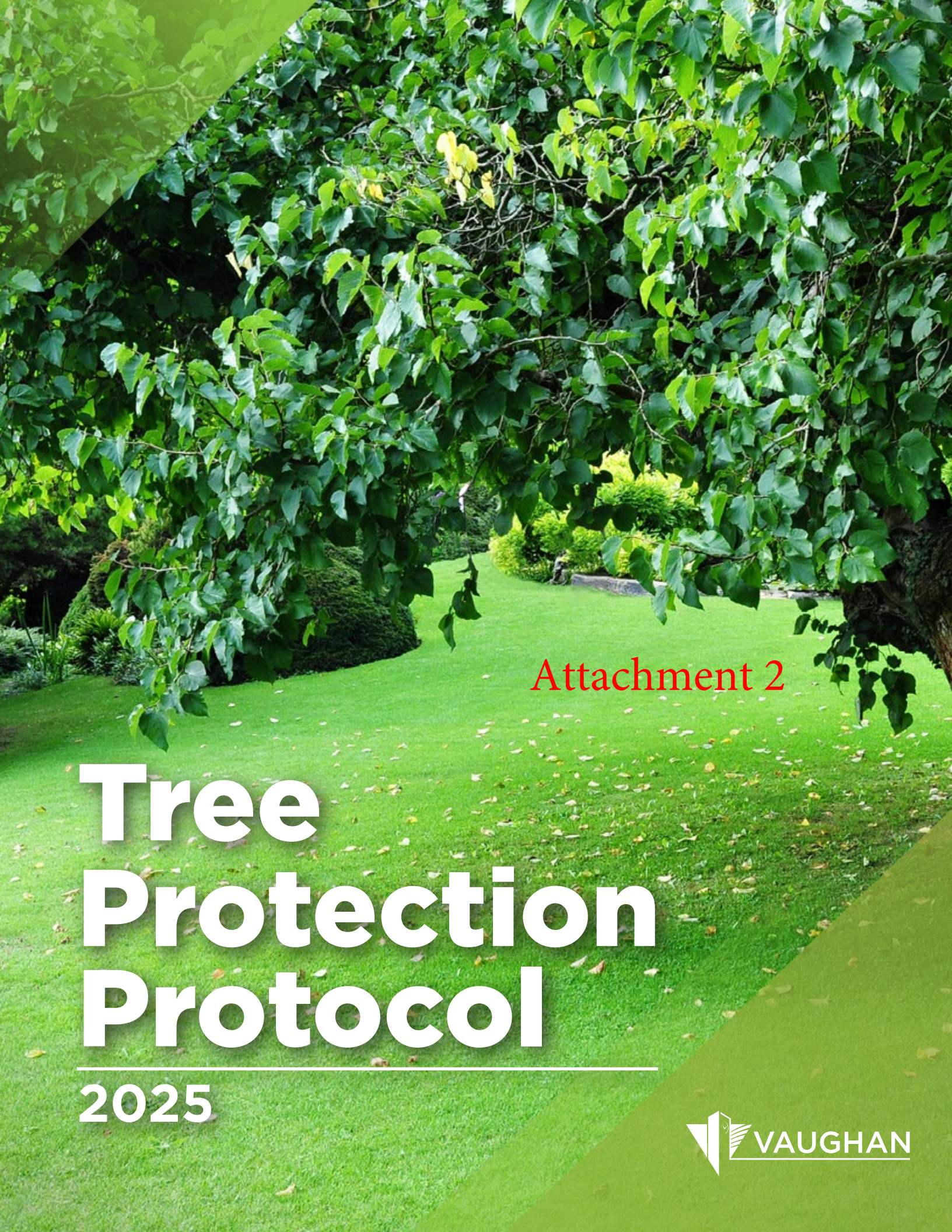




Attachment 2

Tree Protection Protocol

2025

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1. Background

The City of Vaughan recognizes the significant role the urban tree canopy plays in providing an improved quality of life. Preserving and protecting healthy trees has been identified as one of the five over-arching goals of Vaughan's Urban Forest Management Plan and Woodland Management Strategy, which will help the City achieve its commitment to maintain and enhance the urban forest and the environment. Considering tree protection in the initial stages of planning will result in enhanced protection of trees, and where trees are removed, will provide clear replacement procedures and standards. The Tree Protection Protocol will implement procedures to maintain and enhance the City's tree canopy through the development approval process.

The purpose of the Protocol is to outline the procedures and standards required by the City to protect public and private trees, and to serve as a guideline for the implementation of Vaughan's Tree Protection By-law, as amended or replaced.

The Protocol provides the following:

- Identifies the roles, responsibilities, policies and guidelines for City departments regarding tree protection, tree removal permitting, tree replacements and compensation.
- Provides direction on the technical report contents required for staff to assess how proposed development, construction and landscaping projects will impact the urban forest.
- Establishes a "Tree Protection Agreement" (TPA) that will secure tree preservation, tree compensation and tree removal services.
- Creates a resource for both City staff and external stakeholders on how to manage the preservation, removal and replanting of trees city-wide.
- Provides canopy replacement guidelines for all instances where trees are removed on public or private land.



Crimson Spire Oak / Quercus robur x alba 'Crimschmidt'

The protocol is intended to achieve the following:

- Maintain and enhance the urban tree canopy.
- Ensure consistent procedures and standards across all City departments involved in the review of tree protection measures.
- Increase public awareness about the benefits of protecting the city's urban forest and the preservation of mature trees.

The Protocol does not apply to Regional and Crown Lands and Toronto and Region Conservation Authority (TRCA) owned lands. The protection and the compensation of those areas will be reviewed by the respective agency if required.

All tree removals should abide by and conform with policies and regulations outlined in the *Endangered Species Act*, the *Fish and Wildlife Conservation Act* and the *Migratory Birds Convention Act*, and any other applicable law.

2. Tree Protection Regulation and Approval departments

The roles and responsibilities of various City departments, as well as the authority to permit tree removals, approve tree preservation measures and collect securities to ensure the protection of the urban forest during the development review process are provided below.

For construction projects of any kind led by City departments, the tree protection and compensation measures set out in this protocol shall be followed, although permits to remove trees are not required. All tree protection and compensation measures shall be executed and funded by the constructing department. In cases where all required replacement trees cannot be planted on the construction site, canopy replacement may be achieved by alternate means in collaboration with the Forestry Permitting and Plan Review division.

2.1. Tree Protection By-law

Tree Protection By-law regulates the protection, planting, maintenance and removal of trees on public lands and private property in the city of Vaughan. This by-law provides details on City authority, definitions and interpretations, prohibited activities, permitting requirements, duties of permit holders, enforcement powers and more, for trees on private property 20 centimetres and above in diameter as well as City-owned trees of all sizes.

2.2. Development and Parks Planning department

The Urban Design and Cultural Heritage division (Urban Design), in the Development and Parks Planning department, reviews and provides comments on development applications, Cultural

Heritage applications, Draft Plan of Subdivision, Site Alteration Permits and Development and Spine Services Agreements, projects administered by external agencies, such as but not limited to York Region, Metrolinx and the TRCA.

In cases where the process of the Pre-Application Consultation (PAC) is followed, the applicants will be informed in greater detail on tree protection requirements by Urban Design, and where necessary, by Policy Planning and Special Programs staff.

The Parks and Open Space Planning division may have an interest in applications – including, but not limited to development, site alteration and Draft Plan of Subdivision applications – wherein trees in public open spaces or parks may be impacted. The team will provide comments as subject matter experts during the review of such applications.

The various development application processes include:

Block Plans

Development and Parks Planning co-ordinates the review of natural features within the Block Plan review area with Policy Planning and Special Programs department. The review is based on the Vaughan Official Plan (VOP) Policies and the Natural Heritage Network Strategy findings along with other related studies, such as Master Environmental Servicing Plan (MESP) and Environment Impact Studies (EIS) that are the commonly required documents by the City as they include information that is assessed to help inform tree protection.

Development Applications (Draft Plans of Subdivision and Site Development Applications)

Draft Plan of Subdivision and Site Development Applications are led by the Development and Parks Planning department. Urban Design, Policy Planning and Special Programs, and Forestry Permitting and Plan Review (FPPR) staff will be involved in the review of documents related to tree management and determine the potential impacts of the development on existing trees and natural heritage. As part of the Draft Plan of Subdivision/ Site Development Application processes, Urban Design and FPPR staff review the application to assess the impact to trees or vegetation and provide recommendations to protect trees prior to the application approval. When Urban Design and FPPR staff concur with all the proposed recommendations included in the submitted arborist report, they will provide conditions to the Development and Parks Planning department as part of the application approval process. These conditions will ensure tree preservation and compensation will occur in a manner pursuant to all recommendations of the technical report.

Development and Parks Planning staff will not issue the clearance of any conditions until such time as the tree related conditions are reviewed to the satisfaction of the Urban Design and FPPR staff. Any tree removals proposed during an application are subject to the requirements of this Protocol and the Tree Protection By-law. Any natural heritage impacts are subject to review by Policy Planning and Special Programs and the Toronto and Region Conservation Authority approvals.

A security is required for a Draft Plan of Subdivision/ Site Development Application and an inspection will be conducted by FPPR staff.

Heritage Permits

Heritage Permit approval and inspection is led by the Cultural Heritage Division in collaboration with the Development and Parks Planning staff.

Cultural Heritage staff engage Urban Design, Policy Planning and Special Programs and FPPR staff to review tree and natural heritage implications on a property subject to a Heritage Permit application. Designation of an area as a Heritage Conservation District (HCD) is an important means of protecting a Cultural Heritage Landscape to control new development and site alteration within the district.

As part of the Heritage Permit, the Cultural Heritage Specialist and Urban Design staff will review all development applications within an HCD to ensure the heritage landscape will be protected and conserved through the proposed development, as well as ensure development will not affect any trees or vegetation and provide recommendations to protect preserved trees prior to approval. Urban Design will request an arborist report/Tree Inventory and Management Plan on a property which contains private and/or adjacent public trees to Draft Plans of Subdivision and Site Development Applications.

The Cultural Heritage Specialist will consider/prioritize the merits of the Heritage Permit application based on applicable heritage policies/law and collaborate with the Urban Design staff to make sure Cultural Heritage comments are complementary.

When Urban Design and FPPR staff concur with all the proposed recommendations included in the submitted arborist report, they will provide conditions to the Cultural Heritage Specialist as part of the application approval process. These conditions will ensure tree preservation and compensation occur in a manner pursuant to all recommendations of the technical report. Any tree removals for a Heritage Permit are subject to the City's Tree Replacement Requirements.

2.3. Parks, Forestry and Horticulture Operations department

The FPPR division, in the Parks Forestry and Horticulture Operations department, currently reviews and provides comments for Committee of Adjustment (CoA), Site Plan and Draft Plan of Subdivision applications, Block Plans, Heritage Permits, Site Alteration Permits, Spine Services Agreements, Access Agreements, construction projects delivered by all City departments and projects delivered by external agencies including, but not limited to, the Regional Municipality of York (York Region), Metrolinx and the TRCA. The FPPR division also administers and issues all tree-related permits and performs inspections of all tree preservation measures required by the City for any type of construction project.

For development applications, tree preservation and removal permissions are currently administered by the FPPR division through the Tree Protection Agreement (TPA) process, in consultation with other City departments including Policy Planning and Special Programs and Urban Design.

When this Protocol is implemented by the Development and Parks Planning department, the FPPR division will also review and comment on all arborist reports, Tree Management Plans and landscape plans submitted as part of the development application review processes to determine appropriate individual tree compensation requirements and ensure compliance with tree preservation standards.

2.4. Policy Planning and Special Programs department

The Policy Planning and Special Programs (PPSP) department reviews and provides input, including compensation requirements, on applications that contain natural heritage features and woodlands, significant forest and bio-forests as determined by the City. Where applicable, this is undertaken in consultation with York Region and the TRCA. The PPSP department also reviews and comments on applications that have potential impacts on Species at Risk (as defined by the Endangered Species Act, the Fish and Wildlife Conservation Act, the Migratory Birds Convention Act).

PPSP staff provide natural heritage planning advice in the development review process (e.g., Draft Plan of Subdivision, Site Development, CoA applications) at the Pre-Application Consultation meeting, PPSP staff will request an Environmental Impact Study/Natural Heritage Evaluation for any proposed projects that may potentially impact natural heritage features such as woodlands. It is important to place the tree protection procedure and Protocol within the context of policy protection for woodlands and maintenance of significant woodlands. Where a stand or cluster of trees meets the definition of a woodland under the VOP, then woodland policies should be reviewed to determine the appropriate steps for protection and/or compensation. Where a stand of trees does not meet the criteria to be defined as woodland, then protocols for addressing individual trees are followed.

PPSP is responsible for two over-arching policy documents that guide urban growth and environmental management in the City: VOP, as amended or replaced, and the Community Sustainability and Environmental Master Plan (Green Directions Vaughan). The York Region

Official Plan and VOP conform to the Provincial Policy Statement (PPS) 2024. Specific responsibilities of the PPSP department in relation to woodland management and tree protection are noted below:

- Developing environmental, natural heritage and green infrastructure policies as part of the VOP and supporting guidelines such as the Environmental Management Guide. This responsibility includes delineation of the Natural Heritage Network (NHN) in Schedule 2 of the VOP and maintenance of the inventory of natural features in a Geographic Information System (GIS) database, including woodlands.
- Developing policies for woodland protection and woodland compensation pertaining to the maintenance of the NHN.
- Implementing NHN policies and delineation through the review of development applications under the Planning Act and infrastructure projects under an Environmental Assessment process.
- Supporting improvements in the broader urban canopy, such as through the review of environmental matters related to development applications, the development of the Sustainability Metrics, and future efforts regarding the provision of “green infrastructure” (as now defined in the PPS).
- Researching policy direction and best practices for green infrastructure and the urban canopy and connections to community health, the provision of ecosystem services, and in relation to the maintenance of biodiversity.
- Reviewing Master Environment and Servicing Plan (MESP) submissions for Block Plans and/or Secondary Plans, and reviewing Environmental Impact Study (EIS) submissions related to Draft Plan and Site Development Applications.

2.5. Office of the City Clerk

The CoA has been appointed by Vaughan Council to adjudicate applications for Minor Variance and Consent under the *Planning Act*. CoA applications are led by the Office of the City Clerk in collaboration with the Development and Parks Planning and Development Engineering departments. During the technical review for all CoA applications, Development and Parks Planning staff engage PPSP and FPPR staff to review potential tree and natural heritage implications that may result from a CoA application.

As part of the CoA review process, staff review the application to assess the impact that development will have on trees or vegetation and provide comments with respect to the proposed tree preservation measures prior to approval. Staff will request an arborist report/Tree Inventory and Management Plan on a property which contains private and/or public trees that were not subject to a related Draft Plan of Subdivision/Site Plan application.

When FPPR staff concur with all the proposed recommendations included in the submitted arborist report, conditions will be provided to the Development and Parks Planning staff for inclusion in CoA application approval recommendations. These conditions will ensure tree preservation and tree compensation will occur in accordance with the recommendations of the staff report.

Development and Parks Planning staff will not issue clearance of any conditions until such time as the conditions are reviewed to the satisfaction of the Urban Design and FPPR staff. Any tree removals for a CoA application are subject to the tree canopy compensation per Section 4 of this Protocol. Any natural heritage impacts are subject to discussions and any conditions provided by the PPSP department.

2.6. Development Engineering department

Site Alteration Permit approval and inspection is led by the Development Engineering (DE) department. DE staff engage Urban Design, PPSP and FPPR staff to review potential tree and natural heritage implications that may result through a Site Alteration permit process.

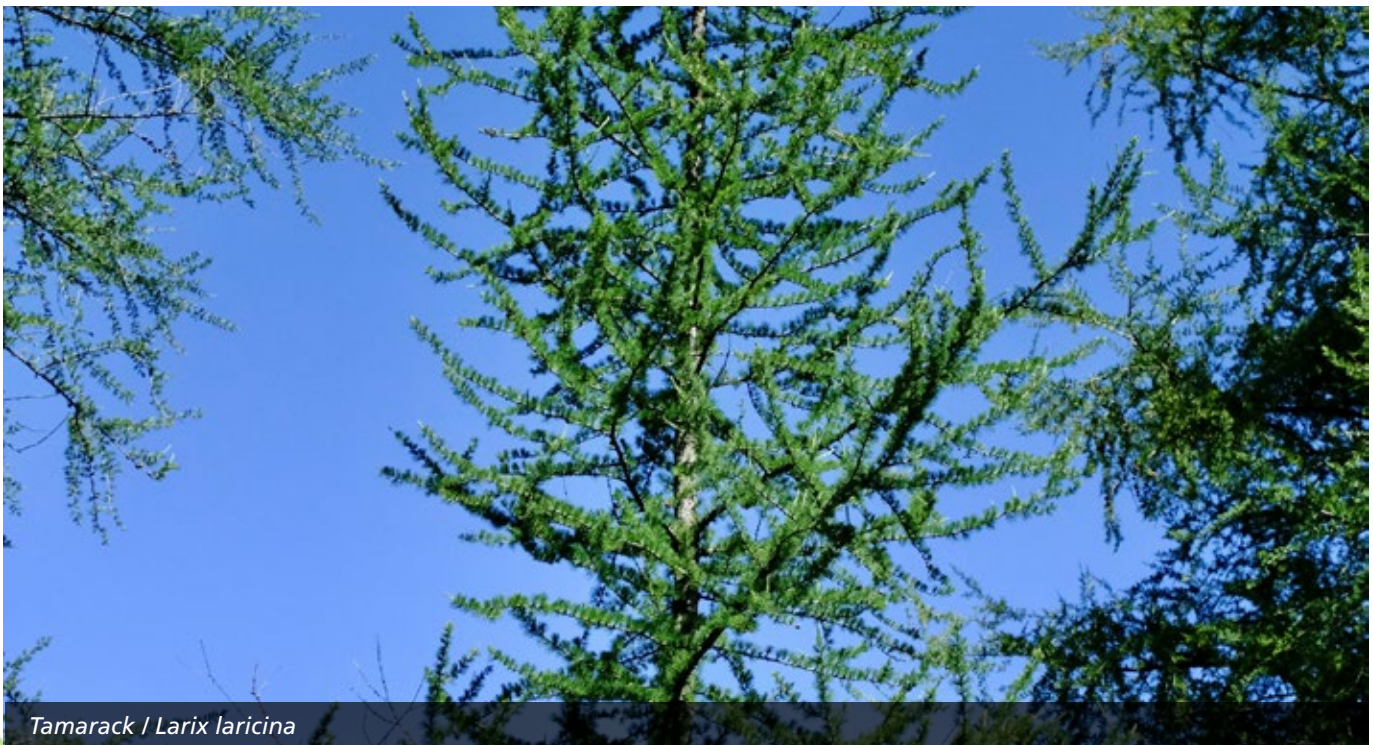
As part of the Site Alteration permit process, staff review the application to ensure site works, such as the placement of fill, will not affect any trees or vegetation within the project boundary (within the private and public boundary) and provide recommendations to protect trees prior to issuance of a Site Alteration permit. Any tree removals for Site Alteration Permits are subject to the City's tree canopy replacement requirements.

2.7. Building Standards department

In the cases of a building permit applications, Building Standards notifies the FPPR division that an application has been made through an automated system. In cases where trees have been impacted by construction activities, Building Standards may advise By-law and Compliance, Licensing and Permit Services. Although building inspectors are not provided with direct authority in tree related matters, they may advise By-law and Compliance, Licensing and Permit Services if they notice a tree being impacted by construction activity.

For non-development related Building Permit applications, the Building Standards department may send an advisory message to the FPPR division that a permit has been applied for.

Building Standards staff will affix a notification stamp on non-development Building Permit drawings advising that a Tree Permit needs to be obtained prior to any tree removals.



Tamarack / Larix laricina

3. Tree Protection Protocol

The City uses two different processes and associated sub-processes for ensuring the protection and replacement of the urban tree canopy. The following sections detail steps and technical requirements for the issuance and execution of:

1. Tree Protection Agreements (TPA)
2. Tree Removal/Injury and Protection Permits

3.1. Tree protection agreement: outline and technical requirements

The TPA is a mechanism by which the City may review impacts to the urban tree canopy resulting from proposed developments at early stages of the development review process. When a TPA is implemented, canopy loss due to tree removals, as well as proposed tree preservation measures may be reviewed and approved by the City in advance of the execution of a development agreement, Spine Services Agreement, Subdivision Agreement or Site Plan Agreement.

The TPA will secure public and privately-owned trees that may be impacted by the proposed project. Applicants submitting any of the following applications may be required to enter a TPA with the City:

- Draft Plan of Subdivision
- Zoning By-Law Amendment
- Official Plan Amendment
- Site Development Application
- Heritage Permit
- Site alteration permit
- Development and Spine Services Agreements

A TPA may also be required if any of the following conditions apply:

- When a Site Plan approval application doesn't go through Site Plan control and significant public or private trees are to be preserved and or injured.
- When significant trees 80 centimetres and above Diameter at Breast Height (DBH) are suggested for removal.
- If public trees are impacted.
- Where less than five trees are recommended for removal, but they are endangered species.
- When less than five trees are recommended for removal, but one or more are 60 centimetres DBH and over.
- The proposed removals take place adjacent to a natural heritage network area.

For the applicant to enter a TPA, they must submit the following to the City:

- a completed TPA application form
- the administration fee
- security in accordance with Section 3.2
- an arborist report in accordance with the Terms of Reference outlined in Section 6.1
- a Tree Management Plan in accordance with the Terms of Reference outlined in Section 6.2
- a landscape plan in accordance with Section 6.3

Tree Protection Agreement security

A security must be submitted to the City for every TPA. Security amounts are calculated based on three components: the tree removals cost, the tree protection cost and the tree canopy compensation costs. TPA securities may be released only when a fully executed development agreement, Spine Services Agreement, Subdivision Agreement or Site Plan Agreement is in place. Each of the three security components, as well as the process for release of securities are described in detail below.

3.1.1. Tree removal security calculation

The City does not have standard unit prices for tree removals. Tree removal costs are unique for every project and a function of site conditions, equipment access, tree size and risk concerns. As such, these costs must be included in the technical submission described in Section 3.3 – Step 2, and in accordance with Section 6.1 of the Protocol.

An estimate for this work shall be provided by the company retained to conduct the tree removal works.

3.1.2. Tree protection security calculation

The security amount for tree protection costs for standard Tree Protection Zone (TPZ) hoarding will be calculated based on the total linear metres of hoarding required. Standard rates per linear metre of hoarding will be calculated based on the current year's Fees and Charges By-law and calculated as follows:

total linear metres of TPZ hoarding required x
standard cost per linear metre = tree protection
security

Note: For trees requiring non-standard tree protection measures as recommended by the Tree Management Plan (e.g. horizontal hoarding), a cost estimate for this work shall be provided in the arborist report provided during the technical submission and included in the sum of tree protection security amounts.

Measures to minimize the impact of the injury and ensure the safety of trees should also be identified in the arborist report. Tree injury is the physical or environmental damage to a tree that will negatively affect a tree's health which may lead to a tree's decline or death. Among other factors, tree injury may result from:

- Cutting roots through trenching or otherwise severing roots inside the prescribed tree protection zone.
- Use of Hydro-Vac excavation – stripping of the protective bark on a root, killing the roots beyond the excavation.
- Pruning exceeding 25 per cent of foliar loss or improper pruning techniques.
- Changing soil grade levels, compacting soils, spilling chemicals or creating excess standing water conditions within the root zone of a tree.
- Burning tree tissue with fire, heat, equipment exhaust or chemicals.
- Mechanical damage to trunk, canopy or roots.

Trees proposed for injury must be noted as such in the arborist report, Tree Inventory and Tree Management Plan. All associated costs for the preservation of trees, including but not limited to the following, must be counted in the tree protection security amount:

- Tree protection and hoarding.
- Root sensitive excavation costs.
- Certified arborist supervision of root pruning.

In the case of unexpected tree injury, the applicant must contact the FPPR division to assess the situation and provide a suitable solution. The Owner may be required to submit a Tree Impact Report to the FPPR division of the City at the sole expense of the Owner.

3.1.3. Tree compensation security calculation

All trees proposed for removal on lands subject to a TPA require compensation security regardless of the replacement strategy planned during later stages of the project. For example, tree planting that will be proposed on landscape plan drawings submitted in relation to a development agreement, Spine Services Agreement, Subdivision Agreement or Site Plan Agreement will still require tree compensation securities as part of the TPA.

Refer to Section 4.2 for detailed methodology for the calculation of tree compensation security amounts.

3.1.4. Release of securities

The TPA security will be released upon compliance with the Terms and Conditions of the TPA, as determined by the Director of Forestry.

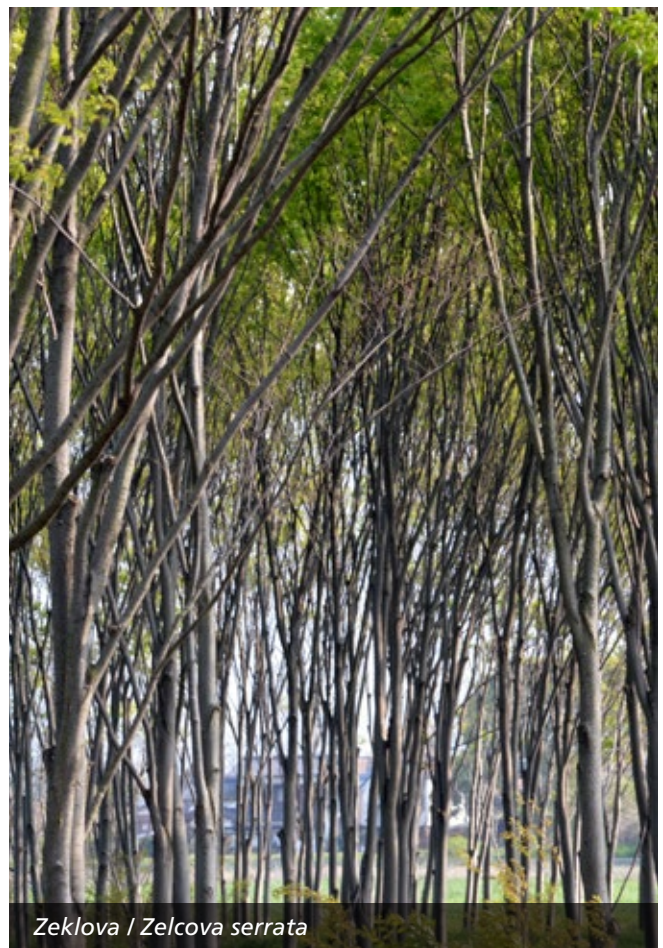
Specifically, where a fully executed development agreement, Spine Services Agreement, Subdivision Agreement or Site Plan Agreement is in place, and all on site works relating to the TPA have been completed, the applicant should contact Development and Parks Planning to initiate the second inspection. FPPR staff will conduct the second inspection to confirm that all site works relating to the TPA have been conducted as per the requirements in the TPA.

If there are no deficiencies noted during this second inspection, the TPA security will be released.

If there are noted deficiencies, the TPA security will be retained and the applicant will need to clear them and then contact the FPPR division for a subsequent inspection. Additional fees may apply for subsequent inspections.

The TPA security will only be released once all deficiencies have been cleared to the satisfaction of FPPR staff.

Where the recommendations of the arborist report have not been followed FPPR staff may withhold a portion of the TPA security to rectify the site. In certain cases, the file may be flagged for investigation to the By-law and Compliance, Licensing and Permit Services.



Zeklova / Zelcova serrata

3.2. Tree Protection Agreement process

STEP 1: Pre-application consultation (optional)

When applicants choose to go through the Pre-Application Consultation (PAC) process Urban Design staff and, where necessary, Policy Planning and Special Programs staff will provide the applicant with the technical requirements for tree protection at the PAC meeting. In cases where a PAC does not take place, this Protocol, along with the PAC Complete Application Guide and the City's Official Plan, will need to be reviewed by the applicant for guidance on technical requirements relating to tree management. The technical requirements include an arborist report, Tree Management Plan and a landscape plan to support the development application.

STEP 2: Technical submission

The applicant must submit all required documents in accordance with Section 6 for review by Urban Design and FPPR staff. The submission will not be considered complete until all required documents are submitted in a manner that is satisfactory to the City.

STEP 3: Technical review

Once a complete submission is received, Urban Design and FPPR staff will review the required technical documents and examine the impacts of the proposed development on existing trees to provide comments on the proposed tree preservation and/or removal plans. FPPR staff may conduct site visits to verify and validate the accuracy of the technical documents.

Urban Design and FPPR staff will recommend where the integration of existing trees into the design of the development is appropriate based on the Protocol. Where trees are proposed to be removed and there are no opportunities to replant or replace these trees within the site, monetary compensation will be required. Formal comments from Urban Design and FPPR staff will be provided to the Planner from the City's Development and Parks Planning department managing the development file. Refer to Section 4 for Tree Replacement Requirements for private and public trees.

STEP 4: Recommendation report

Development Planning staff include the recommendations and conditions proposed during the technical review performed by Urban Design and FPPR staff in their staff report.

Draft Plan of Subdivision Agreements, Site Plan Agreements, Spine Service Agreements, Heritage Permits, and Site Alteration Permits not related to a development agreement, the following conditions will apply:

- Prior to the execution of any of the above noted agreements, or issuance of any of the above noted permits, the applicant will be required to enter a TPA with the City.
- The applicant must provide a security per the terms of the TPA and in accordance with the approved arborist report and Section 3.2 of this Protocol.

STEP 5: Release of permits and implementation

- The applicant must submit a TPA form along with the approved arborist report and Tree Management Plan in a manner that is satisfactory to the City.
- Erect the approved protection for all trees to be preserved onsite and within six metres from property boundary, including private, public and trees on neighbouring properties, as per the arborist report. FPPR staff will verify the TPZ for all trees. Refer to Section 6.4.1: Tree Protection Barrier Specifications.
- Once the tree protection is erected, the applicant must contact the FPPR division to request the first inspection. FPPR staff will then be assigned to inspect the installed tree protection measures. Inspection fees apply.
- As part of the execution of the Site Plan Agreement or the execution of the draft plan of Subdivision Agreement, a security should be put in place as security for the new landscape to be installed, including trees planted as compensation. For replacement tree planting that can't be accommodated on site, tree replacement fees will be collected through the Site Plan Agreement or the Subdivision Agreement.
- Follow all additional recommendations made in the arborist report.

Once FPPR staff have confirmed there are no deficiencies regarding the tree protection, permits may be released and site works related to the TPA may take place as described in the approved arborist report.

STEP 6: Release of security

Once a fully executed development agreement, Spine Services Agreement, Subdivision Agreement or Site Plan Agreement is in place, or after a Heritage Permit or site alteration permit has been issued, and all on-site works relating to the TPA have been completed, the following process for the release of the TPA security may be followed:

- The applicant contacts the Development and Parks Planning department to request the second site inspection.
- FPPR staff will conduct the second inspection to confirm that all site works relating to the TPA have been conducted in accordance with the approved technical submission and terms of the TPA.
- If any deficiencies are noted by FPPR staff, during the second inspection, the TPA security will be retained, and the applicant will need to address deficiencies prior to contacting FPPR staff for another inspection. Additional fees apply for the follow-up inspections.
- Any tree injury noted that is in contravention of the TPA will be considered for an investigation by the By-law and Compliance, Licensing and Permit Services department.



Hedge Maple / Acer campestre

3.3. Tree injury, removal and protection permits

The City's Tree Protection By-law regulates the injury and removal of all privately owned trees with a DBH of 20 centimetres or greater as well as all City-owned trees of any size. The FPPR division issues four types of tree related permits. The four permit types are grouped below as being either construction related or non-construction related.

A Tree Removal Permit is valid for only six months from the date of issuance. In certain circumstances, a Tree Removal Permit may be revoked, extended or modified at the discretion of, the Director of Forestry.

Where Forestry determines that an Infrastructure Delivery project cannot comply with the Tree Protection Protocol a joint meeting shall take place between the respective departments to formalize non-standard tree protection and compensation considerations that can work within the specifics of the project.

3.3.1. Construction related tree permits

Private Tree Injury/Removal Permits – Construction or Infill are required when any tree over 20 centimetre DBH is proposed to be injured or removed during a construction project of any kind that is not otherwise subject to a TPA.

Tree Protection Permits are required when any City-owned trees of any size or privately-owned trees over 20 centimetres DBH will be protected with tree preservation measures during a construction project of any kind that is not otherwise subject to a TPA. These permits are often required as a condition of a CoA application or in addition to various other permits such as building permits, pool permits or access agreements.

3.3.2. Non-construction-related tree permits

Private Tree Removal Permits – Dead or Hazardous or Ash Tree are required when any tree is either dead, terminally diseased, imminently hazardous or is an Ash species. This permit type does not require payment of any fees or canopy replacement of any kind.

Private Tree Injury/Removal Permits – Residential are required when any healthy tree 20 centimetres DBH or greater is proposed for injury or removal and is not in relation to a construction project.

If a tree proposed for removal is located on the City property, the permit application will be cancelled and the applicant will be notified that a service request must be submitted to Service Vaughan for inspection and action by the Forestry Operations Division. Some exceptions may apply in applications for a Private Tree Injury/Removal Permit – Construction or Infill.

An application for any of the above noted permits can be made by submitting an online form, uploading the required technical documents and paying the application fees on the City's Online Permitting Portal (Amanda).

Technical requirements for tree-related permit applications include:

- an arborist report (including a replanting plan)
- a Tree Management Plan (for Construction or Infill Permits)
- signed consent letter(s) from adjacent property owners (for applicable Construction or Infill applications, and in every instance where a boundary tree is proposed for injury or removal)

3.3.3. Construction-related tree permit – pre-application process

For building and pool permits not related to a CoA application, the FPPR division will be automatically notified through the City's database (Amanda) that an application has been made. FPPR staff will notify the applicant directly that all regulations set out in the City's Tree Protection By-law, as well as the processes and terms of reference set out in this Protocol, must be adhered to during any construction project. If any trees 20 centimetres or greater are proposed for injury or removal, the applicant must obtain a construction-related tree permit by following the steps detailed in Section 3.4.4.

In cases where a CoA application is required, the following steps shall apply:

STEP 1: Tree declaration

Through the process of CoA applications, the applicant must declare if trees with a DBH of 20 centimetres or more exist on the site and within six metres of the property boundary, identifying any trees that are expected to be injured or destroyed due to conflict with construction elements, equipment, mobilization paths or material storage.

For CoA applications, a Planner from the Development and Parks Planning department informs the applicant of the technical requirements required for review of the application.

STEP 2: Technical submission

The applicant must submit all required documents in accordance with Section 6 of this Protocol for review by FPPR staff. The submission will not be considered complete until all required documents are submitted in a manner that is satisfactory to the City.

STEP 3: Technical review

Once all technical documents are received, FPPR staff will review the submission and examine the impacts of the proposed construction project on existing trees and provide comments on the proposed tree preservation and/or removal plans. FPPR staff may conduct site visits to verify the accuracy of the submission.

FPPR staff will recommend the integration and preservation of existing trees into the design of the construction to better support outcomes for the urban forest. FPPR staff may request submittal of revised technical documents prior to finalizing the recommendation report.

STEP 4: Recommendation report

FPPR staff will advise the Development and Parks Planning department whether approval can be granted for the tree works suggested in the technical documents submitted with the CoA application. The comments and recommendations will vary based on the nature of the proposal. The report may include recommended conditions for a minor-variance, including, but not limited to, a requirement for the applicant to obtain either a Private Tree Injury/Removal Permit – Construction or Infill or a Tree Protection Permit. Once pre-application technical review has been completed, the applicant may follow permit application and processing steps in Section 3.4.4 below to obtain the necessary permit(s).

Note: When a CoA Application is not required, FPPR staff will provide their comments and recommendations directly to the applicant.



3.3.4. Application and processing steps for all tree-related permits

STEP 1: Tree-related permit application and processing

An application for any of the above noted permits can be made through the Online Permitting Portal. The application will not be considered complete until all required technical documents are uploaded to the portal in a manner that is satisfactory to the City and applicable application fees are paid.

Once a complete application is received, FPPR staff will review the supporting technical documents to ensure alignment with all regulations and canopy replacement requirements. A site inspection will be conducted as part of the application review to verify the accuracy of the technical documents. If any deficiencies are noted in the application or supporting documents during the application review, FPPR staff will notify the applicant and request revisions to the technical documents.

STEP 2: Release of permits and implementation

Prior to the release of any tree-related permits, the applicant needs to:

- Submit payment for any outstanding application, tree replacement or tree protection inspection fees.
- Install all tree protection measures (where applicable) in accordance with the approved Tree Management Plan for all trees to be preserved on site and for all City-owned trees and trees on neighbouring properties within six metres from property boundary.
 - Once the tree protection measures are installed the applicant must contact FPPR staff to request an inspection. If any deficiencies in tree protection measures are noted during the inspection, the applicant will be advised of the required corrective measures. Once all deficiencies have been corrected, the applicant must request a re-inspection. Inspection fees apply for the first inspection as well as any subsequent inspections.

Once FPPR staff have confirmed there are no outstanding fees, and no deficiencies regarding the tree protection measures, tree-related permits may be released.

4. Tree canopy compensation

Tree canopy compensation is critical to ensuring that Vaughan's urban forest continues to grow so that future generations may enjoy the many benefits that trees provide. All City-owned trees of any size, and privately owned trees, 20 centimetres or greater in DBH, must be replaced when they are removed for any reason, including development and construction projects, landscaping projects and City projects. Tree canopy replacement may be achieved by one of two methods:

- tree planting as compensation (preferred)
- tree replacement fees

The required number of replacement trees is calculated based on the DBH of the removed tree, as outlined in Table 1 below.

The DBH of multi-stem trees is to be calculated by the square root of the sum of the DBHs of the three largest stems squared. The DBH of each single stem cannot individually determine whether the tree requires compensation or not, as such stems below 20 centimetres in DBH do not automatically exclude the tree from compensation requirements.

TABLE 1: Ratio of tree replacement for private trees

DBH OF TREE TO BE REMOVED	NUMBER OF REPLACEMENT TREES REQUIRED
20 cm to 30 cm	1
31 cm to 40 cm	2
41 cm to 50 cm	3
51 cm or greater	4

Note: In certain cases, staff may seek alternate environmental compensation methods. In all cases where either individual trees or woodlands are proposed for removal and compensation, proposed compensation shall be reviewed by the Director of Parks, Forestry and Horticulture Operations or their designate prior to executing any agreements.

4.1. Tree replacement fee and security calculations

Tree replacement fees, as well as security amounts for a TPA, are calculated as the sum of the:

- private tree compensation costs
- public tree compensation costs

In the case of TPA security calculations, the total number of replacement trees in accordance with Table 1 shall be included in the calculation of security amounts regardless of any actual replacement tree planting that may be planned in future stages of the project.

For sites not subject to a TPA, in instances where more replacement trees are required than can reasonably be accommodated on the subject site, the City may accept tree replacement fees as compensation for replacement trees that can't be planted on site.

City staff will assess and determine if a site can or cannot accommodate all the required replacement trees or if a tree replacement fee is appropriate on a case-by-case basis.

4.2. Private tree compensation/TPA security calculation

Private tree compensation security amounts, as well as tree replacement fees, for individual trees are calculated based on the following formula:

total number of required replacement trees
x current year's tree replacement fee

The current year's tree replacement fee is reviewed annually and approved by Council in the Fees and Charges By-Law.

Compensation for woodlands, significant forest, bioforest or any other natural heritage feature, as well as TRCA-regulated areas are coordinated by the Policy Planning and Special Programs department in association with York Region and the TRCA.

4.3. Public tree compensation costs

Public tree compensation costs are calculated based on the Trunk Formula.

The Trunk Formula is a tool that considers the operational, environmental and social costs of trees based on the tree species, their size and overall condition and location. The formula incorporates the costs for tree removal and tree planting to ensure the values are current.

4.4. Tree planting as compensation

All trees, public or private, are key urban canopy assets and should be retained wherever possible. Where trees cannot be retained and they require removal, tree canopy compensation planting will be calculated per the private tree replacement requirements shown in Table 1.

The scaled tree replacement ratio presented in Table 1 acknowledges the increased environmental and community benefits provided by larger trees and enables a more rapid recovery of the city's net tree canopy after a permitted tree removal. The City will review and approve the proposed species of replacement trees. In most cases, large-growing shade-providing trees are preferred.

Tree planting as a condition of all tree-related permits must be completed within one year of the permit issuance. If a project requires more than two years for planting to take place, tree replacement fees will be required.

Trees required for the protection of a natural feature, or trees proposed within public right-of-way, will not be counted towards private tree compensation.

All planting plans should incorporate the following considerations:

- Select tree and plant species for the appropriate hardiness zone and consider climate conditions. Planting and landscape typologies should consider all seasons.
- Biodiversity is promoted by planting no more than four trees of the same genus in a row or in the same area and no more than 10 per cent of the same genus on the site, numbers permitting.
- Landscape plans abutting water and natural heritage areas should use native, non-invasive species.

- Soil moisture, texture and nutrient requirements.
- Long-term maintenance requirements (e.g., pruning).
- Root system characteristics and canopy form.
- Pest and disease susceptibility.
- Pollution, salt and drought tolerance.
- Fruit and seed production.
- Biogenic volatile organic compound (VOC) emissions.
- Plant material that supports a diverse and ecologically sustainable environment is recommended. Planting should be selected to provide habitats for birds and pollinators in order to promote biodiversity. Planting should be low-maintenance and salt-resistant.
- Smaller stature trees should be planted where they are located underneath a building cantilever, electrical lines, and street lighting; medium stature trees should be planted where they are close to the building face; and large stature trees are preferred and should be planted where they are further from the building face.
- On rooftops, plant material should be durable and suitable, considering the potential for high wind or extreme cold. Planting areas on rooftop terraces often require irrigation and drainage. Note that rooftop tree planting does not count toward required compensation.
- To maintain sight lines and full visibility of the open space, high canopy trees are recommended.
- Evergreen trees are generally not permitted on City boulevards. Some exceptions may include specifically designated buffer areas.
- Only non-flesh fruit bearing trees will be considered on City boulevards.

Refer to Appendix A for all tree planting specifications.

Refer to Appendix B for the general characteristics of tree species suitable for establishment within one or more of the tree planting typologies within the City of Vaughan.



Profusion Crabapple / Malus 'Profusion'

5. Landscape design

Vaughan's urban fabric is shaped by its parks, natural features and open spaces. Privately owned open spaces should be designed to extend a robust and visible landscape character throughout the city - a network of green spaces, edges and buffers that collectively reconnect and enhance the city's existing natural systems while expanding the tree canopy.

Detailed design for planting and landscape typologies should consider all seasons, appropriate hardiness zones, biodiversity, climate conditions and the unique stresses of the urban setting. Sites should provide landscaped spaces of sufficient size and shape to support stormwater management, absorption of noise and cooling urban spaces.

The following are guidelines and specifications for new planting. For further guidance on the design of a wide range of landscape typologies, consult the City-Wide Urban Design Guidelines, Vol.2, Section 6: Landscape Typologies.

All landscaped elements on private property will be maintained by the property owner and should meet the performance standards in this section.

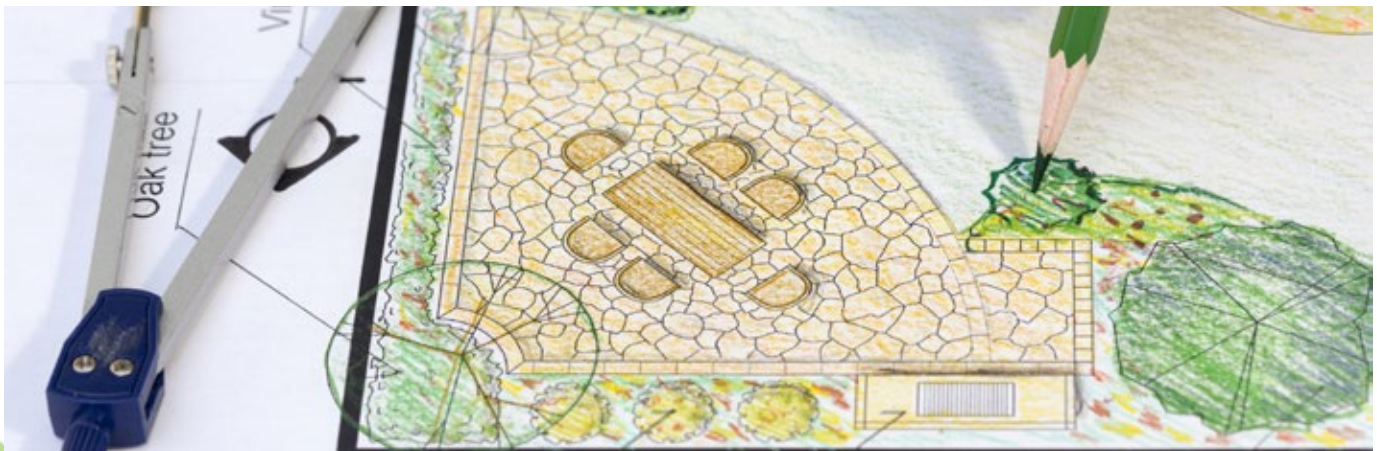
5.1. Landscape cost estimate

Overall tree health in open spaces should be monitored to ensure the long-term viability of the tree canopy. Therefore, the City requires securities for new planting in the form of a letter of credit or certified cheque/bank draft as per the City's Letter of Credit Policy (12.C.04).

The landscape cost estimate should reflect the scope of work depicted on the landscape plans. It should be based on the City's standard unit pricing for planting and softscape, paving and hardscape, fencing, landscape furniture lighting and built landscape elements. Applicants may obtain the City's standard unit price list through contacting Urban Design staff directly.

The species, materials, quantities and sizes should be listed. Equipment, labor, materials and one year maintenance costs including contingencies and HST should be factored in. In some cases, the cost for municipal streetscape works will be required as well.

For phased projects, a detailed landscape cost estimate, indicating the area and scope of work, shall be provided for each phase, in coordination with the Landscape Master Plan and the landscape plans associated with each phase reflecting the interim and ultimate condition of the site. The landscape cost estimate must be stamped and signed by a certified landscape architect.



6. Terms of Reference and specifications for technical requirements

The following documents will need to be submitted for staff to review:

- Arborist report in accordance with section 3.1 of this protocol
- Tree Management Plan
- Landscape Plan

6.1. Arborist report Terms of Reference

An arborist report must be submitted as part of a development planning application and a Tree Permit Application. An arborist report must be completed by an International Society of Arboriculture (ISA), Ontario Ministry of Training, Colleges and Universities (MTCU) or American Society of Consulting Arborists (ASCA) certified arborist, a registered professional forester or a landscape architect. An arborist or landscape architect can determine the impact of developmental proposals on trees and the surrounding natural environment, and advise on current tree maintenance requirements. All field data collection, including tree inventory works, must be performed no more than three years prior to the submission date. If a development experiences prolonged multi-year delays or a substantial change in land-use is proposed, a revised arborist report may be required. The arborist report shall be in accordance with industry best practices as set out in the American National Standard for Tree Care Operations—Tree, Shrub and Other Woody Plant Management—Standard Practices (ANSI 300 Part 9 – Standard

Practices), as amended or replaced, and shall include the following:

Location: Provide the municipal address of the site and identify the location of the trees in relation to any existing and proposed structures, lot boundaries and other trees.

Context map: Specific mapping should be prepared as part of the arborist report to identify the following existing and planned elements and features where applicable:

- key existing and planned pedestrian, vehicular, transit, trail (particularly Vaughan Super Trail) and cycling connections and access points, including mid-block connections and transit stops
- streetscape design
- key destinations, heritage buildings, community facilities and other amenities
- open spaces, natural heritage features, parks and other public spaces
- key landmarks and view corridors are important topographical elements
- land uses and key zoning permissions, including permitted building heights
- existing/planned trails or active transportation facilities, and;
- other relevant features on a site-specific basis

Nature of work: Explain what arboricultural work is to be undertaken on the trees (e.g. pruning, tree removal, root pruning, tree protection measures required for construction, etc.). If applicable, explain the silvicultural effect of the proposed work (e.g. disturbing the natural edge, thinning, creating a canopy, opening to provide better light conditions, slope destabilization, etc.).

Arborist or Landscape Architect

recommendations: An arborist or landscape architect's recommendations are required for treatment of the existing trees, including removal, replacement and the determination of TPZs for all private, neighbouring and public trees.

Tree compensation requirements: Include tree compensation requirements based on Section 4.

TPA security amounts (for TPA applications only): Outline the costs related to the tree works proposed; specifically, the costs for tree removals, tree protection and tree compensation. Refer to Section 3.2 for more information.

- **Tree protection costs:** Costs related to protection measures to be installed for trees to be preserved on site and on neighbouring public or private lands where trees are within six metres from the subject property boundary, including areas used for construction access, storage and staging.
- **Tree removal costs:** Costs associated with the removal of private and public trees as identified in the arborist report. The City does not have standard costs for these services; tree removal costs are based on the market value.
- **Tree compensation costs:** Costs associated with the compensation value of trees to be removed. The City has formulas for the calculation of private and public tree compensation costs, refer to Section 4.2 and 4.3 respectively.

Tree management plan: A scaled copy of the stand-alone Tree Management Plan should be included in the arborist report for reference. Refer to Section 6.2 for the Tree Management Plan Terms of Reference.

Replanting plan: In cases where a full landscape plan is not required (e.g. tree-related permit applications) a replanting plan must be included in either the arborist report, or with the application as a separate technical document. All replanting plans must include:

- location of all trees to be planted on the property
- proposed species (refer to Section 6.5.1)
- size of all proposed plantings (refer to Section 6.5.1)
- timing of replanting (refer to Section 6.5.2)

Inventory chart: The inventory chart, supported by field-data collection occurring no more than three years prior to the submission date, will identify all trees on site and on neighbouring private and public lands where trees are within six metres from the subject property boundary, including areas used for construction access, storage and staging. This chart will need to be submitted as a separate Excel sheet and should include the following information.

- tree species
- tree size, including the DBH measured 1.4 metres from ground level
- ownership of each tree
- crown spread (drip line) of each tree measured in square metres
- tree health and overall condition
- the recommendation of action for each tree (e.g. removal, injury, preservation)
- for the trees to be removed, the reason for their removal should be outlined
- the number of tree replacements required for each proposed tree removal

- the anticipated extent of encroachment for trees proposed for injury, expressed as a percentage of total TPZ area
- supporting photographic record of each tree

The arborist report should also include details regarding the percentage of total canopy cover to be removed from the site. In certain cases, such as when trees are identified as hazardous, City staff may require additional supporting documentation. For example, a Tree Risk Assessment Form as assessed by a Tree Risk Assessment Qualified (TRAQ) arborist. Tree Risk Assessment Forms shall be completed in accordance with this Protocol and ISA standards and should be supported by photographic record.

6.2. Tree Management Plan Terms of Reference

All applications must include a Tree Inventory and Management Plan when there are trees on site and neighbouring private and public lands within six metres from the subject property boundary, including areas used for construction access, storage and staging.

The Tree Inventory and Management Plan will be prepared in conjunction with an arborist report by an ISA, MTCU or ASCA certified arborist, a registered professional forester or a landscape architect and describe, in detail, all proposed tree protection measures.

All Tree Inventory and Management Plans must be legible, in a usable metric scale and include the following information:

- Show all existing buildings, above and below ground structures, services and utilities existing and proposed, hard surfaces, grade changes and all trees on site and on neighbouring private and public lands within six metres from the subject property boundary, including areas used for construction access, storage and staging.

- Indicate trees proposed to be protected, removed and injured.
- Outline the extent of the crown (drip line) or the extent of minimum TPZ (whichever is greater) of each existing tree. Identify and label tree preservation measures and the proposed TPZ. Refer to Section 6.4 for further details.
- Indicate the location and extent of any excavation required within the dripline or TPZ (expressed as a percentage of total TPZ area) and would therefore require tree root pruning and the extent of proposed tree injury.
- Indicate vehicular construction access, areas determined for over-dig, stockpiling, construction traffic, construction storage and staging areas. Areas proposed for temporary stockpiling of fill or excavated material shall be fenced with sediment control to prevent sediment runoff.
- Attribute labels to all trees.
- Include a comprehensive legend.

6.3. Landscape Plan Terms of Reference

The landscape plan drawing shall provide opportunities for the creation of dynamic and well-defined private and public open spaces. The landscape plan should create opportunities for privately owned open spaces to extend the robust and visible landscape character of the city, creating a seamless transition between private and public space and supporting a vibrant public realm. Landscape setbacks should transition seamlessly to the City or Regional boulevard treatments by choosing complimentary materials and ensuring that grading does not create any trip hazards.

The landscape plan must be prepared, stamped and signed by a certified landscape architect, should be drawn to a standard metric scale (e.g. 1:100, 1:200, 1:500) and shall include the following:

- Locations and dimensions of landscape features and species list naming all recommended plant material and size specifications.
- Location, height and material of all fences, screen walls, living walls, retaining walls, play equipment, recreational facilities, benches and street furniture.
- All built elements existing and proposed, such as but not limited to buildings and structures, landscape/development features, fences and retaining walls.
- All vehicular and pedestrian paved surfaces, such as but not limited to pathways, parking and loading spaces, curbs and driveways, walkways and bikeways.
- All engineering services (e.g. overhead, underground, light standards), which may affect the landscape.
- Location, height and type of lighting and ground signs.
- Existing and proposed development including the outline of the proposed building.
- All property lines, abutting roads and building footprints on the site and adjacent lots.
- Dimensioned relationships of the proposed buildings above and below grade to lot lines; building setbacks, easements and rights-of-way.
- Existing natural and site features, open space, water bodies, and retention/preservation areas.
- General concept for grading, including the existing and proposed elevations at property lines, driveways (indicating slope) and building entrances (should be coordinated with the Grading Plan).



- Planting and construction details that are in accordance with the City standard details.
- Location, size, number and species of existing trees under the City's Tree Protection By-Law that are to be retained/protected (including trees on adjacent properties within six metres of the subject property boundary).
- No more than four trees of the same genus should be planted in a row or in the same area and no more than 10 per cent of the same genus in a single project (further limitations may apply for trees planted in the public realm).
- Soil volume for trees in hardscaping.
- Minimum soil volume of 20 sq. m per tree shared pit.
- Minimum 0.9 metre soil depth and maximum 1.2 metre soil depth (for soil volume calculation).
- The location of all tree protection measures for all trees to be preserved including those in ravine protected areas, adjacent to City streets and roadways and City-owned parkland.
- Proposed plantings on the site including all street frontages, public walkways, driveways and easements, open areas and on adjacent road allowance (should be coordinated with proposed Site Servicing Plan).
- Green roof planting details.

Tree Protection Zone (TPZ) specifications

The Tree Protection Zone is the minimum setback required to maintain the structural integrity of the tree's anchor roots. Despite installing a TPZ, there can still be significant loss of the feeder roots beyond the established zone. Feeder roots are responsible for water and nutrient absorption and gas exchange. For this reason, the FPPR division may require a TPZ larger than the minimum, depending on the tree and the surrounding environment.

No unauthorized activities, pursuant to Section 4 of the Tree Protection By-law, may take place within the TPZ of a tree covered under a municipal permit process or agreement.

Table 2 below, provides the minimum TPZ standard dimensions based on the DBH of each tree, for trees located on City lands and on private property that are subject to the Tree Protection By-law.

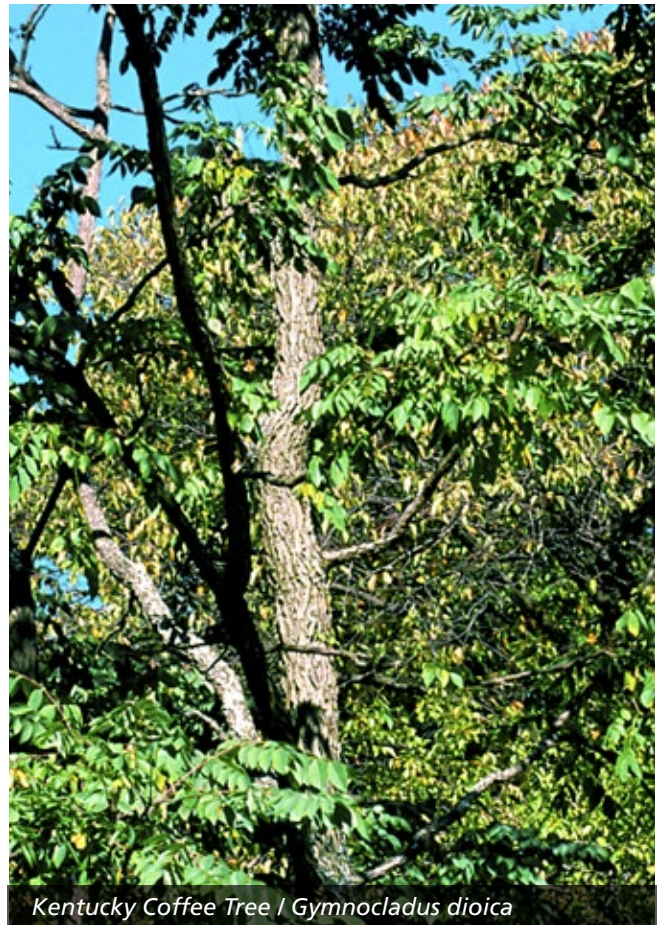


Table 2 : Minimum Tree Protection Zone Determination

DIAMETER AT BREAST HEIGHT ¹ IN CENTIMETRES	MINIMUM PROTECTION DISTANCES REQUIRED ² (PUBLIC AND PRIVATE TREES)	MINIMUM PROTECTION DISTANCES REQUIRED TREES IN NATURALIZED AREAS (DRIP LINE OR LINEAR METRES, WHICHEVER IS GREATER)
<10	1.2	The drip line ³ or 1.2 m
10-29	1.8	The drip line or 3.6 m
30-40 ⁴	2.4	The drip line or 4.8 m
41-50	3.0	The drip line or 6.0 m
51-60	3.6	The drip line or 7.2 m
61-70	4.2	The drip line or 8.4 m
71-80	4.8	The drip line or 9.6 m
81-90	5.4	The drip line or 10.6 m
91-100	6.0	The drip line or 12.0 m
>100	6 cm protection for each 1 cm diameter	12 cm protection for each 1 cm diameter or the drip line

1. The breast measurement of tree trunk taken at 1.37 metres (m) above the ground.
2. Minimum Tree Protection Zone distances are to be measured from the outside edge of the tree base.
3. The drip line is defined as the area beneath the outer-most branch tips of a tree.
4. Converted from ISA (International Society of Arboriculture) Arborist Certification Study Guide, general guidelines for tree protection barriers of 0.3 metres in diameter from the tree stem for each centimetre of tree trunk diameter.

6.3.1. Tree protection barrier requirements

Trees selected for preservation on site and neighbouring private and public lands within six metres of the subject property boundary, including areas used for construction access, storage and staging, must be protected during pre-development works and throughout the time of construction and landscape installation by a barrier installed in accordance with Table 2. Tree protection barriers should meet the following specifications:

- Tree protection barriers must be erected prior to the commencement of any grading activity, development, site alteration and/or construction activity that may injure a tree on the site and must remain in place throughout the duration of the construction of the project. When a TPA is in place, the applicant shall notify Development Finance to request the first inspection prior to the commencement of any site works.
- In cases where a Tree Removal Permit is in place, the applicant shall contact the FPPR division directly to schedule an inspection of the tree protection barriers prior to commencement of any site works.
- The tree protection barriers specified herein must remain in a condition satisfactory to the City until all site activities including the installation of new landscape are complete.
- Authorization from the FPPR division must be obtained prior to removing the Tree Protection barriers.
- Heavy duty hoarding is required by the FPPR division in cases where the root system is at risk of injury or compaction. Silt barriers may be required where soil runoff may enter the identified TPZ, but they are **not considered a substitute for tree protection barriers**. In some cases, horizontal hoarding may be required to limit soil compaction.

6.4. Tree planting specifications

6.4.1. Species and size specifications

Different species of trees are better suited in different landscape settings. The selection of species will inform the spacing, soil quality and quantity required.

Species and size specifications for tree replacement:

- Coniferous trees must be at least 200 centimetres tall.
- Deciduous trees must have a caliper of at least 50 millimetres.
- If small deciduous, multi-stem and ornamental flowering trees are desired, note that two of such trees must be planted to substitute each coniferous or deciduous tree replacement.
- Planting material must not be a shrub or a low-growing tree for hedge installation. Cedar hedge trees will not be considered as a tree replacement species.
- Trees must not be an invasive species. Consult Appendix A: Forestry preferred tree lists. If the site is within one of the four Heritage Conservation District Plan areas, the appropriate Heritage District Conservation Plan should be consulted, as it identifies plant species acceptable to be installed in each area.
- Trees shall meet the highest horticultural standards of the Canadian Nursery Trades Association with respect to grading and quality and shall be in strict accordance with the approved Plant List and Specifications.

Notwithstanding the above specifications, replacement trees for removed fruit-bearing and ornamental trees may be of a similar species.

Planting trees and hedges should not limit the safety, visibility or sense of security of a pedestrian, cyclist or driver.

Refer to Appendix A for the general characteristics of tree species suitable for establishment within one or more of the tree planting typologies within the city.

6.4.2. Timing of planting

Trees can be planted in the spring, as soon as the frost is out of the ground, until late June or in the fall, from early September until freeze-up or snow cover.

Planting between July 1 and Aug. 31 is not recommended.

6.4.3. Spatial requirements

For trees to sustain their health and growth potential, and consequently provide the most benefits, trees must have as much space as possible. There is a balance that a tree maintains between the leaf's surface area for photosynthesis and the area that absorbing roots require for water and nutrient uptake.

Specifically, trees should be spaced eight to 10 metres (six to 10 metres for small form species) apart, parallel to the property line, depending on the tree species and the site conditions, without obstructing sight lines for vehicles or pedestrians, or accessibility to the site.

Planting should also not limit the safety or sense of security of a pedestrian, cyclist or driver.

In an urban setting, tighter spacing is commonplace compared to wider spacing in open and rural areas.

The following applies when planting trees within the boulevard:

- The minimum acceptable distance between the curb edge and a sidewalk, necessary to establish a green boulevard, shall be two metres.
- Trees should be planted 1.5 metres from curb edge, subject to all utility clearances. Trees shall be planted once all utility clearances have been approved.
- Where the sidewalk and the curb edge are attached, trees should be planted 1.3 metres away from the sidewalk.
- The City has standard tree planting measurement setbacks included in this Protocol, Appendix B. Refer to Appendix A, Forestry preferred tree lists, for the full chart.
- Only salt-tolerant ornamental/smaller stature trees should be planted under high voltage service lines and by streetlights.
- Trees are not to be planted in line with lot drainage swales.
- Trees should be placed an appropriate distance from buildings to allow proper crown growth without excessive pruning. Species selection is important in tight situations.
- No tree planting shall be made within one metre of any building or structure.
- Space should be provided for root growth. The expected tree size at maturity should be matched to the planting space to keep trees healthy and prevent damage to surrounding sidewalks, curbs and pavement.
- In cases where one boulevard tree is proposed to be planted between two driveways, the tree should be centered in the available space.

For sites within an Intensification Corridor:

The deeper front yard setbacks anticipated on Intensification Corridors, should provide sufficient space to accommodate a double row of trees, stormwater management gardens and other environmental functions.

Trees should establish a consistent streetscape pattern with minimal transitions between properties. Where possible, a continuous row of trees should be planted 1.5 metres from the front yard property line. Where space permits, a second row of trees should be planted approximately four metres from the front yard property line.

In areas with high volumes and multiple types of traffic, trees are to be spaced at least three metres away from the property line.

Planting pits require deep watering/flushing capabilities with drainage.

6.4.4. Soil volumes

Trees need an adequate volume of oxygen-rich soil to thrive. The following are the minimum requirements for soil volumes:

- minimum of 30 square metres for single tree pits
- minimum of 20 square metres per tree for shared pits
- minimum 0.9 metre depth; maximum 1.2 metre depth (for soil volume calculation)
- minimum 1.2 metre depth for encumbered landscaped areas, such as above underground parking garages or stormwater retention infrastructures
- minimum 1.5 metres away from the exposed portion of a planting pits

Refer to the City's Construction Specification for Topsoil for further information.

6.4.5. Tree locations and utilities

Utility right-of-way should be adhered to for all tree planting on private sites. Public utilities should be placed within the street right-of-way (or in a front yard easement) in a joint utility trench that can be accessed for repairs without disturbing street and site trees. Site utilities should be integrated into building design, placed in discreet locations away from the primary building frontage and amenity spaces or screened from public view.

The owner and their contractors are responsible for all services and utilities in the planned work area.

The owner and their contractors are responsible for the activity in the municipal right-of-way and shall be responsible for obtaining all necessary information regarding the exact location of utilities, including service connections.

The owner and their contractors completing the work will be held responsible for the protection of all services, whether aerial or underground, during the time of construction and will be held liable for any damage.

6.4.6. Soil quality

Soil quality is the capacity of a specific kind of soil to function, to sustain plant productivity, maintain or enhance water and air quality, and support human health and habitation.

In general soils, a mixture of topsoil, coarse sand and compost components are mixed in the appropriate proportions to achieve the above goal.

Refer to the City's Construction Specification for Topsoil for further information.

7. Resources

Vaughan's urban tree canopy is a critical asset of the city and an important element to green infrastructure. The City is committed to improving and increasing the urban forest and overall canopy cover to add valuable community amenities, improve the health of residents and provide ecosystem services.

The following are some valuable resources, outlining landscape requirements, by-laws and guidelines, green infrastructure guidelines and programs, and more:

- [Green Directions Vaughan](#)
- [City-Wide Urban Design Guidelines Vol.1](#) (PDF)
- [City-Wide Urban Design Guidelines Vol. 2](#) (PDF)
- [City-Wide Streetscape Implementation Manual and Financial Strategy - For Intensification Areas and Heritage Conservation Districts](#)
- [Community Gardens on Municipal Lands](#)
- [Complete Streets](#) (PDF)
- [Sustainability Metrics Program](#) (PDF)
- [Tree Protection By-law as amended or replaced](#)
- [York Region Forest Conservation By-law](#)
- [Toronto and Region Conservation Authority Planning and Permits](#)
- [Tree planting programs by York Region](#)
- [York Region's Greening Strategy](#)



Red Leaf Japanese Maple / Acer palmatum 'Bloodgood'

8. Glossary

APPLICANT means a person seeking permission from the local authority for development or change of use of land or buildings, or to obtain a tree removal permit or a tree protection agreement. They might do so in person or through an authorized agent. An applicant shall always include the owner of the property to which the application pertains.

APPLICATION means a formal proposal to the local authority for planning permission for development or a change of use of land or buildings. This shall include development applications, CoA applications, Heritage Permits, Draft Plan of Subdivision, Development and Spine Services Agreements, Site Alteration Permits, building permits, pool and access permits, tree permits and Tree Protection Agreements.

ARBORIST means a person who has an Arborist certification, or equivalent, through by the Ontario Ministry of Training, Colleges and Universities (MTCU), the International Society of Arboriculture (ISA) or the American Society of Consulting Arborists (ASCA), or is a Registered Professional Forester as defined in the *Professional Foresters Act, 2000, S.O. 2000, c. 18*, as amended.

ARBORIST REPORT means a report prepared by an arborist or landscape architect which provides details on the location, species, size, condition, structural integrity, impacts of construction, mitigation recommendations and any other information required by the Director of Forestry regarding a tree(s) to be destroyed, injured or removed. The report shall be in accordance with industry best practices as set out in the American National Standard Institute for Tree Care Operations — tree, shrub and other woody plant management — Standard Practices (ANSI 300 Part 9 – Standard Practices), as amended or replaced.

AUTHORIZED AGENT means a person authorized in writing by an applicant or permit holder to act on behalf of such applicant or permit holder for the identified purpose of making an application or otherwise complying with the provisions of this by-law.

BASE DIAMETER is a measurement used when a tree has been cut down to less than 1.4 metres in height above the existing grade; the measurement of the diameter of the trunk of a tree from outside the bark at the existing grade of the ground adjoining its base.

CITY means the Corporation of the City of Vaughan, in the Regional Municipality of York and its employees and agents acting on the Corporation's behalf.

CLERK means the Clerk of the Corporation of the City of Vaughan or duly appointed designate.

COUNCIL means the Council of the Corporation of the City of Vaughan.

DANGEROUS, with respect to a tree, means an immediate threat to property or life.

DEAD means a tree that has no living tissue.

DIAMETER with respect to a tree, means the measurement at 1.4 metres above the existing grade of the ground adjoining its base, outside the bark;

- (a) where there is only one trunk, the diameter of the trunk of a tree; or
- (b) where there are multiple trunks, the square root of the sum of the diameters of the three largest trunks, squared.

DIRECTOR OF FORESTRY means the Director of Parks, Forestry and Horticultural Operations, or their delegate.

DRIP-LINE means the area beneath the outer most branch tips of a tree.

DYING a tree that is infected by a lethal pathogen or where 70 per cent or more of its crown is dead.

EMERGENCY WORK means the work necessary to terminate an immediate threat to life or property.

FEES AND CHARGES BY-LAW refers to the City Fees and Charges By-law 224-2023, as amended, or its successor by-law.

HAZARD means a tree is a potential harm to property or life, but not an immediate threat, as determined by a certified TRAQ arborist.

INJURE OR DESTROY with respect to a tree, means the harm, impairment or damage to a tree by removal, cutting or girdling of the tree or roots, or interfering with the water supply, application of chemicals, compaction or regrading within the drip line of the tree, or by other means, including irreversible injury which may result from neglect, accident or design, but does not include pruning.

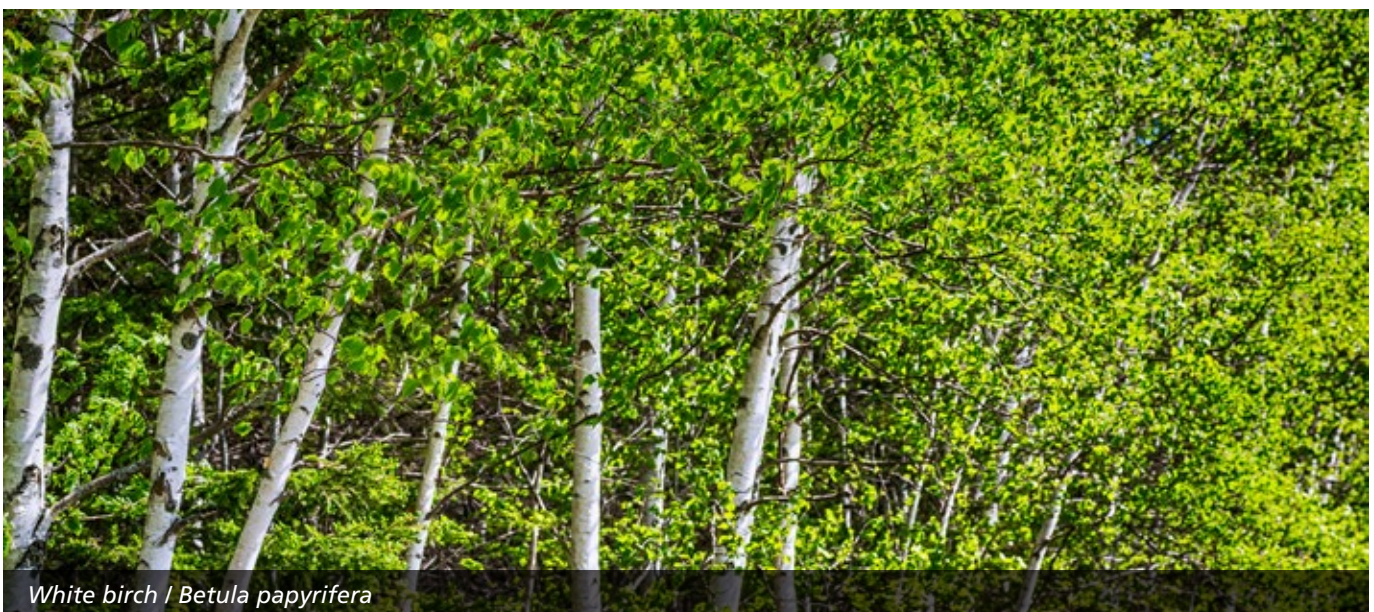
LANDS means a lot only; does not include a building.

LANDSCAPE ARCHITECT means a person registered as a Landscape Architect under the provisions of the *Ontario Association of Landscape Architects Act, 1984 S.O. 1984, c. P412*.

LOT means a parcel of land with specific boundaries capable of legal transfer.

MUNICIPAL RIGHT-OF-WAY also known as municipal road allowance, refers to a City-owned piece of land. It may include the roadway, boulevards and sections of land used for utility services. On a residential street, this refers to the section of a front lawn closer to the roadway that is publicly owned, not the section of the front lawn closer to the dwelling owned by the homeowner.

NATURAL HERITAGE FEATURE means an area of environmental significance in which development and use may be restricted by governmental agencies, such as, but not limited to wetlands or habitats for fish, wildlife, or threatened or endangered species; valley, woodlands, sand barrens, savannahs and tallgrass prairies.



White birch / *Betula papyrifera*

OWNER means the registered owner of a lot, his/her respective successors and assigns, including his/her duly authorized agent.

PERMIT means the official authorization required by Tree Protection By-law, as may be amended, to injure or destroy a tree on private property within the city.

PERMIT HOLDER means an applicant once a tree removal permit has been granted.

PERSON includes a natural individual, a corporation, partnership, proprietorship or other form of business association and the heirs, executors, administrators, successors and assigns, or other legal representatives thereof, or a receiver or mortgagee in possession.

PRIVATE PROPERTY means any property not owned by the City, Regional, Provincial or Federal Government or a Crown Corporation.

PRIVATE TREE means any tree which has 51 per cent or more of its main stem situated on private property.

PRUNING means the appropriate removal in accordance with good arboricultural practices of not more than 25 per cent of the live branches or limbs of a tree. Pruning of 25 per cent or more of the live branches or limbs on a tree may be considered acceptable as part of a consistent annual pruning program.

PUBLIC LANDS means lands owned by the City, Regional, Provincial or Federal Government, a Crown Corporation and shall include but not be limited to the boulevard, any highway, lane, alley, square, place, viaduct or trestle, waterway or bridge, park, Woodlands, Woodlots, greenbelt, storm water management facility, open space, municipal golf course or cemetery, multi-use pathway and all parts thereof.

PUBLIC TREE means any tree which has 50 per cent or more of its main stem situated on public property.

REGION means the Regional Municipality of York and its employees and agents acting on its behalf.

SECURITY means a letter of credit or a certified cheque/bank draft. Letters of credit should be in a format approved by the City and from an institution acceptable to the City as per the Letter of Credit Policy.

SIGNIFICANT TREE means any tree with a diameter of 80 centimetres or greater.

TREE means a self-supporting woody plant which has reached or will reach a height of at least 4.5 metres at maturity.

TREE MANAGEMENT PLAN means a document prepared by an arborist or landscape architect which includes:

- a) an arborist report list and map of all trees on a lot.
- b) an arborist report list and map of all trees within six metres of all lot lines, in the case of construction related applications.
- c) the manner and timing in which any injury or destruction of trees will be carried out.
- d) the qualifications and contact information of all persons authorized to injure or destroy trees.
- e) the plans for replacement tree(s) and planting(s), including species, size, location and timing of those replacements, and whether the locations will change, and why.
- f) all measures that will be taken to mitigate the direct and indirect effects of the destruction of the tree on other nearby trees, properties, water bodies, natural areas and other components of the ecosystem.
- g) other information as directed by staff.

TREE PROTECTION AGREEMENT means a permission by the City to an owner, to engage in tree related works on their lot; it identifies all the trees to be preserved, removed or injured and is established on the approved arborist report, Tree Management Plan and other documents as deemed appropriate by the City. The Tree Protection Agreement needs to be made prior to a development agreement, Spine Services Agreement, Site Plan Agreement, Subdivision Agreement, building permit, Site Alteration Permit, pool permit or Heritage Permit.

TREE PROTECTION ZONE means the minimum setback required, as determined by the Manager of Forestry, to maintain the structural integrity of the tree's anchor roots, based on generally accepted arboricultural principles.

TREE REMOVAL PERMIT means the official authorization required to injure, destroy or otherwise remove a tree on private property within the city.

TREE REPLACEMENT RATIO means the number of 50-centimetre caliper trees required to be planted to offset the environmental impact of tree removal, which is based on the diameter of trees as defined in this Protocol.

TRUNK FORMULA means the tree valuation method based on measuring the trunk cross-sectional area and multiplying that by a monetary value per square centimetre. This basic value is then depreciated or reduced by factors for species, condition and location of the tree.

WOODLANDS has the same meaning as in York Region's Forest Conservation By-law, and means land at least one hectare in area with at least:

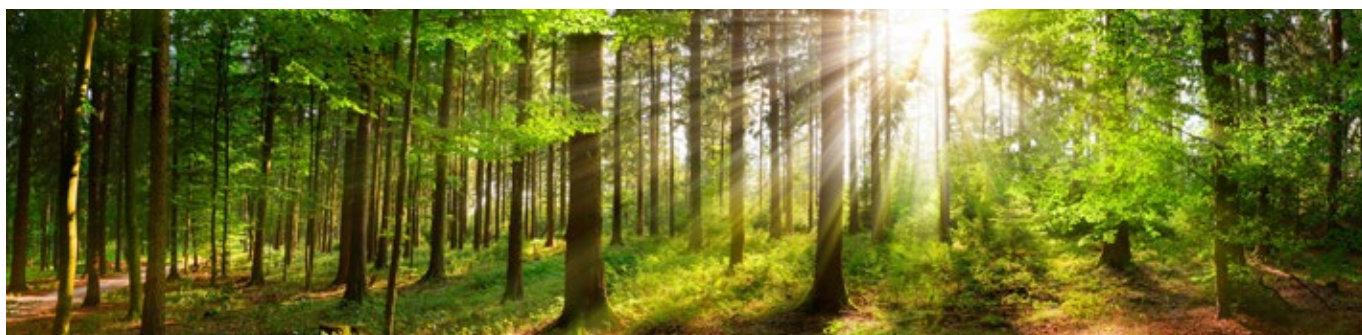
- a) 1000 trees, of any size, per hectare;
- b) 750 trees, measuring over five centimetres DBH, per hectare;
- c) 500 trees, measuring over 12 centimetres DBH, per hectare; or
- d) 250 trees, measuring over 20 centimetres DBH, per hectare;

but does not include a cultivated fruit or nut orchard, or a plantation established and maintained for the purpose of producing Christmas trees or nursery stock.

WOODLOT has the same meaning as in York Region's Forest Conservation By-law, and means land at least 0.2 hectare in area and no greater than one hectare in area, with at least:

- a) 200 trees, of any size, per 0.2 hectare;
- b) 150 trees, measuring over five centimetres DBH, per 0.2 hectare;
- c) 100 trees, measuring over 12 centimetres DBH, per 0.2 hectare; or
- d) 50 trees, measuring over 20 centimetres DBH, per 0.2 hectare;

The above specifications do not include a cultivated fruit or nut orchard, or a plantation established and maintained for the purpose of producing Christmas trees or nursery stock.



Appendix A: Forestry preferred tree lists

List of deciduous trees for parks and buffer blocks

Species planting rules:

- In general, no more than 10 per cent of any genus per project.
- No more than four trees of the same genus in a row or in the same area.
- No more than two per cent of Acer, Tilia, and Gleditsia genus per project.

CODE	COMMON NAME	SCIENTIFIC NAME	FORM
ACc	Hedge Maple	Acer campestre	small
ACf	Freeman Maple	Acer freemanii	large
ACfF	Firefall Maple	Acer x freemanii 'Firefall'	large
ACfK	Karpick Maple	Acer rubrum 'Karpick'	columnar
ACgi	Amur Maple	Acer ginnala	small
ACgr	Paperbark Maple	Acer griseum	small
ACpa	Japanese Maple	Acer palmatum	small
ACpaB	Red Leaf Japanese Maple	Acer palmatum 'Bloodgood'	small
ACpC	Columnar Maple	Acer platanoides 'Columnare'	columnar
ACpDR	Harlequin Maple	Acer platanoides 'Drummondii'	medium
ACpG	Globe Maple	Acer platanoides 'Globosum'	small
ACpR	Royal Red Maple	Acer platanoides 'Royal Red'	large
ACps	Sycamore Maple	Acer pseudoplatanus	large
ACr	Native Red Maple	Acer rubrum	large
ACsi	Silver Maple	Acer saccharinum	large

CODE	COMMON NAME	SCIENTIFIC NAME	FORM
ACsu	Sugar Maple	Acer saccharum	large
ACt	Tartarian Maple	Acer tartaricum	large
AEC	Ruby-Red Horse Chestnut	Aesculus carnea 'Briotii'	large
AEg	Ohio Buckeye	Aesculus glabra	large
AEh	Horse Chestnut	Aesculus hippocastanum	large
AM	Serviceberry	Amelanchier spp	small
BEpa	White Birch	Betula papyrifera	large
CACA	Musclewood - Blue Beech	Carpinus caroliniana	medium
CACO	Bitternut Hickory	Carya cordiformis	large
CAO	Shagbark Hickory	Carya ovata	large
CAP	European Hornbeam	Carpinus betulus	medium
CAS	Northern Catalpa	Catalpa speciosa	large
CEC	Red Bud	Cercis canadensis	small
CEJ	Katsura	Cercidiphyllum japonicum	medium
CEO	Hackberry	Celtis occidentalis	large
CR	Hawthorn spp	Crataegus spp	small
FAG	American Beech	Fagus grandifolia	large
FAS	European Beech	Fagus sylvatica	large
FASF	Columnar European Beech	Fagus sylvatica 'Fastigiata'	columnar
FASR	Tricolor Beech	Fagus sylvatica 'Roseamarginata'	large
GLB	Ginkgo / Maidenhair Tree	Ginkgo biloba	large

CODE	COMMON NAME	SCIENTIFIC NAME	FORM
GLtD	Street Keeper Honeylocust	Gleditsia triacanthos 'Draves'	large
GLtI	Thornless Honeylocust	Gleditsia triacanthos var. inermis	large
GLtS	Shademaster Honeylocust	Gleditsia triacanthos 'Shademaster'	large
GLtS	Skyline Honeylocust	Gleditsia triacanthos 'Skycole'	large
GLtSU	Sunburst Honeylocust	Gleditsia triacanthos 'Suncole'	large
GYd	Kentucky Coffee Tree	Gymnocladus dioica	large
JUc	Butternut	Juglans cinerea	large
JUn	Black Walnut	Juglans nigra	large
LtI	Tulip Tree	Liriodendron tulipifera	large
LtJ	Emerald City Tulip Tree	Liriodendron tulipifera 'JFS-Oz'	large
MAP	Profusion Crabapple	Malus 'Profusion'	small
MApWS	Maclura pomifera 'White Shield'	White Shield Osage Orange	large
MAR	Royalty Crabapple	Malus 'Royalty'	small
MASo	Saucer Magnolia	Magnolia x 'soulangiana'	small
MASt	Star Magnolia	Magnolia stellata	small
OSv	Hop Hornbeam/ Ironwood	Ostrya virginiana	medium
PLa	London Plane Tree	Platanus x acerifolia	large
PRc	Purpleleaf Sand Cherry	Prunus x cistena	small
PRs	Black Cherry	Prunus serotina	small

CODE	COMMON NAME	SCIENTIFIC NAME	FORM
QUa	White Oak	Quercus alba	large
QUb	Swamp White Oak	Quercus bicolor	large
QUBM	Prairie Stature Oak	Quercus x Bimundorum 'Midwest'	large
QUm	Burr Oak	Quercus macrocarpa	large
QUp	Pin Oak	Quercus palustris	large
QUro	English Oak	Quercus robur	large
QUroa	Crimson Spire Oak	Quercus robur x alba 'Crimschmidt'	large
QUroF	Pyramidal English Oak	Quercus robur 'Fastigiata'	large
QUru	Northern Red Oak	Quercus rubra	large
SOa	European Mountain Ash	Sorbus aucuparia	small
SOj	Japanese Pagoda	Sophora japonica 'Regent'	medium
SOt	Oakleaf Mountain Ash	Sorbus thuringiaca 'Fastigiata'	small
SYr	Ivory Silk Tree Lilac	Syringa reticulata 'Ivory Silk'	small
THo	White Cedar	Thuja occidentalis	small
Tla	American Basswood	Tilia americana	large
TlaR	Redmond Linden	Tilia americana 'Redmond'	large
Tlc	Little Leaf Linden	Tilia cordata	large
TlcG	Greenspire Linden	Tilia cordata 'Greenspire'	large
ULa	American Elm	Ulmus americana	large
ULaJ	Jefferson Elm	Ulmus americana 'Jefferson'	large
ULP	Pioneer Elm	Ulmus x 'Pioneer'	large
ZEs	Zelcova	Zelcova serrata	medium

List of coniferous trees for parks and development

CODE	COMMON NAME	SCIENTIFIC NAME	FORM
Ac	White Fir	Abies concolor	large
Af	Fraser Fir	Abies fraseri	large
Cn	Weeping False Cypress	Chamaecyparis nootkatensis 'Pendulata'	shrub
Jv	Eastern Red Cedar	Juniperus virginiana	shrub
Ld	Larch	Larix decidua	large
Ll	Tamarack	Larix laricina	large
Mg	Dawn Redwood	Metasequoia glyptostroboides	large
Pa	Norway Spruce	Picea abies	large
Pg	White Spruce	Picea glauca	large
Pme	Douglas Fir	Pseudotsuga menziesii	large



Eastern Red Cedar / Juniperus virginiana

List of tree species for street tree planting

Street trees species planting rules:

- In general, no more than 10 per cent of any genus per project.
- No more than four trees of the same genus in a row or in the same area.
- No more than two per cent of Acer, Tilia, and Gleditsia genus per project.

COMMON NAME	SCIENTIFIC NAME	RESTRICTIONS
Hedge Maple	Acer campestre	narrow form only
Amur Maple	Acer ginnala	none
Columnar Maple	Acer platanoides 'Columnare'	none
Silver Maple	Acer saccharinum	arterial roads and reverse frontages only
Tartarian Maple	Acer tartaricum	none
Ohio Buckeye	Aesulus glabra	none
Serviceberry	Amelanchier spp	none
European Hornbeam	Carpinus betulus "Fastigiata"	sightline sensitive
Bitternut Hickory	Carya cordiformis	none
Katsura	Cercidiphyllum japonicum	residential, non arterial streets only
Hackberry	Celtis occidentalis	none
European Beech	Fagus sylvatica	residential, non arterial streets only
Columnar European Beech	Fagus sylvatica 'Fastigiata'	residential, non arterial streets only, sightline sensitive
Ginkgo Tree	Ginkgo biloba	male only
Skyline Honeylocust	Gleditsia triocanthos 'Skycole'	none



Tulip Tree / *Liriodendron tulipifera*

COMMON NAME	SCIENTIFIC NAME	RESTRICTIONS
Sunburst Honeylocust	Gleditsia triacanthos 'Suncole'	none
Kentucky Coffee Tree	Gymnocladus dioica	residential, none arterial streets only
Tulip Tree	Liriodendron tulipifera	none
London Plane Tree	Platanus x acerifolia	none
White Oak	Quercus alba	none
Swamp White Oak	Quercus bicolor	none
Burr Oak	Quercus macrocarpa	none
English Oak	Quercus robur	none
Crimson Spire Oak	Quercus robur x alba 'Crimschmidt'	none
Pyramidal English Oak	Quercus robur 'Fastigiata'	sightline specific

COMMON NAME	SCIENTIFIC NAME	RESTRICTIONS
Northern Red Oak	Quercus rubra	none
Ivory Silk Tree Lilac	Syringa reticulata 'Ivory Silk'	none
Redmond Linden	Tilia americana 'Redmond'	none
Little Leaf Linden	Tilia cordata	none
Boulevard Linden	Tilia americana 'Boulevard'	none
Pioneer Elm	Ulmus x 'Pioneer'	arterial roads and reverse frontages only
American Elm	Ulmus americana 'Jefferson'	arterial roads and reverse frontages only
Zelcova	Zelcova serrata	none

Appendix B: Minimum setback requirements for tree planting

OBJECTS	DISTANCES (M)
Bell/Cablevision posts	1.5
Sidewalk, privacy fence, hedge, sound wall	1.5
Private walkway, driveway edge	1.5
Curb edge	1.5
Existing stump greater than 10 centimetres	1.5
Boulevard space requirements (curb to sidewalk) *Species	2
Parallel driveway space requirements (between)	3
Fire hydrants (no planting in front of)	3

OBJECTS	DISTANCES (M)
Hydro transformers	3
Streetlights	3
New tree, from any part of other tree	6
Bus shelter/community mailboxes	5
Stop sign	15

* Species: If the boulevard is only two metres (curb to sidewalk), consider smaller species i.e., Zelkova (ZEs), Tartarian Maple (ACt), Amur Maple (ACgi), Hedge Maple (ACc), Ivory Silk Lilac (SYr).





