ATTACHMENT 5 717 NASHVILLE

ARBORIST REPORT AND TREE PRESERVATION PLAN

LOCATION:

717 Nashville Road Kleinburg, ON

APPLICANT:

c/o

Popovich Associates

1 Robert Speck Parkway, Suite 100 Mississauga, ON L4Z 3M3

31 January 2023, revised 21 June 2023



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INTRODUCTION

An Arborist Report and Tree Preservation Plan was completed for 717 Nashville Road in Kleinburg (Vaughan), Ontario. The subject property is located on the south side of Nashville Road and west of Highway 27.

The City of Vaughan's 'Private Property Tree Protection By-law no. 052-2018' is applicable to the subject property. A permit is required prior to impacts to any Public trees, and private trees greater than 20 centimetres in diameter.

Existing Conditions and Proposed Works

The subject property consists of an existing residential lot of a 1-storey dwelling, driveway, and pool. The proposed development includes the construction of a new dwelling, driveway realignment, and associated septic system. Refer to Tree Preservation Plan (Figure 1) for the topographic survey (existing conditions) and proposed site, grading, and servicing plan.

METHODOLOGY

Tree Inventory

Field assessments to collect tree inventory data were completed on 5 May 2022; the site was revisited on 25 May 2022 to assess damage to trees following a windstorm. All trees greater than 10 cm diameter on the subject property and within 6m of the subject property, and all City-owned tree resources within 6m of the subject property, were included in the inventory.

The topographic survey provided was used to locate the trees. Species, diameter at breast height (DBH), health, condition, dripline and relevant comments were recorded for each of the trees. Groups of trees (tree polygons) that could not be individually located were labelled with the prefix 'P'. Trees located on neighbouring property were assessed to the greatest extent possible from subject property limits. All assessments were limited to ground survey.

RESULTS

Tree Inventory

A total of 21 trees and three tree polygons were identified within the City road allowance, on the subject property and within 6m of the subject property on neighbouring property. Trees 1 and 17 are located within the City road allowance. Trees 5, 8, 18, 20, 23, 24, and tree polygon P2 are shared (boundary) trees. Tree polygon P19 is located on neighbouring property. All remaining trees are located on the subject property.

Species found include: Tamarack (*Larix laricina*), Eastern White Cedar (*Thuja occidentalis*), Norway Maple (*Acer platanoides*), Manitoba Maple (*Acer negundo*), Black Walnut (*Juglans nigra*), Blue Spruce (*Picea pungens*), Basswood (*Tilia americana*), and Siberian Elm (*Ulmlus pumila*). Refer to Table 1 for the detailed tree inventory, Appendix A for photos of the trees and the Tree Preservation Plan (Figure 1) for the locations of the trees.

ANALYSIS AND DISCUSSION

Tree Removal

The removal 11 trees and two tree polygons will be required to accommodate the proposed works, including Trees 3, 4, 8 to 9, 11, 12, 14, 16, 17, 22, and tree polygons P2, and P7. Trees 10, 13, and 15 had failed or were deemed potentially hazardous following the storm and were recommended for removal. Tree 8 has a history of failure and is in poor and declining condition, and is recommended for removal due to hazard potential.

Tree Retention and Tree Preservation Recommendations

The preservation of all remaining trees will be possible given the appropriate tree preservation measures discussed in this report and plan are implemented.

Tree 1 is located within the City road allowance. This tree will be protected by light duty tree protection hoarding, as per Detail 107B on the Tree Preservation Plan (Figure 1). All remaining trees will be protected by heavy duty tree protection hoarding, as per Detail 107A on the Tree Preservation Plan (Figure 1). Any grading (including for swales) within the mTPZs of Trees 1, 5, 6, 18, 21, 23, 24, and tree polygon P19 should be completed towards the final phase of construction and using by hand or using light equipment only, under supervision of a Certified Arborist. Tree 20 is in declining condition and should be monitored to ensure it is viable for retention. Tree polygon P19 and Tree 20 has been heavily impacted by construction on the neighbouring property. These trees should be monitored to ensure they are viable for retention.

It is the applicants' responsibility to discuss potential impacts to trees located near or wholly on adjacent properties or on shared boundary lines with their neighbours. Should such trees be injured to the point of instability or death the applicant may be held responsible through civil action. The applicant would also be required to replace such trees to the satisfaction of City of Vaughan.

Tree preservation hoarding should be installed prior to demolition and construction and remain in place throughout the construction process, as specified in the Tree Preservation Plan (Figure 1). No grade changes, storage of materials or equipment is permitted within the tree protection zone (TPZ), unless specified above. The driplines, mTPZs, tree protection hoarding locations, tree protection hoarding details, and tree protection notes, are shown on the Tree Preservation Plan (Figure 1). Refer to Appendix A for photos of these trees.

Tree Replacement Requirements

A total of 24 trees will need to be replanted to compensate for the tree removals, as per the City of Vaughan's guidelines. Dead/hazardous trees and trees less than 20 cm DBH were excluded from the calculations. Refer to Table 1 for the tree replacement calculation for each tree.

Securities

Refer to Table A. for the costs associated with tree removals, tree replacement, and tree protection measures installation. The total costs related to these items is \$32,430.

Table 1. Tree removal, replacement, and tree protection measures installation costs

Туре	Units	Unit Price	Price	Total
Tree Removals	-	-	\$10,000	
Tree Replacement	24	\$550/tree	\$13,200	
Light Duty Tree Hoarding (snow fence)	13m	\$80/metre	\$1,030	\$29,130
Heavy Duty Tree Hoarding (plywood)	parding 43m		\$4,300	
Mobilization Fee	1	\$600	\$600	

CONCLUSION AND RECOMMENDATIONS

A total of 21 trees and three tree polygons were identified within the City road allowance, on the subject property and within 6m of the subject property on neighbouring property. The removal 11 trees and two tree polygons will be required to accommodate the proposed works, including Trees 3, 4, 8 to 9, 11, 12, 14, 16, 17, 22, and tree polygons P2, and P7. Trees 10, 13, and 15 had failed or were deemed potentially hazardous following the storm and were recommended for removal. Tree 8 has a history of failure and is in poor and declining condition, and is recommended for removal due to hazard potential. All remaining trees may be preserved assuming the tree protection measures noted in this report and the Tree Preservation Plan (Figure 1) are implemented.

Tree preservation hoarding should be installed prior to demolition and construction and remain in place throughout the construction process, as specified in the Tree Preservation Plan (Figure 1). No grade changes, storage of materials or equipment is permitted within the tree protection zone (TPZ), unless specified above. The driplines, mTPZs, tree protection hoarding locations, tree protection hoarding details, and tree protection notes, are shown on the Tree Preservation Plan (Figure 1).

Respectfully Submitted,



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TABLE 1. DETAILED TREE INVENTORY

Location: 717 Nashville Road, Kleinburg Date: 5 May 2022 (25 May 2022) Surveyors: AC

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH) ²	Trunk Integrity	(G) Crown Structure	ri Crown Vigour	Crown Dieback	Approx. Dripline	minimum Tree Protection Distance ¹	Comments	Action	Ownership	Required Compensation
			(cm)		, Poor		%	(m)	(m)				
1	Tamarack	Larix laricina	25	F	PF	F		2	1.8	Minor pruning wounds due to raised crown, topped at 6m due to hydroline, overextended branch	Preserve - injure	City	
P2	Eastern White Cedar	Thuja occidentalis	10.5-22	F	F	F		1-2	1.2-1.8	4 trees, two > 20cm DBH, tops dead	Remove	Shared	2
3	Norway Maple	Acer platanoides	17,22 [28]	F	F	F		6	1.8	Co-dominant at 0.3m with moderate included bark, moderate pruning wounds, minor lean towards the northeast, moderate seams	Remove	Private	1
4	Norway Maple	Acer platanoides	23.5	FG	F	F		4	1.8	Minor lean towards the northeast, moderate seam	Remove	Private	1
5	Norway Maple	Acer platanoides	37.5	F	FG	FG		7	2.4	Moderate pruning wounds, rubbing at base with moderate included bark, included cedar at base	Preserve - injure	Shared	0
6	Eastern White Cedar	Thuja occidentalis	18.5	FG	F	FG		2	1.2	Missing leader, minor pruning wounds	Preserve - injure	Private	
P7	Manitoba Maple	Acer negundo	23,12.5 [26]	PF	F	F		3	1.8	Co-dominant at base with very heavily included bark and fused stems, minor asymmetrical crown, moderate pruning wounds	Remove	Private	1
	Sugar Maple	Acer saccharum	11.5	PF	F	F		2	1.2	Fused at base with Manitoba Maple with heavily included bark, and small crown	Remove	Private	

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH) ²	Trunk Integrity	(G) Crown Structure	ria Crown Vigour	% Crown Dieback	(3) Approx. Dripline	minimum Tree Protection Distance ¹	Comments	Action	Ownership	Required Compensation
			(cm)	(F)	, Poor	(P)	70	(111)	(,,,,	Moderate lean towards the east,			
8	Manitoba Maple	Acer negundo	54	PF	PF	PF		7	3.6	heavy epicormic branching, co- dominant at 3m, large stem wound with decay from previously failed branch, moderate broken branches, hanger in crown	Remove – potentially hazardous	Shared	0
9	Black Walnut	Juglans nigra	32	F	FG	FG		5	2.4	Moderate stem wound at base with decay, narrow branch unions with minor included bark	Remove	Private	2
10	Blue Spruce	Picea pungens	32	-	-	-		-		Minor pruning wounds due to raised crown, minor bow, failed at roots	Remove - dead	Private	0
11	Blue Spruce	Picea pungens	41.5	FG	FG	FG		4	3	Minor asymmetrical crown	Remove	Private	3
12	Blue Spruce	Picea pungens	35	FG	FG	FG		3	2.4	Crook, small crown	Remove	Private	2
13	Blue Spruce	Picea pungens	49	-	-	-		-		Sweep, moderate asymmetrical crown, failed at roots, leaning against Trees 15 and 16	Remove - dead	Private	0
14	Blue Spruce	Picea pungens	31	FG	F	FG		3	2.4	Minor pruning wounds, moderate asymmetrical crown	Remove	Private	2
15	Blue Spruce	Picea pungens	27	PF	PF	F	15	2	1.8	Minor pruning wounds, crooks, double leader, Tree 13 in crown, heavily asymmetrical crown from damage	Remove - potentially hazardous	Private	0
16	Blue Spruce	Picea pungens	49.5	FG	FG	F	10	4	3	Minor pruning wounds, Tree 13 in crown	Remove	Private	3
17	Blue Spruce	Picea pungens	46.5	FG	F	F		4	3	Minor pruning wounds, multi- stemmed at 7m, minor asymmetrical crown	Remove	City	3

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH) ²	Trunk Integrity	Crown Structure	Crown Vigour	Crown Dieback	Approx. Dripline	minimum Tree Protection Distance ¹	Comments	Action	Ownership	Required Compensation
			(cm)		d (G), , Poor		%	(m)	(m)				
18	Basswood	Tilia americana	10-17	PF	F	F		3	1.8	4 trees, union at base with heavily included bark and fused stems, minor epicormic branching, construction on neighbouring property	Preserve - injure	Shared	
P19	Eastern White Cedar	Thuja occidentalis	5-20	F	F	F		2	1.2	21 trees, one > 20 cm DBH, construction on neighbouring property, two trees failed at 1.2m into neighbouring property	Preserve - injure	Neighbouring	
20	Manitoba Maple	Acer negundo	30	PF	PF	PF		5	1.8	Moderate lean towards the southwest, heavy epicormic branching, moderate deadwood, moderate shear crack, construction on neighbouring property	Preserve - monitor due to poor condition	Shared	
21	Siberian Elm	Ulmus pumila	29	FG	F	PF		3	1.8	Moderate deadwood, co-dominant at 6m, construction on neighbouring property	Preserve - injure	Private	
22	Norway Maple	Acer platanoides	75	PF	PF	F		9	4.8	Moderate growth deficit, moderate seam, moderate pruning wounds with decay, moderate stem wound at base with decay and cavity, union at 2m with moderate included bark, moderate deadwood, overextended branch with moderate included bark	Remove	Private	4
23	Manitoba Maple	Acer negundo	34	F	F	PF		4	1.8	Minor lean towards the southeast, minor pruning wounds, minor broken branches, mioderate epicormic branching	Preserve - injure	Shared	

Tree #	Common Name	Scientific Name	Diameter at Breast Height (DBH) ²	Trunk Integrity	Crown Structure	Crown Vigour	Crown Dieback	Approx. Dripline	minimum Tree Protection Distance ¹	Comments	Action	Ownership	Required Compensation
			(cm)		Good (G), Fair (F), Poor (P)		%	(m)	(m)				
24	Manitoba Maple	Acer negundo	21,14.5 [25.5]	PF	F	PF		5	1.8	Minor stem wound, moderate epicormic branching, moderate pruning wounds, union at base with heavily included bark with decay, moderate grapevine competition, minor lean towards the east	Preserve - injure	Shared	
	END												

¹ Minimum Tree Protection Distances for Trees in Naturalized Areas as per Table 1 of the City of Vaughan's Private Property Tree Removal & Protection Construction or Infill Application Removal Permit Application were used. The minimum Tree Protection Distance required is the greater of the minimum Tree Protection Distance or the dripline.

² The effective DBH was calculated by taking the square root of the sum of the squares of the DBH of each stem.

APPENDIX A. PHOTOS OF THE TREES

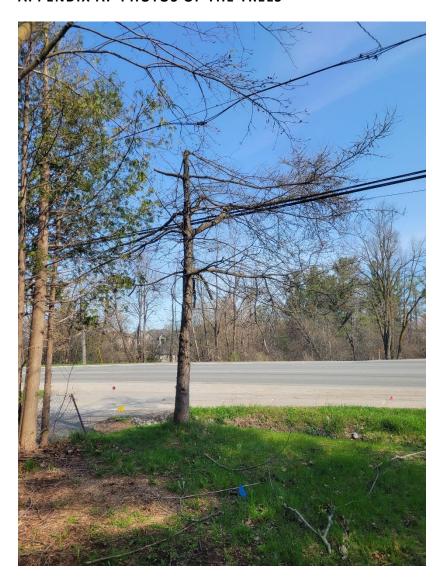


Photo 1. Tree 1, view looking northwest

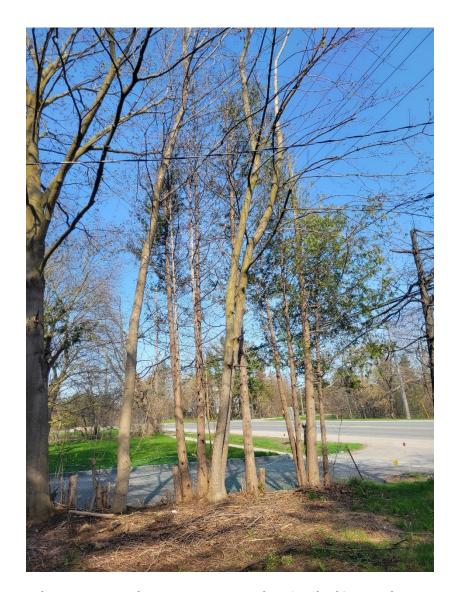


Photo 2. Tree polygon P2, Trees 3 and 4, view looking northwest

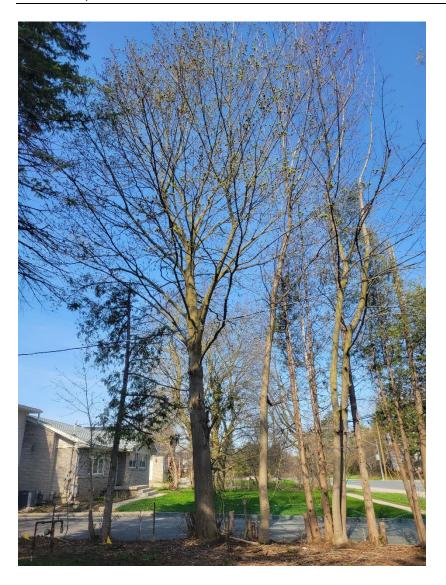


Photo 3. Tree polygon P2, Trees 3 to 6 (right to left), view looking west

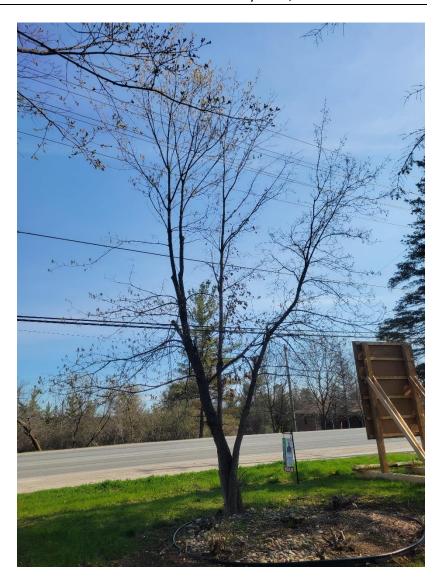


Photo 4. Tree polygon P7, view looking northeast

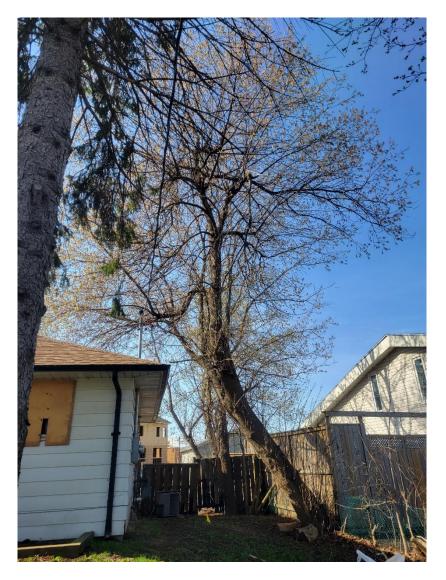


Photo 5. Trees 8 and 9, view looking southwest

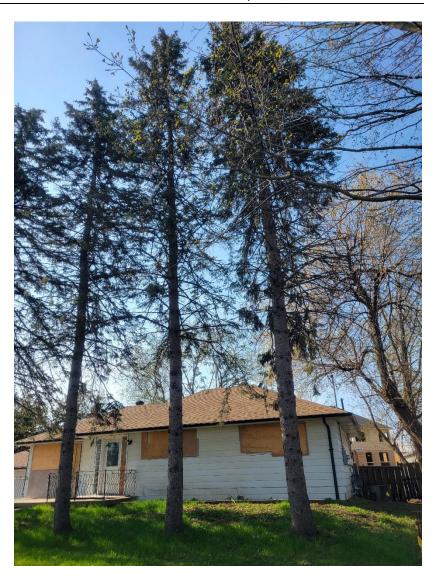


Photo 6. Trees 10 to 12, view looking southeast

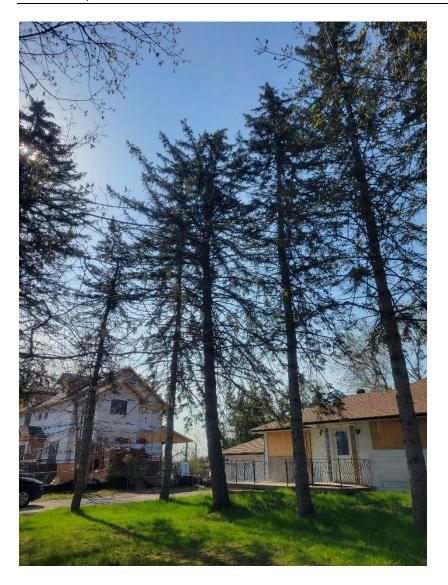


Photo 7. Trees 11 to 14, view looking southeast

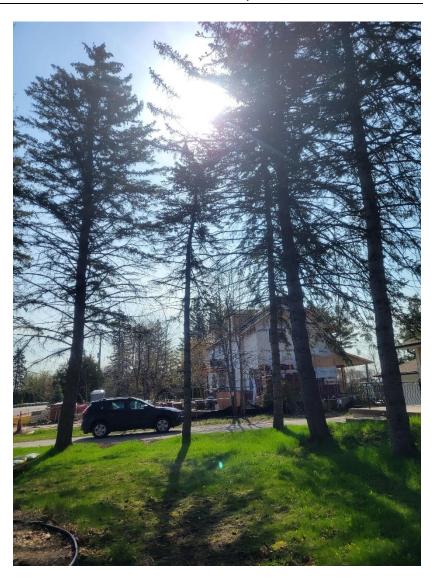


Photo 8. Trees 12 to 16, view looking east

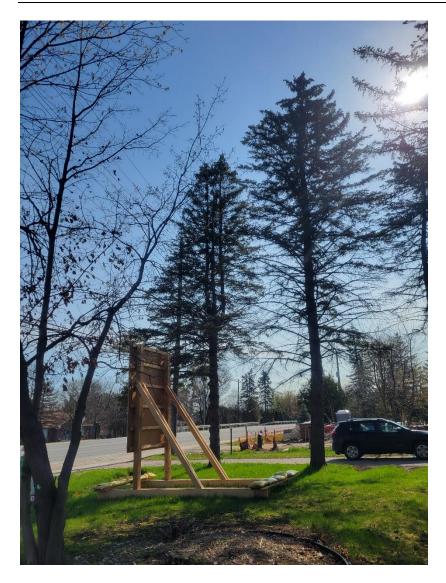


Photo 9. Trees 16 and 17, view looking northeast



Photo 10. Tree 18, view looking southeast



Photo 11. Tree polygon P19, view looking southeast

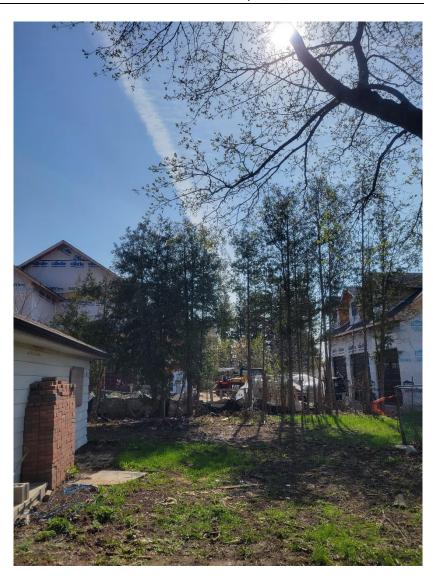


Photo 12. Tree polygon P19, view looking east



Photo 13. Trees 20 and 21, view looking southeast



Photo 14. Tree 22, view looking west

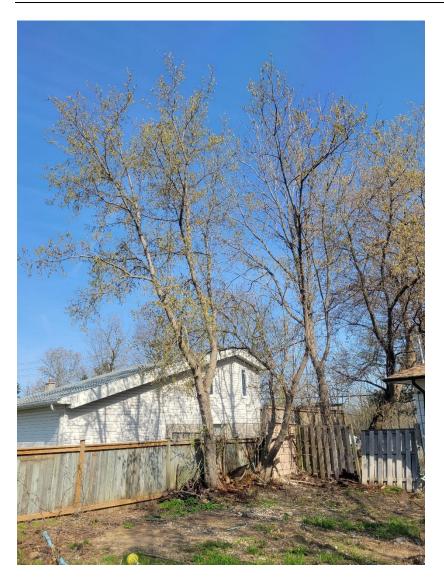


Photo 15. Trees 23, 24, 8 and 9, view looking northwest

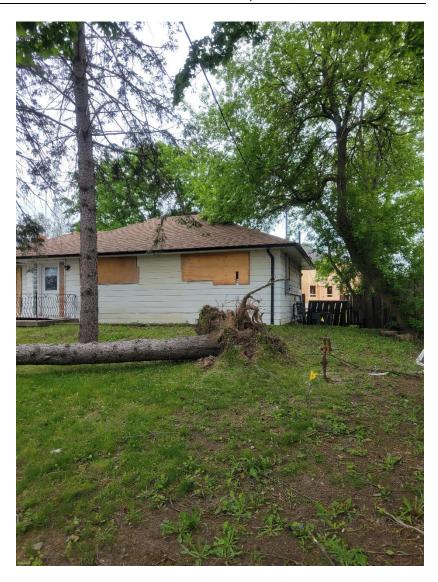


Photo 16. Tree 10 failure

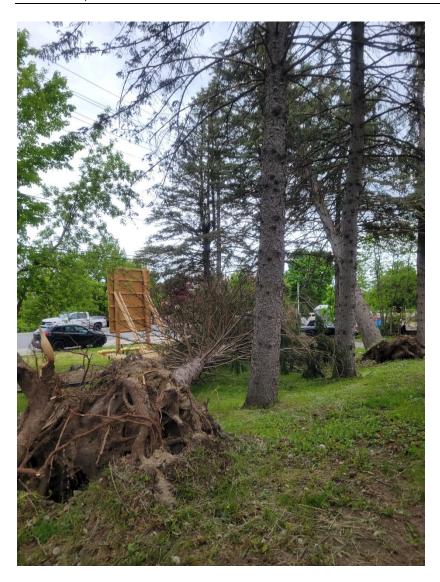


Photo 17. Trees 10, and 13 failure

