

## Tree Permit Requirements

A Tree Permit must be issued before you will receive Residential Grading and Servicing (RGS) approval and acquire a Building Permit (HP). The following information is required by the City of Markham in order to provide applicants with the Tree Permit necessary for RGS approval. ePlan submissions are now required for RGS applications:

<https://www.markham.ca/wps/portal/home/business/building-permits/eplan/public-search-and-sign-on>

Purpose and overview of the Tree Permit Requirements.

- The root system of trees extend 2 to 3 times beyond the outermost edge of the canopy (dripline). Activities associated with construction cause root loss, soil compaction, and grade changes. Due to these construction related disturbances, most trees on urban residential properties are likely sustain injury during development.
- All privately owned trees 20 cm DBH (diameter at breast height measured 1.37 meters up from the base of the tree) and greater must remain protected from all injury and or destruction by the by-law until a Tree Permit is issued. **The injury or destruction of a privately owned tree 20cm DBH or greater without a permit is a violation of the Tree Preservation By-law 2008-96 and is a chargeable offence.**
- The City of Markham will require the submission of a Tree Assessment and Preservation Plan (TAPP) in order to assess and mitigate the impact of the proposed development on the trees located on the subject property, neighbouring properties, parks, and road allowances.
- Tree Protection Zone (TPZ) barriers and any other injury mitigation infrastructure must be installed to the specifications outlined in the approved TAPP before a Tree Permit can be issued.
- The Tree Assessment and Preservation Plan (TAPP) must be prepared by, and signed by an Ontario Qualified Arborist and accredited by the Ministry of Training Colleges and Universities, the International Society of Arboriculture (ISA) as Certified Arborist or be a Registered Professional Forester (RPF).
- Once accepted by the City's Tree Preservation Technician, complete copies of the Tree Assessment and Preservation Plan (Arborist Report/Tree Assessment and Tree Preservation Plan) are to be distributed to the property owner and all Planners, Architects, Landscape Architects, Engineers, Contractors and or Sub-contractors involved in the project.

- **The following document provides the details needed to successfully satisfy conditions of a Tree Permit without delay. Please provide a copy of this to the Consulting Arborist.**

Please upload the TAPP to ePlan for RGS applications, or mail to the attention of the Tree Preservation Technician at City of Markham, 101 Town Centre Blvd, Markham, ON, L3R 9W3 or email it to [ocustomerservice@markham.ca](mailto:ocustomerservice@markham.ca)

If you require further information on this or any tree by-law related matters, please do not hesitate to contact the Tree Preservation Technician.

## **1. Pre-construction Requirements**

Before any site alteration (i.e. demolition, excavation or site preparation) the following will be required:

- a. The submission of a Tree Assessment and Preservation Plan (TAPP), often called the Arborist Report and Tree Preservation Plan, to the Tree Preservation Technician. The TAPP must contain all the required information (outlined in Section 4) in order to be accepted for review.
- b. Revisions to the TAPP and/or changes to the proposed development may be requested by the Tree Preservation Technician based on their review. These revisions or changes would be for the purpose of increasing the number of trees to be preserved or improve tree injury mitigation throughout the construction process.
- c. The TAPP and Grading Plan(RGS)/Site Plan(HP) need to match specifications. The grading plan/site plan drawing must show the location for all tree protection barriers, as per the arborist report. The tree protection zone barrier for each tree is to be drawn to scale, with all distances from the tree trunk to the edge of the hoarding labelled in metres for each tree hoarding. This must correspond directly with the tree protection requirements set out in the arborist report/TAPP. Tree numbers are also to be included on the site plan drawing as they correspond to the TAPP. By hand excavation and arborist supervision notes shall be indicated on the grading/site plan where identified in the TAPP.
- d. The TPZ barrier and any other injury mitigation infrastructure must be installed (as per the approved TAPP) and inspected by a Tree Preservation Technician at the City of Markham prior to any demolition or construction activity. The purpose of the barrier is to prevent any construction related activities (including but not limited to storage of any kind), inside the defined Tree Protection Zone throughout the entirety of the project
- e. Once the compliance inspection is completed and the TPZ barriers are approved by the Tree Preservation Technician or designate, a permit may be issued.

## **2. Injury, Mitigation and Monitoring**

During demolition, excavation, construction and/or landscaping, the following may be required dependent on site conditions above and below grade:

- a. Tree preservation methodologies and injury mitigation techniques as described in the approved TAPP can be initiated after the permit is obtained. Some examples of injury mitigation measures that may be implemented are: root excavation/exploration using an air-spade, root and canopy pruning, compaction prevention, soil de-compaction (vertical mulching), and/or deep root fertilizing. Work is to be performed by applicant's Consulting Arborist and a Tree Impact Report (TIR) may be submitted to the Tree Preservation Technician upon request. In specific situations, and at the discretion of the Tree Preservation Technician, root exploration may be requested in advance of RGS and Tree permit issuance to determine appropriate course of action to preserve trees.
- b. Periodic monitoring of the subject site during demolition, excavation and construction may be required to ensure tree protection measures are performed or remain in place throughout the duration of the construction. Monitoring will be performed by applicant's Consulting Arborist and Tree Monitoring Reports (TMR) may be submitted to the Tree Preservation Technician upon request.
- c. Arborist supervision/monitoring and by hand excavation requirements for any encroachment in to the minimum tree protection zone for activities such as, but not limited to; driveway removal/installation, gas, water, sewer, sanitary, or other services are mandatory, and will require verification post construction. Tree Impact Reports are to be submitted to City of Markham outlining root removals including, number of roots and size, monitoring information and tree impact/assessment. Failure to retain the arborist may result in lot grading security deposits being retained in full or partial. Further site remediation may be Ordered as per Tree Preservation By Law 2008-96.

## **3. Post-construction Requirements**

After construction, the following may be required:

- a. Compensation tree plantings and conditions compliance must be performed as described in the issued Tree Permit. The compensation replacement ratio will vary based on size, condition, and species of tree(s) at the discretion of the Tree Preservation Technician.

- b. A follow-up compliance inspection will be completed at the 1 month mark from building completion. **The TPZ barriers must remain in place until approval to remove is given by the Tree Preservation Technician.**

Once the compliance inspection is completed by the Tree Preservation Technician or designate and all permit requirements have been met, the file will be closed. Failure to comply with permit conditions could result in fine of up \$100,000.00 and or the cash-in-lieu added to the tax roll for collection purposes.

#### **4. Tree Assessment and Preservation Plan Minimum Requirements**

The submitted TAPP must include the following information, additional information may be supplied by the Consulting Arborist or requested by the Tree Preservation Technician if appropriate.

- a. Property Owner Information: name, address, phone number, and email.
- b. Applicant Information: name, address, phone number, and email.
- c. Consulting Arborist Information: name, certification number, company, phone number, and email.
- d. A site plan, inventory, arborist report, and photos of all the inventoried trees.
- e. Trees 20cm DBH or greater on the subject site must be inventoried and included on the TAPP. For multi-stemmed trees, the 3 largest stems must be measured at DBH and added together.
- f. All neighbouring and City owned trees within 6m of the subject site of any diameter must be inventoried and included on the TAPP.
- g. If there are more than 30 trees on the subject site, field tagging of trees shall be required.
- h. The inventory and assessment of the trees must include:
  - i. tree number or tag number
  - ii. regionally common and botanical name
  - iii. DBH in centimetres (diameter at 1.37 m above ground level)
  - iv. biological health rating using standard arboriculture procedures (three or five word rating with definitions key)
  - v. tree ownership- city owned, neighbour owned, privately owned, or boundary
  - vi. minimum Tree Protection Zone (TPZ) distance based on City chart
  - vii. results of assessment – protect, injure, remove or transplant

- i. The site plan used for the TAPP must include:
  - i. The most recent grading plan
  - ii. All relevant trees labelled with numbers corresponding to the inventory
  - iii. All relevant trees plotted with the minimum TPZs shown
  - iv. an accurate metric scale
  - v. the location of all TPZ barriers to be installed
  - vi. all existing structures, driveways, hard surfaces and grades
  - vii. all proposed structures, driveways hard surfaces, grade changes, and machine access routes
  - viii. all proposed new underground services and connections (e.g. water sanitary, hydro)
- j. Tree appraisals may be required. If required, tree appraisals are to be completed using the Trunk Formula Method from the CTLA (Council of Tree and Landscape Appraisers) *Guide for Plant Appraisals, 9<sup>th</sup> Edition*.

### **5. TPZ (Tree Protection Zone) Barrier Specifications**

The TPZ barriers must be installed to the following specifications unless alternative materials or designs are approved by the Tree Preservation Technician. All TPZ barriers:

- a. must be installed in all the locations that correspond with the approved TAPP
- b. must be installed prior to any demolition, excavation or construction activity on the site
- c. must completely enclose all trees to be preserved, or up to property lines where applicable
- d. must be continuous rigid and immovable solid wood hoarding
- e. must be constructed from 3/4in plywood on 1.22 metres (4') high, 2"x4" wood frames, secured to the ground and installed with screws
- f. only where sightline is a safety issue, the TPZ barrier must be, orange safety fencing mounted on a rigid and immovable 1.22 metres (4') high, 2"x4" wood frame, secured to the ground and installed with screws
- g. Horizontal TPZ barrier specifications: 10 cm of wood mulch covered by two staggered, overlapped and screwed together layers, of 3/4in plywood. It must also be adequately secured to the ground
- h. must remain in place throughout the entire project, and cannot be altered, moved or removed in any way without the written authorization of City of Markham, Tree Preservation

Technician

- i. no grade change, storage or temporary storage of any materials or equipment, washing of equipment, nor the dumping of any debris is permitted within this area

## **6. Tree Preservation Measures and Injury Mitigation Techniques**

Tree preservation methodologies, measures and mitigation could include, but are not be limited to:

- a. root excavation and/or pruning at the limits of excavation using a hydro-vac or air excavation tool (Air-spade), supervised by the applicant's consulting Arborist, with the submission of a TIR to the City's Tree Preservation Technician
- b. canopy pruning by a qualified or certified Production Arborist
- c. deep root fertilization, mycorrhizal inoculant and or soil aeration or fracturing
- d. installation of horizontal protection barriers over soft-scape to prevent compaction
- e. wood mulch outside of TPZs
- f. irrigation during summer months
- g. alternative construction methods in the vicinity of trees, e.g. piers and grade-beams, cantilever, geo-grid on grade, etc.
- h. ongoing monitoring by the applicant's consulting Arborist and scheduled TMRs submitted to the City's Tree Preservation Technician
- i. Accepted replacement ratios: 2 to 1 replacement to removal ratio for trees 20-40 cm DBH; 3 to 1 replacement to removal ratio for trees 41 to 60 cm DBH; 4 to 1 replacement to removal ratio for trees 61 to 80 cm DBH; and 5 to 1 replacement to removal ratio for trees ≥81 cm DBH)

<b>City of Markham TREE PROTECTION ZONES (TPZ)</b>		
<b>DBH<sup>1</sup></b>	<b>Minimum TPZ<sup>2</sup></b>	<b>Ideal TPZ<sup>3</sup></b>
< 10 cm	1.2 m	1.2 m
11 – 19 cm	1.8 m	2.7 m
20 – 40 cm	2.4 m	3.6 m
41 – 50 cm	3.0 m	4.5 m
51 – 60 cm	3.6 m	5.4 m
61 – 70 cm	4.2 m	6.3 m
71 – 80 cm	4.8 m	7.2 m
81 – 90 cm	5.4 m	8.1 m
91 – 100 cm	6.0 m	9.0 m
> 100 cm	6 cm per 1 cm Ø	9 cm per 1 cm Ø

1. DBH (Diameter at Breast Height) is the diameter measurement of the tree's trunk at 1.37 metres up from base of tree. For trees with multiple trunks, it is the total of the diameters of the 3 largest trunks at 1.37 metres up from base of tree.

2. TPZ distance is measured from the outside base of the tree. Minimum TPZ requirement or at the tree's dripline, whichever is greater.

3. TPZ distance is measured from the outside base of the tree. Ideal TPZ recommendation or at the tree's dripline, whichever is greater.