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ISA TREE RISK ASSESSMENT QUALIFIED
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gardens inspired by nature

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To:	Kent Smutny, VEER Architecture for John Khaira, REV Properties Inc.
Reference:	Tree Inventory Report/Response to City Comments Tree Risk Assessment
Date:	October 11, 2023
Site Address:	3803 NE 155th St, Lake Forest Park
Parcel:	6744701588

Dear Mr. Smutny,

You contacted me on behalf of your client and subsequently coordinated my services to respond to comments from a city planner regarding a development proposal for the property referenced above. I received a copy of those comments and a site plan, dated August 9, 2022. I visited the site on Tuesday. October 3, 2023.

My assignment includes an updated tree inventory, an annotated site plan, recommended tree protection fencing placement, tree protection measures, and a tree risk assessment on Tree #4, an exceptional Western red cedar (*Thuja plicata*). The tree inventory contained in this report indicates species, DBH, dripline, critical root zone (CRZ as defined by Lake Forest Park municipal code), limits of disturbance based on best management practices from the ISA (International Society of Arboriculture), ratings for health and structure, and notes on any visible defects or concerns.

Summary:

I visually inspected and measured or estimated measurements on twelve (12) regulated trees, three (3) of them located offsite on the parcel to the east. One (1) of the trees is considered exceptional, as defined by LFPMC 16.14.030. That tree — #4, a 45-inch Western red cedar — is a moderate risk tree based on existing decay, plus adjacent proposed construction disturbance and future homes as potential targets.

All of the trees are listed in the table beginning on page 11.

Total significant trees on the parcel	8
Total exceptional trees on the parcel	1
Total offsite significant trees which may be impacted by clearing	3
Total number of regulated trees	12

Contents

Introduction

I visually inspected the trees and identified a total of twelve (12) regulated trees on or adjacent to the property, which may be impacted by construction activities. Nine (9) trees are located on the parcel. Three (3) are located just behind the existing home on the parcel to the east. The trees are mix of native conifers, native Big-leaf maples, fruiting and ornamental deciduous species. There is one (1) multi-stem English laurel located along NE 155th Street. Access to the two (2) Big-leaf maples onsite and three (3) unknown deciduous trees offsite, was blocked by thick brambles and Japanese knotweed. Estimated measurements are indicated for these trees.

All the trees are listed in the inventory table beginning on page 11.

Limitations and Use of this Report

This tree report establishes existing conditions of the trees on the property, utilizing the most practical means available. This report is based solely on what is readily visible and observable, without any invasive means, except where clearly indicated for Tree #4. Ratings for health and structure, as well as any recommendations, are valid only through project development and construction, and within a reasonable amount of time.

There are several factors that can affect a tree's condition, which may be pre-existing and indeterminable with only a visual analysis. No attempt was made to establish the presence of hidden or concealed conditions (except on Tree #4) which may contribute to the risk or failure potential of trees on or adjacent to the site. Hidden or concealed conditions may include root and stem (trunk) rot, internal cracks, structural defects or construction damage to roots, which may be hidden beneath the soil. In addition, construction and post-construction circumstances can cause a relatively rapid deterioration of a tree's condition.

Due to thick brambles and Japanese knotweed (as already noted), two (2) onsite Big-leaf maples were inaccessible, along with three (3) offsite trees to the east, and no permission to enter the adjoining property was provided. Any measurements estimated are indicated as such.

The offsite Alders (Alnus rubra) located at the back of the neighboring property, downhill and behind the existing home, are well outside any proposed disturbance and are not included in this report.

Tree Inspection:

This inspection identifies both the health and the structure of each tree. Tree health assesses disease, insect infestation and old age. Tree structure is the manner in which a tree is constructed, along with observable defects, which can indicate if a tree is subject to failure. The results of this inspection are based on what was visible at the time of my site visit.

The inventory table beginning on page 11 reflects the results of my inspection, including the following for each tree:

- Number – as shown on the annotated site plan.
- Species – both common and Latin names.
- DBH – stem diameter measured in inches, 4.5 feet from the ground, unless otherwise indicated.
- Dripline – outermost branch extension from the trunk, measured as radius in feet from trunk center.
- Category – significant or exceptional, per LFPMC.
- Ratings – from 1 to 3 (where '1' indicates no visible defects in structure or health; '2' indicates minor to moderate problems that may require action; '3' indicates significant problems or defects and tree removal is recommended).

- Visible defects – Visible structural defects or diseases:

  Bacterial canker – disease cankers are established on trunk/branches.

Decay – process of wood degradation by microorganisms resulting in weak and defective structure.

Fungal leaf spot – foliage is diseased with fungus, common in cherries in the Pacific Northwest.

Heartwood decay – often caused by fungal infection with interior of tree decayed.

Lean – angle of trunk from vertical.

Limited soil volume – rootplate growth is limited by nearby grade changes, structures or concrete barriers.

Low foliage vigor – low foliage density may indicate stress, or early infection/declining health.

Multiple leaders – tree has multiple stem attachments, which may lead to tree failure and require maintenance or monitoring over time.

Sapwood decay – decay present in bark and outer wood (xylem).

Topped – the tree is previously topped and has poor structure/and or stem decay.

Lake Forest Park Code Definitions: 16.14.030

"Significant tree" means a tree six inches or greater in diameter (DBH) or a required replacement tree of any size. Dead trees shall not be considered significant trees

"Exceptional tree" means a viable tree, which because of its unique combination of size and species, age, location, and health is worthy of long-term retention, as determined by the city's qualified arborist. To be considered exceptional, a tree must meet the following criteria:

1. The tree must be included in and have a diameter at breast height (DBH) that is equal to or greater than the threshold diameters listed in Table 1;

2. The tree shall exhibit healthful vigor for its age and species;

3. The tree shall not be considered a significant risk in regard to existing utilities and structures as evaluated per the tree risk assessment defined in LFPMC 16.14.080(A)(1);

4. The tree shall have no visual structural defects that cannot be mitigated by one or more measures outlined in the International Society of Arboriculture Best Management Practices; and

5. If retained under current tree growth conditions, the tree can be expected to remain viable with reasonable and prudent management and care.

"Critical root zone" means the International Society of Arboriculture (ISA) definition of CRZ as an area equal to one-foot radius from the base of the tree's trunk for each one inch of the tree's diameter at 4.5 feet above grade (referred to as diameter at breast height). Example: A 24-inch diameter tree would have a critical root zone radius (CRZ) of 24 feet. The total protection zone, including trunk, would be 50 feet in diameter. NOTE: This is not the definition of CRZ from ISA, but rather that defined by LFPMC.[1]

"Multi-stemmed tree" means a tree that has one stem at ground level but that splits into two or more stems above ground level. Trees whose stems diverge below ground level are considered separate trees. Where a tree splits into several trunks below typical DBH, the DBH for the tree is the square root of the sum of the DBH for each individual stem squared (example with three stems: DBH = square root of [(stem 1)^2 + (stem 2)^2 + (stem 3)^2]).

Tree Risk Assessment Terms

Risk: The combination of the likelihood of an event and the severity of the potential consequences.

Likelihood: The chance of an event occurring. In the context of tree failure, the term may be used to specify: 1) the chance of a tree failure occurring; 2) the chance of impacting a specified target; and 3) the combination of the likelihood of a tree failing and the likelihood of impacting a specific target.

Target: People, property or activities that could be injured, damaged, or disrupted by a tree failure.

Consequence: Outcome of an event.

Failure: Breakage of stem, branch, or roots, or loss of mechanical support in the root system.

Hazard: Situation or condition that is likely to lead to a loss, personal injury, property damage, or disruption of activities; a likely source of harm.

CRZ measurements are provided in the tree inventory table, as well as limits of disturbance (LOD) as defined by ISA best management practices. The LOD is the minimum distance from a tree for any soil or root disturbance, and represents the areas to be protected during construction. LOD assumes impact on only one side of the tree and full protection in the remaining tree protection area. The city arborist makes the final decision on LOD and tree protection areas in LFPMC.

[1] Fite, Smiley, Companion publication to the ANSI A300 Series, Part 5: Managing Trees During Construction. 2016. ISA.

Notes on Tree Protection

I have provided a recommendation for tree protection fencing location to be placed along the limits of clearing as indicated on the annotated site plan. Any clearing activity which crosses inside the inner CRZ (one-half the CRZ) must be completed manually, using hand tools to minimize root disturbance on Tree #9, and offsite Trees #101, #102, and #103. Any ground disturbance by machinery within the tree protection areas of these trees must be monitored and documented by the project arborist.

Tree Risk Assessment
Tree #4 –45-inch Western red cedar

Visible defects in this exceptional Cedar include:

1. Past topping;
2. Limited soil volume;
3. Lean to southeast;
4. Visible decay in sapwood;
5. Compact soils.

Core sampling reveals six (6) to eight (8) inches of sound wood, past the bark, before reaching what I suspect to be central heartwood decay. I relied on the core samples as well as resistance to the increment borer to measure decay.

Under current conditions, the tree receives a low-risk rating due to lack of target and presence of sufficient sound wood. I set limits of disturbance at 22 feet from trunk center, when considering ISA best management practices, species tolerance to construction, health and structure ratings.

When considering proposed construction disturbance, new buildings and people living nearby, the tree receives a moderate risk of failure in a time frame of five (5) years, following construction disturbance.

The city of Lake Forest Park provides decisions on tree viability for exceptional trees per LFPMC Definitions, 16.14.030 (see definitions on page 4-6.).

Tree Risk Assessment – Documentation

Right: Looking north, below the tree. Lean southeast. Neighboring foundation wall on left may restrict root growth. Structure/building limits rain to roots.

Left: Looking at the north side of the trunk. Clear indication of bark and sapwood rot in truck. Sufficient sound wood exists surrounding visible decay. Tree is vulnerable to site disturbance.

Decay at 6"	Sound Wood – Incipient (early) Decay – 6"	Bark 1.5"

Core sample taken 90 degrees away from visible bark and sapwood decay, moving clockwise around tree. The first 1.5 inches indicate bark, followed by 6 inches of sound wood, with some signs of incipient decay (early stages). Heartwood decay is present at 6 inches past the bark. A second sample one foot toward the neighbor's house from point of visible bark decay shows similar results.

RISK CATEGORIZATION — OVERALL RISK = MODERATE
Tree Risk Assessment Forms Provided Separately

Likelihood of failure – Possible
Likelihood of impact – Medium
Failure & Impact – Somewhat likely
Consequences – Significant

Attachment 1: Assumptions and Limiting Conditions

1. A field examination of the site was made on October 3, 2023. My observations and conclusions are as of that date.

2. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, I, the consultant/arborist, can neither guarantee nor be responsible for the accuracy of information provided by others.

3. I am not a qualified land surveyor, and this tree inspection is based on a site plan provided by Kent Smutny of VEER Architecture. Sketches and photographs in this report are not necessarily to scale and should not be construed as an accurate survey. For any tree not on the survey, locations provided in annotation are approximate.

4. I, the consultant/appraiser, shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made.

5. Unless stated other wise: 1) information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and 2) the inspection is limited to visual examination of the subject trees without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied that problems or deficiencies of the subject trees may not arise in the future.

6. Unless required by law otherwise, possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without prior written or verbal consent of the consultant.

7. All trees possess the risk of failure. Trees can fail at any time, with or without obvious defects, and with or without applied stress. Risk management is solely the responsibility of the landowner.

8. Construction activities can impact trees in unpredictable ways. All retained trees, including all right-of-way and off-site trees, should be inspected at the completion of construction, and regularly thereafter as part of ongoing maintenance.

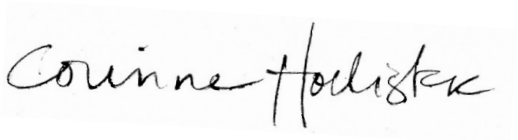
Attachment 2: Certificate of Performance

I, Corinne Hollister, certify that:

- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinion, and conclusions stated herein are my own and are based on current industry standards, scientific procedures and facts.
- My analysis, opinion, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated within the report.
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member in good standing of the International Society of Arboriculture (ISA), and the ISA PNW Chapter, I am an ISA Certified Arborist (#PN-6981A) and am Tree Risk Assessment Qualified. I also am a member of the American Society of Consulting Arborists (ASCA).

Signed,



Corinne Hollister

Corinne Hollister Digitally signed by Corinne Hollister Date: 2023.10.11 15:53:08 -07'00'

Date: October 11, 2023

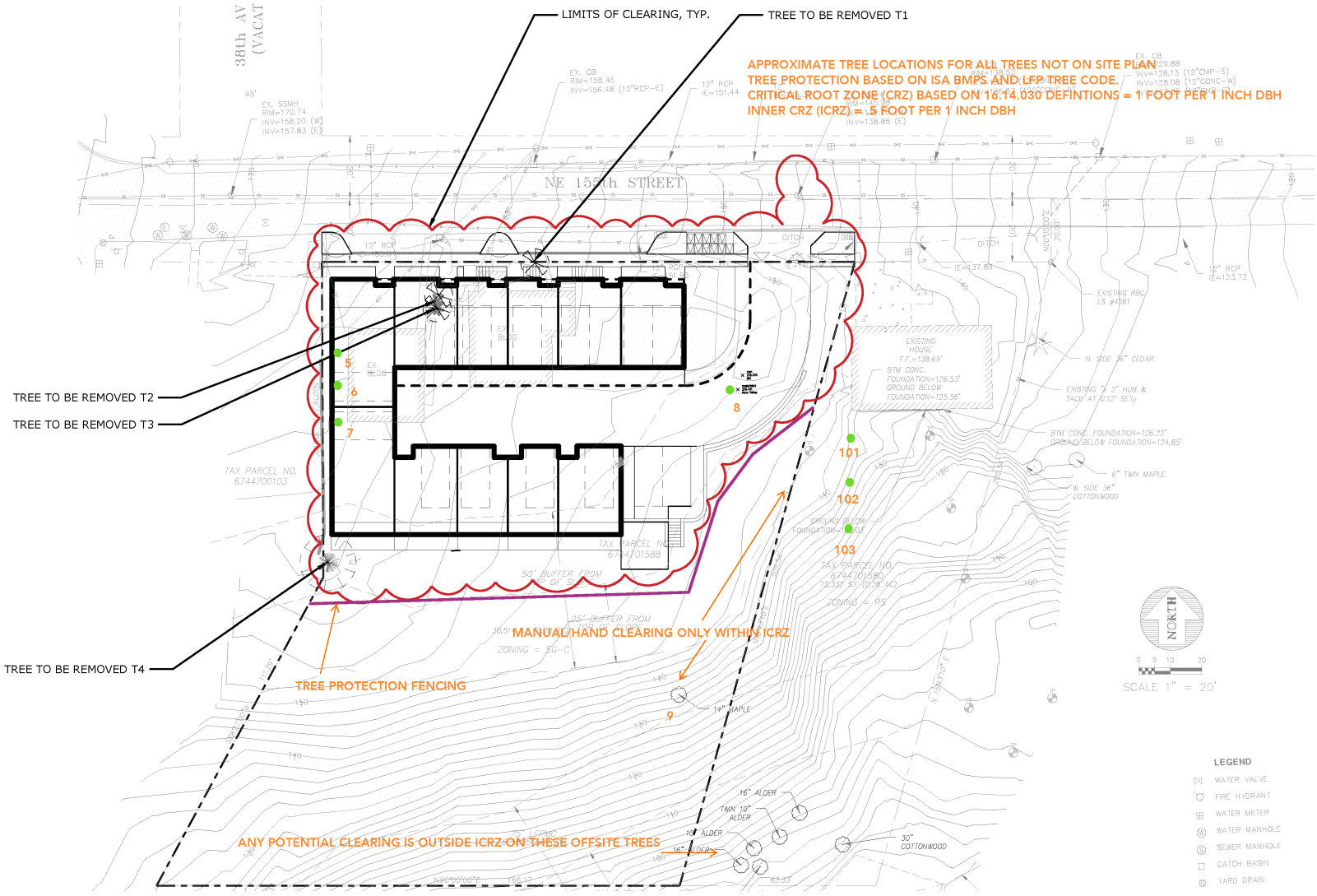
Attachment 3: Tree Inventory Table – See definitions on page 4-5

Tree #	Species	Proposed Action	DBH	Drip line	CRZ	ISA BMPs	Health	Structure	Notes
1	*Prunus laurocerasus* English laurel	Remove	17	15	17	10	2	2	Eleven stems: 5-7 inch diameter. Quadratic mean calculation for DBH. Some visible decay. Very close to existing home. Could be considered a shrub.
2	*Pseudotsuga menziesii* Douglas-fir	Remove	15	18	15	15	2	2	Growing in close proximity to Tree #3. Low foliage vigor. Limited soil volume.
3	*Pseudotsuga menziesii* Douglas-fir	Remove	21	27	21	19	1	2	Growing in close proximity to Tree #2. Limited soil volume.
4	*Thuja plicata* Western red cedar	Remove	45	29	45	22	2	2	Exceptional tree. Topped in past. Sapwood and heartwood decay present. Foundation on neighboring home may limit soil volume. Level 2 Tree Risk Assessment provided. Moderate risk.
5	*Prunus avium* Fruiting cherry	Remove	7	7	7	10	2	2	Fungal leaf spot. Bacterial canker. Soil compacted.
6	*Prunus avium* Fruiting cherry	Remove	7	7	7	10	2	2	See above.
7	*Prunus avium* Fruiting cherry	Remove	7	7	7	10	2	2	See above. Lean to north.
8	*Acer macrophyllum* Big-leaf maple	Remove	11	12	11	12	1	1	Estimated measurements based on visual (in the field).
9	*Acer macrophyllum* Big-leaf maple	Retain	20	25	20	18	NA	NA	Estimated measurements based on site plan/survey and aerial photos. Cannot provide ratings without access.

Offsite Trees Potentially Impacted by Construction									
Tree #	Species	Proposed Action	DBH	Drip line	CRZ	ISA BMPs	Health	Structure	Notes
101	Deciduous Tree	Protect	14	16	14	16	NA	NA	Estimated measurements based on visual and street view photos. No permission to enter. CRZ is outside proposed clearing limits on plans. Any future clearing inside tree protection fencing as indicated shall be done manually/by hand to minimize disturbance. I could not identify species from afar.
102	Deciduous Tree	Protect	14	16	14	16	NA	NA	See above.
103	Deciduous Tree	Protect	14	16	14	16	NA	NA	See above.

*Quadratic mean calculation – standard industry practice, square root of sum of total stem measurements squared.

Attachment 4: Annotated Site Plan



Attachment 6: Photos of Site

Left: Looking east from northwest property corner. Tree #1 is in background at left. Trees #2 and #3 are center, in between the two buildings.

Below: Looking south along west side of building. A row of fruiting cherry trees, three (3) of which are significant.

Looking south/southeast from NE 155th Street. Tree #8 is turning color on the left, Tree #9 is at center.

Offsite Trees #101, #102, and #103 can be seen in the photo below from Google street view, 2019.