Tree Inventory and Preservation Plan
7525 Garner Road
Niagara Falls, Ontario

prepared for

Madan Arianna Developments Inc.
145 Traders Boulevard East, Unit 20
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prepared by

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KUNTZ FORESTRY CONSULTING INC. Project P4195

Introduction

Kuntz Forestry Consulting Inc. was retained by Madan Arianna Developments Inc. to complete a Tree Inventory and Preservation Plan for the proposed development at 7525 Garner Road in Niagara Falls, Ontario. The subject property is located on the west side of Garner Road, north of Brown Road, and south of Emily Boulevard, within a residential area.

The work plan for this tree preservation study included the following:

- Prepare an inventory of the tree resources measuring 10cm diameter at breast height (DBH) and greater on and within six metres of the subject property with the potential to be impacted by the proposed works and trees of all sizes within the road right-of-way;
- Evaluate potential tree saving opportunities based on proposed development plans, and;
- Document the findings in a Tree Inventory and Preservation Plan.

The results of the evaluation are provided below.

Methodology

The tree inventory was conducted on 24 April 2024. Trees measuring 10cm DBH and greater on and adjacent to the subject property with the potential to be impacted by the proposed works and trees of all sizes within the road right-of-way were included in the inventory. Trees were located using the topographic survey provided for the property, aerial imagery, and estimations made from known points in the field. Trees included in the inventory were identified as Trees 813 – 828 and A – I. Where appropriate, trees were tagged with their identification number. Trees that were not tagged were identified using the alphabetic sequence.

Tree resources were assessed utilizing the following parameters:

Tree # – Number assigned to trees that corresponds to Figure 1.
Species – Common and botanical names provided in the inventory table.
DBH – Diameter (cm) at breast height, measured at 1.4m above the ground.
Condition – Condition of tree considering trunk integrity (TI), crown structure (CS) and crown vigor (CV). Condition ratings include poor (P), fair (F), and good (G).
Crown Dieback – Percentage of dead branches within the crown.
Dripline – Crown radius (m).
Comments – Any other relevant tree condition information.

The dripline distance of a tree was primarily used in the preservation planning analysis to determine the tree's preservation potential. Where development is proposed within a tree's dripline, there is the potential to damage tree roots and tree removal may be required. The dripline distance was estimated for the trees included in the inventory and rounded to the nearest metre.

Where trees occurred in groups and their individual locations could not be established, they were inventoried as polygons using a 100% tally analysis by species, size class, and

quality. Three polygons were included in the inventory and identified as Polygons P-1 – P-3.

Trees within the polygon were assessed utilizing the following parameters:

Species: Common and botanical names provided in the inventory table.
Size Class (DBH): 10cm – 19.5cm, 20cm – 30cm, 30.5cm – 40cm, 40.5cm – 50cm, and 50.5cm and above.
Quality Class: Acceptable Growing Stock (AGS), Unacceptable Growing Stock (UGS).

Trees classified as AGS are trees with no major defects in the bole and a relatively good crown structure and vigour. Trees classified as UGS are trees with a major defect in the bole and / or those exhibiting a relatively poor crown structure or vigour.

Refer to Figure 1 for the tree and polygon locations and Table 1 and Table 2 for the results of the tree inventory. See Appendix A for photographs of the trees and polygons.

Existing Site Conditions

The subject property is occupied by a one-and-a-half-storey dwelling, two garages, and outdoor amenity areas. One driveway provides access to Garner Road. A woodlot and wetland are situated within the west portion of the subject property. Refer to Figure 1 for the existing site conditions.

Individual Tree Resources

The inventory documented a total of 25 trees and three polygons on and within six metres of the subject property with the potential to be impacted by the proposed works.

Tree resources were comprised of Manitoba Maple (*Acer negundo*), Poplar species (*Populus sp.*), Red Oak (*Quercus rubra*), Silver Maple (*Acer saccharinum*), Swamp White Oak (*Quercus bicolor*), White Ash (*Fraxinus americana*), White Elm (*Ulmus americana*), and White Spruce (*Picea glauca*).

Refer to Table 1 and Table 2 for the full tree inventory, Figure 1 for the location of trees and polygons reported in the tree inventory, and Appendix A for photographs of the trees and polygons.

Proposed Development

The proposed development includes the demolition of the existing dwelling and garages, and the construction of three blocks of stacked townhomes, internal laneways, surface parking areas, and outdoor amenity space. One vehicular access is proposed to provide access to Garner Road.

Refer to Figure 1 for the proposed development.

Discussion

The following sections provide a discussion and analysis of tree impacts and tree preservation relative to the proposed development and existing conditions.

Development Impacts / Tree Removal

The removal of 16 trees and three polygons will be required to accommodate the proposed development. The required tree and polygon removals include Trees 813 – 828 and Polygons P-1 – P-3. The trees and polygons identified for removal directly either conflict directly with the proposed development or the level of encroachment into their driplines resulting from the proposed work would be at an intolerable level such that we would not expect the trees to overcome the injury.

Polygon P-2 is located partially on a neighbouring property and as such, written permission from the respective neighbouring property owner will be required prior to the removal of this polygon. Trees 814, 817, and 818 are located partially within the Garner Road right-of-way and as such, permission from the City of Niagara Falls will be required prior to the removal of these trees. All other trees and polygons identified for removal are located fully within the boundaries of the subject property.

Refer to Figure 1 for the locations of the required tree and polygon removals.

Tree Preservation

The preservation of the remaining nine trees will be possible with the use of appropriate tree protection measures as indicated on Figure 1. The trees designated for preservation include Trees A – I. Tree protection measures must be implemented prior to the commencement of the proposed works to ensure tree resources designated for preservation are not impacted.

Tree preservation fencing has been prescribed at the driplines of the trees identified for preservation, where possible. Although the entire driplines cannot be respected for Trees B and D, these trees are afforded minimum tree protection zones (mTPZs) that are consistent with standards utilized by surrounding municipalities.

The following mTPZs are based on the trunk diameter of the tree, as follows:

DBH	Minimum Tree Protection Zone (from edge of stem)
<10cm	1.2m
10cm – 29cm	1.8m
30cm – 40cm	2.4m
41cm – 50cm	3.0m
51cm – 60cm	3.6m
61cm – 70cm	4.2m
71cm – 80cm	4.8m
81cm – 90cm	5.4m
91cm – 100cm	6.0m
101cm – 110cm	6.6m
111cm – 120cm	7.2m
121cm – 130cm	7.8m
131cm – 140cm	8.4m

Tree B can be provided with at least 3.0m of protection and Tree D can be provided with at least 1.8m of protection. This level of protection is expected to be sufficient in protecting these trees throughout the proposed works.

Refer to Figure 1 for the location of the prescribed tree preservation fencing and the general Tree Protection Plan Notes.

Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Madan Arianna Developments Inc. to complete a Tree Inventory and Preservation Plan as part of a development application for the property located at 7525 Garner Road in the City of Niagara Falls, Ontario. A tree inventory was conducted and reviewed in the context of the proposed site plan.

The findings of the study indicate a total of 25 trees and three polygons on and within six metres of the subject property with the potential to be impacted by the proposed works. The removal of 16 trees and three polygons will be required to accommodate the proposed development. The remaining nine trees can be saved provided appropriate tree protection measures are installed prior to the development.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for the location of required tree preservation fencing and general Tree Protection Plan Notes.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.

- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.

- Branches and roots that extend beyond prescribed tree protection zones that require pruning must be pruned by a qualified Arborist or other tree professional. All pruning of tree roots and branches must be in accordance with Good Arboricultural Standards.

- Site visits pre, during, and post construction are recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

Respectfully Submitted,

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Limitations of Assessment

Only the tree(s) identified in this report were included in the inventory. The assessment of the trees presented in this report has been made using accepted arboricultural techniques. These may include a visual examination taken from the ground of all the above-ground parts of the tree for structural defects, scars, external indications of decay such as fungal fruiting bodies, evidence of attack by insects, discoloured foliage, the condition of any visible root structures, the degree of lean (if any), the general condition of the trees and the identification of potentially hazardous trees or recommendations for removal (if applicable). Where trees could not be directly accessed (i.e. due to obstructions, and/or on neighbouring properties), trees were assessed as accurately as possible from nearby vantage points.

Locations of trees provided in the report are determined as accurately as possible based on the best information available. If official survey information is not provided, tree location in the report may not be exact. In this case, if trees occur on or near property boundaries, an official site survey may be required to determine ownership utilizing specialized survey protocol to gain precise location.

Furthermore, recommendations made in this report are based on the site plans that have been provided at the time of reporting. These recommendations may no longer be applicable should changes be made to the site plan and/or grading, servicing, or landscaping plans following report submission.

Notwithstanding the recommendations and conclusions made in this report, it must be recognized that trees are living organisms, and their health and vigor constantly change over time. They are not immune to changes in site conditions or seasonal variations in the weather conditions. Any tree will fail if the forces applied to the tree exceed the strength of the tree or its parts.

Although every effort has been made to ensure that this assessment is reasonably accurate, the trees should be re-assessed periodically. The assessment presented in this report is valid at the time of inspection.

Table 1. Tree Inventory

Location: 7525 Garner Road, Niagara Falls Date: 24 April 2024 Surveyors: KNH

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	Comments	Ownership	Action
813	Swamp White Oak	*Quercus bicolor*	77	F	F	F		10	Asymmetrical crown (M), pruning wounds (M), lean (L), epicormic branching (L)	Subject	Remove
814	Swamp White Oak	*Quercus bicolor*	37.5	F	PF	PF		3	Pruning wounds (H), asymmetrical crown (M), poor form (M), epicormic branching (M)	Shared (Subject / City)	Remove
815	Swamp White Oak	*Quercus bicolor*	67	FG	PF	PF	40	7	Pruning wounds (L), epicormic branching (M)	Subject	Remove
816	Swamp White Oak	*Quercus bicolor*	59.5	F	PF	PF	40	7	Pruning wounds (M), asymmetrical crown (M), epicormic branching (M)	Subject	Remove
817	Red Oak	*Quercus rubra*	~50, 42	F	PF	PF		5	V-union at 1m with included bark, epicormic branching (H), pruning wounds (L), stems fused from union to 2m	Shared (Subject / City)	Remove
818	Swamp White Oak	*Quercus bicolor*	38	D	D	D	100	-		Shared (Subject / City)	Remove
819	Silver Maple	*Acer saccharinum*	61	G	FG	F	10	7		Subject	Remove
820	Silver Maple	*Acer saccharinum*	52.5	G	F	F		7	Broken branches (L), asymmetrical crown (L)	Subject	Remove
821	Silver Maple	*Acer saccharinum*	64.5	PF	F	F		8	Bow (M), cavities (L), epicormic branching (L), poor branch unions	Subject	Remove
822	Silver Maple	*Acer saccharinum*	68.5	FG	F	F		7	Asymmetrical crown (M), epicormic branching (L), poor branch unions	Subject	Remove
823	Silver Maple	*Acer saccharinum*	44	F	F	F		7	Lean (L), epicormic branching (M), asymmetrical crown (L), bow (L)	Subject	Remove
824	Silver Maple	*Acer saccharinum*	34.5	F	PF	F	20	6	Lean (L), cavities (L), broken branches (M), epicormic branching (L)	Subject	Remove
825	Silver Maple	*Acer saccharinum*	43, 39	PF	PF	PF	20	7	Union at base, lean (M), cavities (L), epicormic branching (H), crook (M)	Subject	Remove
826	White Ash	*Fraxinus pennsylvanica*	11	F	G	FG		2	Bow (L), Emerald Ash Borer (L)	Subject	Remove
827	White Elm	*Ulmus americana*	27	F	F	F		4	V-union at 2m with included bark, epicormic branching (M)	Subject	Remove
828	White Spruce	*Picea glauca*	33	FG	G	FG		3	Lean (L)	Subject	Remove
A	Silver Maple	*Acer saccharinum*	~26, 24, 22	F	F	F		5	V-union at 0.5m and 1m with included bark, lean (L), epicormic branching (L)	Neighbour	Preserve
B	Silver Maple	*Acer saccharinum*	~50	F	F	F		5	V-union at 1m with included bark, asymmetrical crown (M)	Neighbour	Preserve
C	Silver Maple	*Acer saccharinum*	~30	G	G	FG		4		Neighbour	Preserve
D	Silver Maple	*Acer saccharinum*	~14, 12, 12	F	PF	PF	40	4	V-union at base and 0.5m with included bark, vine competition (L), broken branches (L)	Neighbour	Preserve
E	Silver Maple	*Acer saccharinum*	~26	F	FG	FG		4	V-union in crown with included bark	Neighbour	Preserve
F	Silver Maple	*Acer saccharinum*	~26, 12	PF	P	PF	40	4	V-union at base with included bark, spiralling stems, poor form (M), poor branch unions	Neighbour	Preserve
G	Red Oak	*Quercus rubra*	~36	G	P	PF	40	5	Broken branches (M)	Neighbour	Preserve
H	Silver Maple	*Acer saccharinum*	~42	FG	FG	FG		6	Bow (L), epicormic branching (L)	Neighbour	Preserve
I	White Ash	*Fraxinus pennsylvanica*	~18, 16	D	D	D	100	-	V-union at 0.2m with included bark, Emerald Ash Borer (H)	Neighbour	Preserve
P-1	See Table 2									Subject	Remove

P-2	See Table 2	Shared (Subject / Neighbour)	Remove
P-3	See Table 2	Subject	Remove

Codes		
DBH	Diameter at Breast Height	(cm)
TI	Trunk Integrity	(G, F, P)
CS	Crown Structure	(G, F, P)
CV	Crown Vigor	(G, F, P)
CDB	Crown Dieback	%
DL	Dripline	(m)
Ownership	Ownership of Tree	(Subject, City, Neighbour)
P = poor, F = fair, G = good, ~ = estimate (L) = light, (M) = moderate, (H) = heavy		

Table 2. Stand Tally Analysis for Polygons

Polygon P-1

Tree Size Class →	10cm - 19.5cm		20cm - 30cm		30.5cm - 40cm		40.5cm - 50cm		50.5cm +		Total All Sizes	
Species	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**
White Elm (*Ulmus americana*)	1	0	0	0	0	0	0	0	0	0	1	0
Poplar species (*Populus sp.*)	0	1	2	0	3	0	1	0	0	0	6	1
Silver Maple (*Acer saccharinum*)	2	0	0	0	0	0	0	0	0	0	2	0
White Ash (*Fraxinus americana*)	0	1	0	0	0	0	0	0	0	0	0	1
Total Number of Trees	**3**	**2**	**2**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**9**	**2**

Polygon P-2

Tree Size Class →	10cm - 19.5cm		20cm - 30cm		30.5cm - 40cm		40.5cm - 50cm		50.5cm +		Total All Sizes	
Species	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**
White Elm (*Ulmus americana*)	0	1	0	0	1	0	0	0	0	0	1	1
White Ash (*Fraxinus americana*)	0	6	0	0	0	0	0	0	0	0	0	6
Silver Maple (*Acer saccharinum*)	2	1	2	2	0	0	0	0	0	0	4	3
Total Number of Trees	**2**	**8**	**2**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**10**

Polygon P-3

Tree Size Class →	10cm - 19.5cm		20cm - 30cm		30.5cm - 40cm		40.5cm - 50cm		50.5cm +		Total All Sizes	
Species	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**	**AGS**	**UGS**
White Ash (*Fraxinus americana*)	0	1	0	0	0	0	0	0	0	0	0	1
Poplar species (Populus *sp.*)	1	0	0	0	0	0	0	0	0	0	1	0
Manitoba Maple (*Acer negundo*)	0	1	0	0	0	0	0	0	0	0	0	1
Silver Maple (*Acer saccharinum*)	1	0	0	0	0	0	0	0	0	0	1	0
Total Number of Trees	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**

Appendix A. Site Photographs


Image 1. Tree 813


Image 2. Trees 814 (left) and 815 (right)


Image 3. Trees 816 (left) and 817 (right)


Image 4. Tree 818


Image 5. Trees 819 (right) and 820 (left)


Image 6. Tree 821


Image 7. From left to right, Trees 822 – 825


Image 8. Trees 826 (left) and 827 (right)


Image 9. Tree 828


Image 10. Tree A

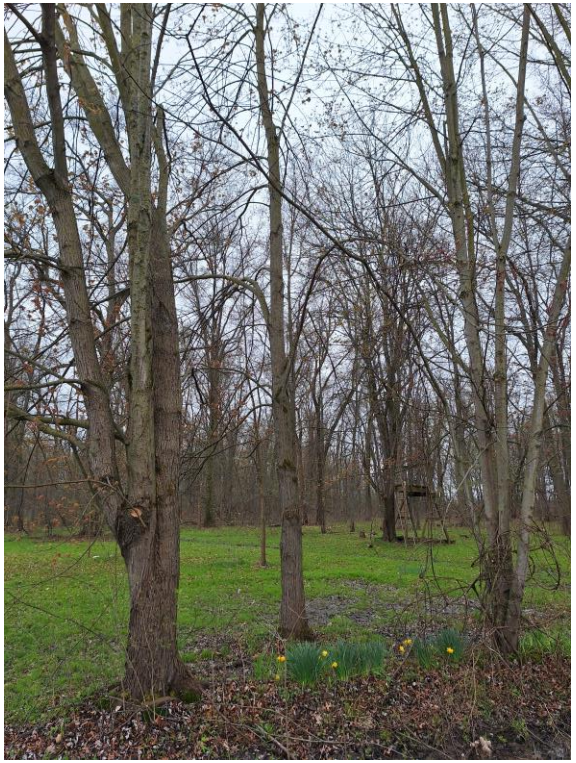
Image 11. From left to right, Trees B – D


Image 12. From left to right, Trees E – G

Image 13. Trees H (left) and I (right)

Image 14. Polygon P-1


Image 15. Polygon P-2


Image 16. Polygon P-3