



Tree Preservation By-law Review

Community & Fire Services – Operations Department
Development Services – Planning Department
Corporate Services – Legislative Services
CAO Commission – Legal Department



Agenda

- Purpose and Principles
- Background and Update
- Planning Process – Tree Preservation
- Tree By-law Issues and Recommendations
- Next Steps
- Questions and Discussions



Terminology

- DBH – Diameter at Breast Height 1.37 m above ground
- TAPP – Tree Assessment & Preservation Plan
- TPZ – Tree Preservation Zone (Fencing)
- Caliper – Diameter of the tree's trunk +/- 6" (150 mm) above ground
- Replanting Conditions – Trees required to be replanted as a result of getting a tree permit.



Purpose of the Tree Preservation By-law

- To ensure the preservation of the urban canopy for air quality, ground water conservation
- To achieve a tree canopy cover of 30% or greater
- To ensure safety of people and property
- To encourage maintenance of trees on private property



Tree Preservation Legislation





Principles of Tree Preservation By-law Review

- Review of By-law effectiveness to determine where improvements can be made to strengthen the By-law
- Opportunity to align internal processes to ensure consistency in application of tree preservation strategies across the municipality
- Prioritizing preservation before replacement and compensation
- Ensuring transparency and fairness in application of the By-law



Background – Workshop #1

- Urban Forest Policies and Principles
- Tree Preservation and Protection in Markham
 - Where trees fit with various legislation
 - tree permitting and development processes
 - Tree Preservation By-law
 - number of application and permit results
 - By-laws in other municipalities
- Replanting and Compensation
- By-law Appeals, Enforcement and Prosecution



2017 – Tree Preservation By-law Update

- On May 9, 2017, Markham City Council passed an amendment to the Tree By-law to make property owners ultimately responsible for the destruction of trees on their property (Rebuttable Presumption Clause). This amendment will assist with enforcement/prosecution of the Tree By-law.



Background – Workshop #2

- Tree Preservation By-law Applicability
- Planning Process | Tree Preservation
- Tree Removal Compensation
- Tree Preservation By-law Review – Issues & Recommendations List
 - Prosecution and Appeal Process
 - Property Rights
 - Licensing of Arboriculture Companies and Collecting Securities



2018, 2019, 2020, & 2021 Non-Construction Tree Permits

	Quantity				Percentage			
	2018	2019	2020	2021	2018	2019	2020	2021
Total Applications Received / Cancelled	685/23	545/35	683/65	723/43				
Total Trees Inspected	972	793	808	1142				
Total Permitted Without Conditions (mostly dead trees or trees facing imminent failure)	453	353	361	486	47%	45%	45%	43%
Total Permitted With Replanting Conditions (mostly related to species selection)	309	203	237	229	32%	26%	29%	20%
Conditional Replant Trees	531	348	436	497				
Total Tree Removal Requests Denied	185	199	210	384	19%	25%	26%	34%
Total Decisions Appealed	7	5	8	11				
Appeals as a percentage of denied requests					3.8%	2.5%	3.8%	2.9%
Appeals as a percentage of total trees inspected					0.7%	0.6%	0.9%	1.0%



2018, 2019, 2020 & 2021 Residential Grading & Servicing Tree Permits

	Quantity			
	2018	2019	2020	2021
Residential Infill Grading & Servicing Applications	198	161	98	106
Trees within footprint of proposed building (By-law exempt)* Includes Septic	28	47	34	85
Trees permitted to be removed without conditions (e.g. dead trees or trees facing imminent failure, less than 20 cm DBH (2020))	35	36	86	108
Trees permitted to be removed with conditions (e.g. site grading, ingress/egress)	202	206	146	217
Conditional Replant Trees	438	470	336	534
* Amendment to By-law recommended to revise exemption to require replanting/compensation				

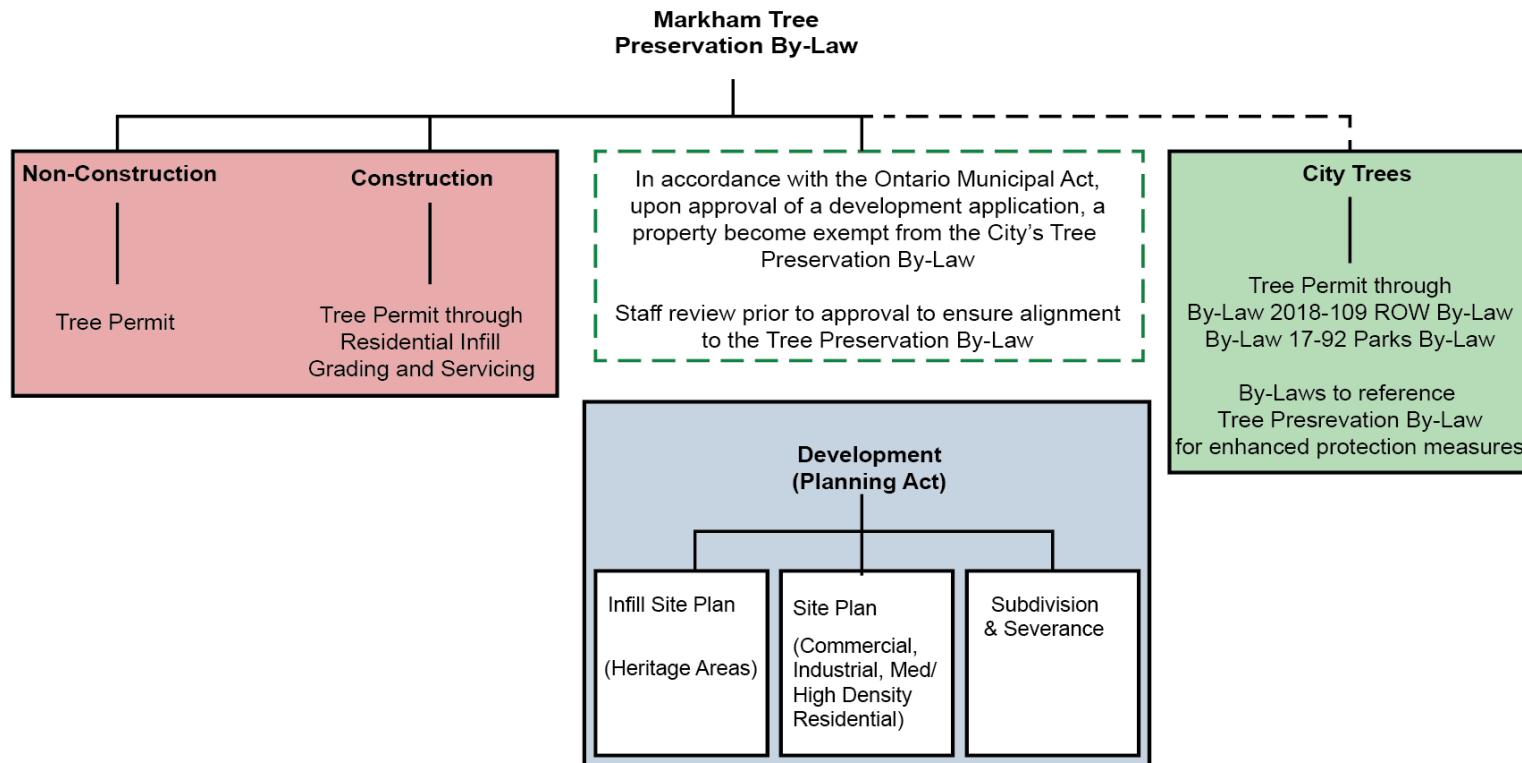


Illegal Removals

	2018			2019			2020			2021		
	Occurrences	Trees Removed	Replanting	Occurrences	Trees Removed	Replanting	Occurrences	Trees Removed	Replanting	Occurrences	Trees Removed	Replanting
Resident/Owner	10	33	156	16	21	107	25	53	239	33	77	395
Infill Development	1	20	120	3	40	88	1	1	12	3	4	24
Site-Plan/Subdivision Development	5	69	461	4	67	441	2	9	24	2	12	72
Heritage Site Plan	-	-	-	1	3	12	0	0	0	2	14	72
TOTAL	16	122	777	24	131	648	28	63	275	40	107	563



Planning Process & Tree Preservation By-law





Issues & Recommendations

1. Tree Permit Expiration	7. Permit Signage	13. Proximity of Trees to Buildings
2. Boundary Trees	8. Tree Preservation Zone (TPZ) Barrier Signage	14. Trees Located in Rear Yards
3. Collect Securities	9. Licensing of Tree Companies/Arborists	15. Pool Process
4. Permit and Application Fees	10. Protection of Shrubs	16. Heritage Designation for Trees
5. Tree Compensation	11. Size Threshold of Trees	17. Urban Design to Issue Tree Removal Permits
6. Compensation at Appeals	12. Trees Located in the Proposed Building Footprint	18. Prosecution of Offences



1. Tree Permit Expiration

Issue: Deadline for fulfilling replanting conditions

Currently Section 7.2.e of the By-law designates the duration of a tree preservation permit at 90 days. Permit holders regularly require multiple permit extensions.

Recommendation: Extend permit validity to one year from the date of issuance, with the option to extend to the following planting season.



2. Boundary Trees



Boundary trees are trees on the boundary between neighbouring lands. To comply with the Forestry Act Section 10(3). Applicants are required to obtain written consent from adjacent land owners.



2. Boundary Trees

Issue: Currently there is not a consistent process for managing boundary trees across the City.

Recommendation - The City will:

1. send a form letter to the applicant requesting they share their plans with the neighbour
2. send a form letter to the neighbour letting them know of the request and their rights and obligations.



3. Collect Securities

a. Securities for Replanting Conditions

b. Securities for TPZ Barriers



3a. Collect Securities for Replanting Conditions

Issue: Tree Preservation does not collect securities for replanting conditions, and has a low compliance rate for replanting conditions. Development Services does collect securities for replanting conditions and has 100% compliance rate for replanting conditions

Recommendation:

- Residential tree permits to sign an undertaking as an acknowledgement of their replanting conditions, and will be tax rolled if conditions are not met.
- All Development related tree permits (including Infill) to provide a security deposit of \$600.00 per conditional replant tree



3b. Collect Securities for TPZ Barriers

Issue: Securities are not collected for Tree Protection Zone (TPZ) Fencing.

Recommendation: Applicable permits will be required to submit a Letter of Credit (LC) for installation and preservation of TPZ fencing. This LC will act as a safeguard to ensure TPZ fencing is installed and approved prior to construction initiation allowing the fencing to come later in the approval process and alleviating the resident concern about TPZ's being an eye sore in the neighbourhood. Once installed a percentage of the security will be kept until the end of construction to ensure TPZ's are properly maintained throughout the project.



4. Permit Application Fees

Issue: Currently Permit Application Fees are not charged for residential tree permits. For infill developments, permit fees are charged through the Engineering Residential Grading and Servicing (RGS) process.

Recommendation: Continue to provide residential tree permit applications as a free service. Continue to charge a fee for development related tree removal.



5. Tree Compensation - Current

Tree DBH	Non-Construction Tree Permit	Infill Tree Permit & Minor Variances	Subdivisions, Site Plans, Severances, & Heritage Infill	Street Trees	Park Trees
0cm – 19cm	NA	NA	NA	Progressive Aggregate Caliper Replacement Method	Removal Not Allowed
≥20cm - 40cm	2:1	2:1	2:1		
>40cm - 60cm	3:1	3:1	Council of Tree Landscape Appraisers (CTLA) 9th Edition Appraisal		
>60cm - 80cm	4:1	4:1			
>80cm	5:1	5:1			
Minimum Size for Replanting	6cm ø deciduous/ 300cm tall conifers	6cm ø deciduous/ 300cm tall conifers	6cm ø deciduous/ 300cm tall conifers	6cm ø deciduous/ 200cm tall conifers	NA
Cash-in-Lieu	\$300 per tree	\$600 per tree	\$600 per tree	\$600 per tree first 10 trees, \$500 per tree 11-20, \$460 per tree over 20	NA

Replanting ratio of 6:1 applied when removed without a permit and ordered to replant.



5. Tree Removal Compensation Recommendation

Utilize Markham Aggregate Caliper Method (MACM) for consistency across the City when appraising trees.

MACM is fair and consistent, further it removes the subjectivity associated with the Plant Appraisal Guide 9th edition, when considering factors like location rating. MACM provides a more stable outcome when used by multiple appraisers.

Markham Aggregate Caliper Replacement Method

Total DBH Removed = DBH Tree X ((Structure rating + Health rating)/2)

White Spruce - 34cm DBH, Structure = Poor = 0.25, Health = Poor = 0.25

- $34X((0.25+0.25)/2) = 1.7$ Actual OPS Conditions: 2 trees



6. Compensation at Appeals

Issue: The issue of compensation comes up at every Appeal hearing. During Appeals, the deliberation committee is considering a tree for removal that does not qualify for removal under the Tree Preservation By-law, therefore, a standard should be created for appeals that acknowledges the tree does not qualify for removal under the By-law.

Recommendation: Trees evaluated for appeals will be valued using the Aggregate Caliper Method (ACM). Owners will be charged for the actual value of the tree.



7. Permit Signage

Issue: Tree removals are often reported as illegal removals even when there is a permit for the removal.

Recommendation: Require signage to be placed on site in a visible location from the street. The signage will have the tree location information, and include the Tree Assessment and Preservation Plan (TAPP) for development sites. Urban Design and Operations to use the same signage, which will provide contact information, for the appropriate department, (a small fee will be applied for the signage).



8. Tree Preservation Zone (TPZ) Barrier Signage

Issue: TPZ barrier signage is required on both development and infill development sites. Once TPZ's barriers have been installed an inspection for approval is required.

Recommendation: Provide specifications for signage in developer package for UD and Operations. Signage to include contact information for the inspector in case the TPZ barriers come down for any reason.



9. Licensing of Tree Companies/Arborists

Issue: Currently licensing of tree companies/arborist is not required. Licensing has been suggested as a way of ensuring good tree practices.

This can present a problem for property owners, who can hire tree companies that do not know how to properly prune trees and injure tree to the point of destruction. However property owners who want to remove trees themselves and have a permit to do so can run into licensing issues if licenses are required.

Recommendation: Allow companies to work without licenses.

Licensing will present many issues for do it yourself tree removers, or people who want to prune their own trees. A licensing system could be exclusionary and could dissuade companies from working in Markham.



10. Protection of Shrubs

Issues: Shrubs and hedges are not protected under the Tree Protection By-law.

Recommendation: Do not protect individual shrubs. Base the compensation of a hedge on the number of stems 20 cm or greater. When trees form a hedge (cedar, elm or beech), if it is to be maintained during construction preservation would be required.



11. Size Threshold of Trees Protected under the Tree Preservation By-law

Issue: All privately owned trees $\geq 20\text{cm}$ Diameter at Breast Height (DBH) are regulated. All municipally owned trees are regulated regardless of size.

Recommendation: Maintain the size of protection in the City of Markham at $\geq 20\text{cm}$ Diameter at Breast Height (DBH) as regulated for trees on private property.

The size of protection in Markham is reasonable and defensible as well, the size of protection that is known to many residents.



11. Size Threshold of Trees Protected under the Tree Preservation By-law Recommendation

Change size of trees requiring a permit to 10cm DBH for research, but exempt all trees between 10cm - <20cm DBH, while still requiring permits for these trees. This measure will generate appropriate data to analyze if the size of protected trees should be adjusted in Markham.

Markham has a reasonable and justifiable DBH size of protection (≥ 20 cm) in the tree preservation by-law. It is important to ensure the best maintenance of the Urban Forest, collecting the City's own data will enable Markham to make an informed decision on size of protection.



11.1. Diameter at Breast Height (DBH) of Multi-stem Trees

Issue: The current multi-stem DBH calculation leads to the protection of small trees. It also increases the value of large multi-stem trees above the industry standard.

Under the current by-law definition the DBH of a multi-stem tree is calculated by adding the DBH's of the three largest limbs. This method leads to elevated DBH's, influences compensation value and minimum tree protection zones for these trees. However, there is an industry standard in arboriculture for calculating the DBH of the multi-stem tree:

$$\text{Sqr}\sum(n^2...) = \text{Effective DBH}$$



11.1. DBH of Multi-stem Trees Recommendation

Revise the current multi-stem DBH calculation to the industry standard quadratic equation.

$$\text{Sqr}\sum(n^2...) = \text{Effective DBH.}$$

Example: A large multi-stem tree with three stem diameters of 40, 40 and 40 is valued as a 120 cm DBH tree. According to the widely practiced arboricultural calculations the tree would be viewed as a 69 cm DBH tree. This then influences compensation value and minimum tree protection zone.



12. Trees Located in the Proposed Building Footprint

Issue: Trees located in the building footprint are exempt from replanting conditions in the Tree Preservation By-law 2008-96

The exemption of trees within the building footprint (where there is no planning application) results in net canopy loss and creates an inconsistency in compensation between tree reviewing departments across the City. Development Services requires compensation for trees located in the building footprint for Site plan and Subdivision development.



12. Trees Located in the Building Footprint Recommendation

Remove the exemption in the Tree Preservation By-law 2008-96 for trees within the building footprint and require compensation for trees located within the building footprint.

Removing the exemption for trees within the building footprint will prevent the net canopy loss the City is currently experiencing as a result of the exemption. Requiring compensation for trees within the building footprint will create consistency across the City, as well as encourage design development to preserve trees.



13. Proximity of Trees to Buildings

Issue: Should there be an exemption in the Tree Preservation By-law based on proximity of trees to buildings and other infrastructure?

Recommendation: Allow trees to be removed if they are $\leq 1.5\text{m}$ from centre point of the tree at DBH (1.37 m above the ground surface) to building edge, of primary dwelling only. These removals will be subject to conditions.



14. Trees Located in Rear Yards

Issue: “Property Rights” – Should the municipality have the right to impose restrictions such as tree preservation on private property?

- 1) All GTA municipalities with a tree bylaw protect trees in the front, side and rear yards; there were no municipalities found exempting trees in rear yards.
- 2) 54.5% of the 2019 permit requests were for trees located in the rear yard.
- 3) Trees in rear yards are often larger – the average DBH size of a tree requested for a permit for removal is:

Front yard: 38.8cm

Side yard: 37.7cm

Rear yard: 44.3cm



14. Trees Located in Rear Yards Recommendation

Continue to protect trees in rear yards.

Maintain by-law protection rate at same level as other similar GTA municipalities. The City's canopy goal of 30% canopy cover will not be met without the contribution of trees in rear yards. There will be a severe canopy loss if trees in rear yards are not protected.



15. Pool Process

Issue: Currently the City receives several pool applications annually requiring tree removals to install a pool. There is no mechanism through the by-law to allow tree removals because of pool installations or other major site construction projects.

Recommendation: Allow pool installations and other major site construction under the by-law. Work with these applications the same way Tree Preservation works with Infill development applications. A permit will be granted based on an approved Pool enclosure application.



16. Heritage Designation for Trees

Issue:

- Under the Ontario Heritage Act trees must be connected to “cultural heritage value” and must meet one or more of the criteria under Regulation 9/06 of the Ontario Heritage Act, to be protected.
- The process of designation would be to identify and document the tree’s cultural heritage value, submit to Heritage Markham Committee for consideration and if deemed worthy of protection it would follow a similar process as it current practice for a building or structure.

Recommendation:

- Heritage Planning to explore this opportunity further.



17. Urban Design to Issue Tree Removal Permits

Issue: Developers want to remove trees to avoid nesting season and to make the most of the construction season.

There have been several significant illegal removals on development sites when developers do not have a development agreement and cannot secure permission to remove trees. Facilitating Urban Design to process tree permits for development sites, to either permit or deny the requests based on the status of their review will help developers undertake tree removals at their schedule. Tree securities will be collected prior to any removals.



17. Urban Design to Issue Tree Removal Permits Recommendation

- When development applications are submitted and deemed complete for City review, once accepted, all trees will be under Urban Design from application acceptance through the development process to maintenance acceptance.
- Developers who choose to utilize a tree permit, rather than waiting until they have an approved development agreement will be required to submit a final TAPP at the end of the approval process. The final TAPP will be compared to the tree permit TAPP, if there are trees which could have been preserved based on the final TAPP, which were removed based on the tree permit TAPP, the developer will be required to pay an additional full compensation value for each tree unnecessary removed.



18. Prosecution of Offences

Issues: It is difficult to establish where enforcement responsibility lies for prosecution of offences, between Operations and Urban Design. The clear lines of responsibility outlined in the following slides illustrate when each department would take responsibility for enforcement of Prosecution of Offences.

The following are the three offences regarding trees:

- 1) Illegal Removals
- 2) Illegal Tree Injury
- 3) Failure to Install Tree Preservation Fencing – *new* – To be added to AMPS Bylaw
- 4) Failure to Install Tree Preservation Signage – *new* – To be added to AMPS Bylaw



18.1. Illegal Removal

- When a tree is removed illegally the appropriate department will respond. If there is an active development application on the site Urban Design will be contacted regarding the illegal removal, if there is not an active development application Operations will be contacted.
- When valuing the trees that have been removed the Aggregate Caliper Method (ACM) will be the appraisal guideline. Illegal removers will be required to replant twice the ACM value of the tree.
- If only a stump remains the trees will be evaluated as perfectly healthy, and ACM will be used to determine the value of the tree.



18.2. Illegal Tree Injury

- When a tree is injured illegally, if there is an active development application on the site Urban Design will be contacted, if there is not an active development application Operations will be contacted.
- Mitigation methods are often required and are usually established by requiring an arborist report for the injury and mitigation, officers can require specific types of investigation to ensure below grade safety. The tree owner is issued a By-law order to mitigate the injury.
- If multiple injuries occur, the proponent may be required to remove the tree and the full value of the tree may be required for replanting or compensation.



18.3 Tree Preservation Zone (TPZ) Barrier Violation

- A TPZ violation is managed as a tree injury infraction. When Tree Preservation Fencing has been violated if there has been no tree injury, education and a warning with the requirement to re-instate TPZ barrier must be provided immediately.
- For a second contravention of a TPZ barrier at the same site, a By-law order is issued for the applicant to reinstate the TPZ barrier immediately and to mitigate any damage to the tree.
- If there are two or more contraventions, the TPZ LC will be pulled, charges will be laid and each day until the TPZ barriers have been reinstated, the site will be ticketed by AMPS. The technician will continue to visit the site randomly to ensure TPZ barriers are being maintained.



Next Steps

- Draft text to the revised Tree Preservation By-law
- Draft required changes to other By-laws (AMPS, ROW, Park, Fee Bylaws, Engineering will be undertaking an update of the Site Alteration Bylaw as a result of this update)