TREES DISTURBED BY EXCAVATION WILL BE CLEANLY PRUNED, AS DIRECTED BY THE ISA CERTIFIED ARBORIST. TOOLS MUST BE DISINFECTED AFTER PRUNING TREES AND WHEN PRUNING MANY MEMBERS OF THE SAME GENERA, TO PREVENT THE SPREAD OF DISEASE.
13. IF GRADES AROUND TREES TO BE PROTECTED ARE LIKELY TO CHANGE, PRECAUTIONS MUST BE UNDERTAKEN TO THE SATISFACTION OF THE ISA CERTIFIED ARBORIST AND THE TOWN. THESE PRECAUTIONS ARE THE RESPONSIBILITY OF THE DEVELOPER AND / OR CONTRACTOR. THESE PRECAUTIONS MAY INCLUDE DRY WELLING AND ROOT FEEDING, AND MUST BE IN ACCORDANCE WITH THE TOWN TREE PROTECTION REQUIREMENTS.
14. TREES THAT HAVE DIED OR BEEN DAMAGED BEYOND REPAIR WILL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE BY TREES OF A SIMILAR SIZE AND SPECIES AND SUCH SIZE AND SPECIES AS MAY BE APPROVED BY THE ISA CERTIFIED ARBORIST OR THE TOWN.
15. ANY TREES DESIGNATED FOR REMOVAL WILL HAVE THE STUMPS COMPLETELY EXCAVATED AND REMOVED UNLESS SUCH REMOVAL WILL ADVERSELY AFFECT EXISTING TREES / ECOLOGY TO REMAIN, IN WHICH CASE TRUNKS WILL BE CUT FLUSH TO EXISTING GRADE.
16. ALL WOODY MATERIAL REMOVED WILL BE RECYCLED AS DIRECTED BY THE TOWN OF WHITBY, AND USED FOR FENCE POSTS, SAW LOGS, FIREWOOD OR WOODCHIPS WHERE APPROPRIATE. MATERIAL TO REMAIN ON THE SITE WILL BE DROPPED AND BUCKED TO A MAXIMUM 1.8m LENGTH.

THE CORPORATION OF THE TOWN OF WHITBY		PLANNING & DEVELOPMENT DEPARTMENT	
CHECKED	<i>[Signature]</i>	GENERAL TREE PRESERVATION AND PROTECTION NOTES	DWG. DATE: JANUARY 2021
APPROVED	<i>[Signature]</i>		REVISION No.: 002
SCALE:	N.T.S		REVISION DATE: MAY. 2022
			DWG No. 702

KEEP OUT

TREE PRESERVATION ZONE (TPZ)

All construction related activities, including grade alterations, excavations, soil compaction, any materials or equipment storage, disposal of liquid and vehicular traffic are NOT permitted within this Tree Preservation Zone

This tree protection barrier must remain in good condition and must not be removed or altered without the authorization of the Town of Whitby

Concerns or inquiries can be directed to 905.430.4306

NOTES:

1. INSTALL TREE PROTECTION SIGN ON FENCE FACING CONSTRUCTION ZONE AT 100 METER INTERVALS
2. SIGN MUST BE MOUNTED ON AT LEAST ONE SIDE OF THE FENCE
3. THE SIGN MUST BE CLEARLY VISIBLE
4. THE SIGN SHOULD BE A MINIMUM OF 40CM X 60CM, AND MADE OF WHITE COROPLAST BOARD OR EQUIVALENT MATERIAL

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: N.T.S

KEEP OUT SIGN FOR TREE PROTECTION ZONE

DWG. DATE: JANUARY 2020

REVISION No.:

REVISION DATE:

DWG No. 703

For more information, contact
Planning and Development 905.430.4306 or visit

whitby.ca/Tree Protection Requirements for New Development

