

MEMORANDUM

To: Stream Shen, File Lead, Planner II
City of Ottawa

From: Yun Liu

Date: July 30, 2019

Subject: Minto Kanata North
Street Tree Planting Assessment

Project No: 18-142

This memo provides an assessment of the potential for street tree planting in the Minto Kanata North in accordance with the City of Ottawa's *Tree Planting in Sensitive Marine Clay Soils – 2017 Guidelines*.

This memo addresses the following six conditions as outlined in the Guidelines:

1. The modified plasticity index of the soil between the underside of footing (USF) and a depth of 3.5m generally does not exceed 40%. This corresponds to soils with low/medium potential for soil volume change. Clay soils that exceed the 40% plasticity index are considered to have high potential for soil volume change. For these worst-case soils, the setbacks and tree planting restrictions remain unchanged from the 2005 Clay Soils Policy (tree setback must equal the mature height of the tree – i.e. 7.5m setback for small trees).

We have reviewed the geotechnical investigation provided by Paterson Group dated May 13, 2019 (specifically Section 6.8 and Dwg. PG4554-4). Two areas that have been identified on the colour coded drawing are areas of high plasticity silty clay (area 1) and low to medium plasticity silty clay (area 2). A root barrier has been proposed for all houses within area 1. We concur with Paterson's recommendation that a 4.5m tree-to-foundation setback is required in all areas as per the Guidelines.

The chart below demonstrates the tree-to-foundation setback based on the right-of-way (ROW):

ROW cross section	Front yard Setback per ROW Cross section (m)	Tree-to-Foundation distance (m)	Complies with Low-to-Mod. Plasticity of 4.5m distance
16.5m w. sidewalk in area 1	5	5.6	Yes
16.5m w. sidewalk in area 2	3.9	4.5	Yes
24.0m w. sidewalk	3.9	9.45 and 10.1	Yes
24.0m w. multi-use pathway	3.9	8.45	Yes
26.0m w. sidewalk	3.9	9.15	Yes

In all cases, the front yard setbacks above comply with the City's required tree-to-foundation setback in low-to-moderate clay soil areas. Small (up to 7.5m) and medium (7.5-15m) trees will be able to be planted in these areas.

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2. The USF is 2.1m or greater below the lowest finished grade. Note: this footing level must be satisfied for footings within 10m of the tree, as measured from the centre of the tree trunk, and verified by means of the Grading Plan as indicated in the Procedural Changes below.

This condition will be addressed by other consultants.

3. A small size tree must be provided with a minimum of 25m³ of available soil volume, as determined by a Landscape Architect. A medium size tree must be provided with a minimum of 30m³ of available soil volume, as determined by a Landscape Architect. The developer will ensure the soil is generally uncompacted when backfilling in street tree planting locations.

NAK has prepared a separate document with diagrams illustrating all scenarios. We summarize soil volume calculations, based on the minimum lot frontages, for both singles and towns with both paired and non-paired driveways. Please refer to diagrams for more detail.

4. The tree species must be small to medium size, as confirmed by a Landscape Architect in the Landscape Plan.

We have listed the proposed boulevard tree below for reference:

Small sized street trees:

Amur Maple	Acer ginnala
Serviceberry	Amelanchier canadensis
Eastern Redbud	Cercis canadensis
Thornless Hawthorn	Crataegus crusgalli var. inermis
Snowdrift Crabapple	Malus 'Snowdrift'

Medium sized street trees:

Common Horsechestnut	Aesculus hippocastanum
Common Hackberry	Celtis occidentalis
Amur Maackia	Maackia amurensis
Turkish Hazel	Corylus colurna
Oakleaf Mountainash	Sorbus x hybrida
Japanese Tree Lilac	Syringa reticulata
Mongolian Linden	Tilia mongolica

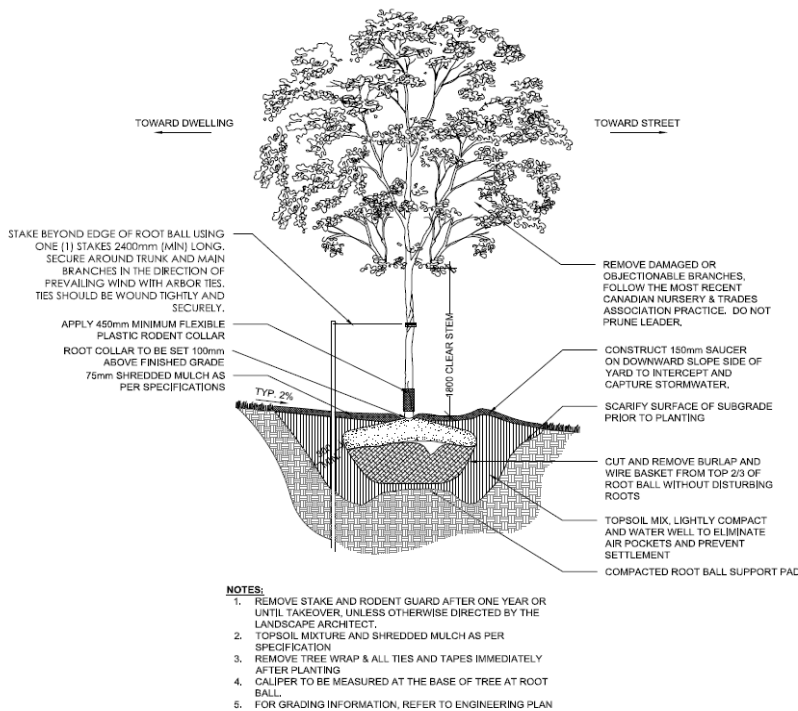
5. The foundation walls are to be reinforced at least nominally (minimum of two upper and two lower 15M bars in the foundation wall) to provide ductility as described in the Geotechnical Report.

This condition will be addressed by other consultants.

6. Grading surrounding the tree must promote draining to the tree root zone (in such a manner as not to be detrimental to the tree), as noted on the subdivision Grading Plan.

We have attached our typical detail for surface drainage toward the tree root zone for reference:

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Our current design proposal conforms to the City Guidelines in terms of the tree planting in low-to-medium clay soil areas. It is anticipated that the municipal requirements for street tree planting will be met in this community. The available soil volumes do not present any constraints to tree planting. It is recommended that driveways be paired where possible to permit canopy tree planting.

I trust this is satisfactory. Please do not hesitate to contact the undersigned should you have any questions or require any additional information.

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Senior Project Manager

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