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Tree Preservation Plan

Prepared for Vernon Andres,
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Regarding 944 Heywood Ave, Victoria BC.

Prepared by Conan O'Dell. ISA Certified

Arborist PN-7854-A

Qualified Tree Risk Assessor

ATTACHMENT E

Received
City of Victoria

MAY 07 2018

Planning & Development Department
Development Services Division

Site visit: December 5, 2017 8:30am.

Site conditions: Residential property.

Weather at time of visit: Sunny, clear visibility.

Executive Summary: The proposed development at 944 Heywood Ave. allows for the retention of most of the trees on site, but some are to be removed. One of the trees to be removed is protected under City of Victoria's tree preservation bylaw. As such it is to be replaced by 2 medium canopy trees to be determined at a later date. Another tree (European Ash) is to be removed as it is highly unlikely it will survive damage from construction, and will be replaced by 2-3 medium canopy trees to be determined at a later date. If mitigation measures are followed, negative impact to the retained trees is likely to be minimal.

Scope of report: This report has been commissioned to outline the tree protection strategy for the upcoming construction on the site at 944 Heywood. This report covers the retention and/or/ removal of trees on the site as well as mitigation measures during and after the construction.

Methodology: All trees were measured with diameter tape on site. The crown spread was measured using City of Victoria GIS maps. The root zone diameters have been estimated using the GIS map crown spread measurements, using the dripline as the root zone. The presence of non-porous hardscape (road) and the existing house was taken into consideration as inhibitors of root spread. Manual exploratory excavation was done using hand tools to determine the extent of root infiltration into the construction areas.

Site and Project Description: The site is currently a single house on the front portion of the lot. The project intends to divide the lot, demolish the house and build two separate houses. A sidewalk is to be installed along Pendergast St. and driveways will be installed from Pendergast St. as well.

Mitigation measures: Tree protection zones should be established in the critical root zones of any trees to be retained. This includes the two hawthorne at the north-east corner, the maple on the south line and the magnolia on the west boulevard. The protection zones will be no less than 2m radius where possible from the trunks of affected trees. These should follow the guidelines set forth in the City of Victoria Tree Protection Bylaw. The critical root zones of the trees shall be surrounded with fencing 1.2m high clearly marked with "Protected Root Zone-No Entry".



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If any excavation is to be done within the critical root zones of retained trees, the project arborist shall be on site to monitor for critical root damage. Any roots extending into the excavation areas shall be pruned prior to excavation to avoid breakage. If pruned roots will be exposed for longer than 8 hours they should be covered with moistened burlap to mitigate moisture loss. If any damage or root pruning occurs during the project the trees should be re-assessed by a qualified tree risk assessor within one year to determine scope of damage and level of recovery.

Recommendations: It is recommended that the mitigation measures set forth in this report be followed. Regarding the proposed sidewalk placement along Pendergast St., the placement of the sidewalk will necessitate the removal of all the laburnum, hawthorne and holly on the south property line. It will also require the removal of a large low limb on the maple (tree #9). Moving the sidewalk to the edge of the street will prevent the large limb removal as well as allow for the retention of some of the laburnum/ hawthorne. The sidewalk should be constructed at existing grade with minimal excavation to prevent damage to the roots of tree #9. Any excavation within the root zone shall be done under the supervision of the project arborist.

The root excavation on tree #9 revealed that the building footprint is unlikely to affect the critical roots. The additional root excavation for the driveway revealed few roots extending into the footprint of the proposed driveway, and based on the smaller diameter of these roots in relation to the trunk size, pruning these roots back from the footprint is unlikely to negatively affect the health and stability of the tree. It is recommended that the over-excavation be reduced to 0.5m to reduce impact to tree #9. The exploratory excavation shows that no special excavation is needed (ie. Air spade, hydro-vac) and that excavation will be done by standard excavator. The contractor and project arborist will be onsite to supervise all excavation in the root zone.

For the construction of the proposed walkway, the area should be excavated with low impact methods (air spade, hydro vac or manual excavation) and if it is determined that standard construction will negatively affect root viability, an appropriate subbase of gap graded stone structural soil should be applied to allow for continued root viability.

The utilities (water, sewer) will be run along the North property line and will not negatively affect the critical root zones of any trees. The services (hydro, shaw, telus) will be overhead and as such will not impact critical root zones of retained trees. The exact location of the overhead services is unknown as of yet. If the services are run along the South side of the property, some canopy pruning of tree #9 may be required to avoid conflict. This pruning would not negatively affect the health and viability of the tree. The multi-stemmed Douglas maple (tree #11) on the east side of the property should be removed as the proposed building will be located over 50% of the root zone and be within 1m of the trunk. The 64cmDBH (52/19cm multi stemmed) European ash (tree #10) should be removed. The exploratory excavation revealed several roots infiltrating the proposed footprint of the new building. This included one 13cm diameter root extending directly into the



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Building footprint. Severing a root this size and in this close proximity (2.7m) to the stem will destabilize the tree and likely cause significant stress resulting in premature mortality.

Role of the Project Arborist: The project arborist will be on site to supervise the erection of tree protection fencing, as well as to supervise excavation in the root zone areas not contained within the protection zones. The arborist will also be on site for exploratory excavation. The arborist will also be available to advise on courses of action if critical roots are damaged during construction.

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Appendices:

Page 1, 2: Tree inventory.

Pages 2, 3: Photos taken
during assessment. Pages

4, 5, 6: Photos taken during
exploratory excavation

Attached PDF: Site plan

Attached PDF: Labelled site plan to include tree locations and numbers as well as replacement tree
locations and proposed utilities.



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Species and Number	DBH	Health	Structure	Crown spread	Root Zone Spread	Protected	Retained	Public or private	Relative tolerance
Magnolia (Magnolia cuminata)	7cm	good	good	2m	<1m	no	yes	public	fair
)Laburnum(Laburnum anagyroides)	7/7/7cm	good	good	2m	3m	no	no	unknown	good
)Laburnum(Laburnum anagyroides)	7/6cm	good	good	2m	3m	no	no	unknown	good
)Laburnum(Laburnum anagyroides)	9cm	good	good	2m	3m	no	no	unknown	good
)Holly (Ilex aquifolium)	13/13cm	good	Fair (topped and hedged)	2m	2m	no	no	unknown	good
)Laburnum(Laburnum anagyroides)	8/6cm	good	good	2m	3m	no	no	unknown	good
)Hawthorne Crataegus monogyna)	25cm	good	fair	4m	4m	no	no	unknown	good
)Laburnum(Laburnum anagyroides)	13/18cm	good	good	3m	3m	no	no	unknown	good
)Douglas Maple Acer glabrum douglasii)	72cm	good	good	17.1m	10.5m	no	yes	private	fair
0)European Ash Fraxinus excelsior)	52/19cm	good	fair	13m	13m	no	no	private	fair



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1)Douglas Acer glabrum ouglasii)	Maple	19/34/34/34/13/43c	good	fair	14.34	14m	yes	no	private	fair
2)Hawthorne Crataegus monogyna)		27cm	good	good	5m	5m	no	yes	private	good
3)Hawthorne Crataegus monogyna)		33cm	good	good	4.5m	4.5m	no	yes	private	good



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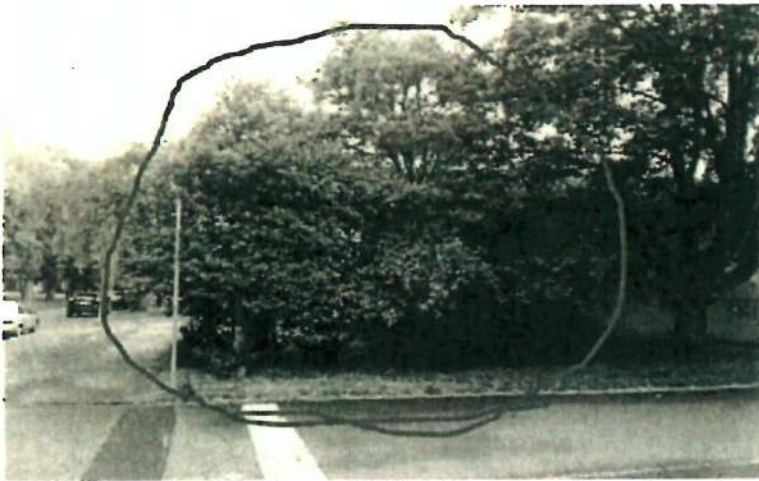


Photo I showing cluster of holly, laburnum and hawthorne (trees 2,3,4,5,6,7,8) at the south west corner of the property

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Photo 2 showing South side of property showing tree #9) 71.5cmDBH Douglas maple

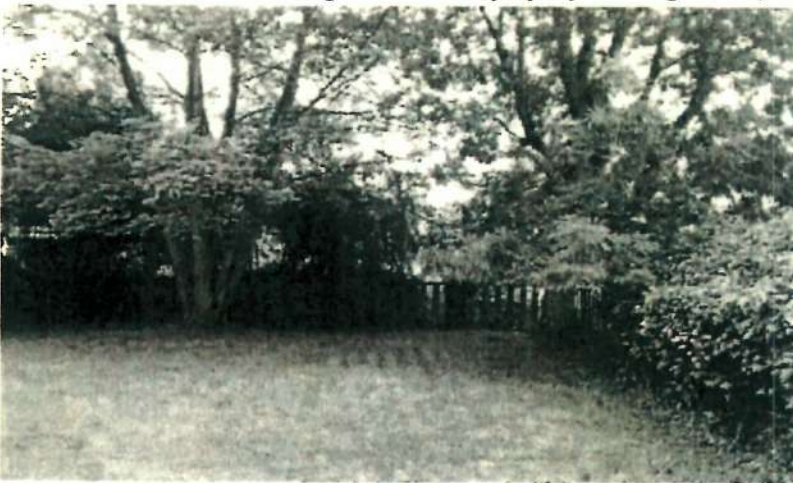


Photo 3. South east corner of yard showing multi-stemmed tree #11) Douglas Maple on left and tree #10) European ash on right.

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Photo 4. Largest root from maple found at edge of existing building.

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Photo 5. Showing exposed roots from maple hitting perimeter drain and foundation

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Photo 5. Large root (13cm diameter) from the ash extends into proposed footprint.



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Photo 6. Exploratory excavation along proposed footprint. Roots are from ash.

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Photo 7.) Exploratory trench along proposed driveway footprint.

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