



LAYTON TREE CONSULTING, LLC

ARBORIST REPORT/TREE PLAN

4245 90th AVE SE
Mercer Island, WA



Report Prepared by:

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It's all about trees.....

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Tree Summary Table

Tree Plan Map

Assignment

Layton Tree Consulting, LLC was contacted by Akihiro Nakamura, and was asked to compile an Arborist Report for a property on Mercer Island. The subject property is located at 4245 90th AVE SE. My assignment is to prepare a written report on present tree conditions, and to provide appropriate recommendations for the protection of retained trees associated with the new garage addition.

This report encompasses all of the criteria set forth under the City of Mercer Island's tree regulations, particularly Chapter 19.10 Trees, of the Unified Development Code Title 19. A 'Regulated' tree is any tree with a diameter of more than 10-inches or any tree that meets the definition of an 'Exceptional' tree.

Date of Field Examination: October 8, 2020

Description

Three 'regulated' trees were identified and assessed on the subject property. One is located at the front of the property near the northeast corner and two are located in the backyard near the south property line.

A few trees were recently removed from the property under an approved City permit.

Six off-site or neighboring trees were also assessed. Two are located on the neighboring property to the south and four exist near the west property line. There are no neighboring tree issues off of the north property line.

A numbered aluminum tag was attached to the lower trunks of assessed trees. These tag numbers correspond with the numbers on the Tree Summary Table and attached map. The Tree Summary Table provides detailed information for all of the subject trees.

Methodology

Each tree in this report was visited. Tree diameters were measured by tape. The tree heights were measured using a Spiegel Relaskop. Each tree was visually examined for defects and vigor. The tree assessment procedure involves the examination of many factors:

- The crown or canopy of the tree is examined for current vigor/health by examining the foliage for appropriate color and density, the vegetative buds for color and size, and the branches for structural form and annual shoot growth; and the overall presence of limb dieback and/or any disease issues.
- The trunk or main stem of the tree is inspected for decay, which includes cavities, wounds, fruiting bodies of decay (conks or mushrooms), seams, insect pests, bleeding or exudation of sap, callus development, broken or dead tops, structural defects and unnatural leans. Structural defects can include but are not limited to excessive or unnatural leans, crooks, forks with V-shaped crotches, multiple attachments.
- The root collar and exposed surface roots are inspected for the presence of decay, insect damage, as well as if they have been injured or wounded, undermined or exposed, or the original grade has been altered.

Judging Condition

The three condition categories are described as follows:

Good – free of significant structural defects, no disease concerns, minor pest issues, no significant root issues, good structure/form with uniform crown or canopy, foliage of normal color and density, average or normal vigor, will be wind firm if isolated or left as part of a grouping or grove of trees, suitable for its location

Fair – minor to moderate structural defects not expected to contribute to a failure in near future, no disease concerns, moderate pest issues, no significant root issues, asymmetric or unbalanced crown or canopy, average or normal vigor, foliage of normal color, moderate foliage density, will be wind firm if left as part of a grouping or grove of trees, cannot be isolated, suitable for its location

Poor – major structural defects expected to cause fail in near future, disease or significant pest concerns, decline due to old age, significant root issues, asymmetric or unbalanced crown or canopy, sparse or abnormally small foliage, poor vigor, not suitable for its location

Judging Retention Suitability

Not all trees necessarily warrant retention. The three retention suitability categories as described in ANSI A300 Part 5 (Standard Practices for the Management of Trees During Site Planning, Site Development and Construction) are as follows:

Good – trees are in good health condition and structural stability and have the potential for longevity at the site

Fair – trees are in fair health condition and/or have structural defects that can be mitigated with treatment. These trees may require more intense management and monitoring, and may have shorter life-spans than those in the “good” category.

Poor – trees are in poor health condition and have significant defects in structure that cannot be mitigated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess characteristics that are incompatible or undesirable in landscape settings or be unsuited for the intended use of the site.

Observations

Tree #1 is located near the northeast corner. This is a semi-mature Douglas fir. It has developed good structural form. Vigor is good. The crown is somewhat asymmetric to the south. Trees were recently removed on the north side. The lower trunk is sound with no outward indicators of any internal decay issues. Condition is rated ‘good’.

Tree #2 is a semi-mature Western red cedar. It has recently been crown-raised. Vigor is good. Soils and surface roots have been recently disturbed on the north and northeast sides during vegetation removal. The lower trunk is sound with no outward indicators of any internal decay issues. Condition is rated ‘good’. Tree #2 is ‘exceptional’ under City code.

Tree #3 is a semi-mature deodar cedar. Vigor is good. Soils and surface roots have been recently disturbed on the north and northeast sides during vegetation removal. The lower trunk is sound with no outward indicators of any internal decay issues. Condition is rated 'good'.

Neighboring Trees

Trees #101 and #102 are semi-mature Douglas fir, located roughly 16-feet off of the property line on the neighboring property to the south. No concerning defects were observed from the subject property. Both are of good vigor and in 'good' condition.

Tree #103 is a young to semi-mature cluster of Lawson cypress. It has developed typical form for the species. Vigor is good.

Tree #104 is also a young to semi-mature cluster of Lawson cypress. It has been topped at roughly 12-feet above ground. Structure has been compromised. Condition is 'poor'.

Trees #105 and #106 are young to semi-mature Western red cedar. Both are of good vigor. #105 has an old broken top. #106 has a natural lean to the west. Both appear structurally sound.

Soils on the east sides of Trees #103 > #106 have been recently disturbed. See pictures below.

Discussion/Recommendations

The extent of driplines (farthest reaching branches) for the subject trees can be found on the tree summary table at the back of this report. The driplines have been delineated on the attached tree map. The information on the attached map and in this report may be used by the project architect to create the final tree retention plan sheet for City submittal if needed.

No further tree removal is proposed. All of the subject trees will be retained. Tree #1 has been recently exposed or isolated by the removal of trees to the south. This tree should be periodically monitored, particularly after strong wind events. Monitor for changes in lean or ground movement around the base of tree. If any conditions of concern arise, have the tree assessed for risk immediately.

If the existing asphalt driveway is to remain undisturbed adjacent to Tree #1, there should be no impact to the tree. If the driveway is to be replaced, work within the dripline shall be accomplished using hand-labor only. Care shall be taken to preserve any roots that exist underneath the existing pavement. Position a tree protection barrier as shown on the attached map to protect the trunk and soils to the east and west. New pavement placed south of the existing driveway is not expected to have any adverse impacts on the tree.

No work is proposed in the backyard other than landscaping. A significant amount of vegetation was recently removed from backyard of the subject property. The grubbing of vegetation and stumps has disturbed soils and surface roots within the driplines of subject trees. Any further work within the driplines shall be accomplished by hand-labor only. Hand rake soils to establish finish grades. To maintain these trees in the best condition possible, simply finish the landscape within the driplines of

subject trees by placing a 3 to 4-inch layer of organic mulch. Avoid large plantings, the construction of hardscapes and irrigation trenching within the driplines of subject trees. Ensure trees are provided supplemental irrigation during the dry months of June through September.

Neighboring trees #101 and #102 are situated several feet (+/- 16-feet) off of the property line. These will not be impacted by the proposal. Work up to the property line is acceptable. Place the tree protection barrier at the property line to ensure no impacts.

The project arborist shall be on-site to monitor any authorized excavation within the drip-lines of retained and/or impacted trees so necessary precautions can be taken to maintain these in a viable condition. Care shall be taken when working near trees to protect soils and surface roots that likely extend beyond the dripline.

Tree Protection Measures

The following guidelines are recommended to ensure that the designated space set aside for the preserved trees are protected and construction impacts are kept to a minimum. Standards have been set forth under MICC 19.10.080. Please review these standards prior to any development activity.

- Tree protection fencing shall be erected per attached tree plan prior to moving any heavy equipment on site. Doing this will set clearing limits and avoid compaction of soils within root zones of retained trees.
- Excavation limits shall be laid out in paint on the ground to avoid over excavating.
- Excavations within the drip-lines shall be monitored by a qualified tree professional so necessary precautions can be taken to decrease impacts to tree parts. A qualified tree professional shall monitor excavations when work is required and allowed within the drip-line or critical root zone.
- To establish sub grade for foundations, curbs and pavement sections near the trees, soil shall be removed parallel to the roots and not at 90-degree angles to avoid breaking and tearing roots that lead back to the trunk within the drip-line. Any roots damaged during these excavations should be exposed to sound tissue and cut cleanly with a saw. Cutting tools should be sterilized with alcohol.
- Areas excavated within the drip-line of retained trees shall be thoroughly irrigated weekly during dry periods.
- Preparations for final landscaping shall be accomplished by hand within the drip-lines of retained trees. Large equipment shall be kept outside of the tree protection zones at all times.

Tree Retention Calculation

A minimum of 30-percent retention of large, regulated trees is required over a rolling five-year period. No trees are proposed for removal at this time.

UPDATE

Five replacement trees are required for the prior tree removal. More than 50% of these are required to be of species native to the Pacific Northwest. The minimum size for replacement trees is as follows: Coniferous trees shall be at least six feet tall; and Deciduous trees shall be at least one and one-half inches in caliper.

The approximate locations of replacement trees are shown on the attached map, as well as the recommended species.

Arborist Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine and assess trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risks associated with living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that grow, respond to their environment, mature, decline and sometimes fail in ways we do not fully understand. Conditions are often hidden within trees and below ground.

Arborists cannot guarantee that a tree will be healthy and/or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed. Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

Photo Documentation

Tree #1 – lower trunk



Tree #1 – lower trunk



Tree #1 – upper crown, looking west from street



Tree #1 – upper crown, looking north



Trees #2 and #3



Trees #2 and #3, looking south from backyard



Neighboring trees #101 and #102



South property line looking southeast at Trees #101 and #102



Neighboring trees #103 > #106



West property line, looking south





Layton Tree Consulting LLC

For: Akihiro Nakamura
 Site: 4245 90th AVE SE - Mercer Island

Tree Summary Table

Date: 10/8/2020

Tree/ Tag #	Species Common Name	Species Scientific Name	DBH (inches)	Height (feet)	Drip-Line (feet)				Condition	Exceptional Yes/No	Comments	Proposal
					N	S	E	W				
1	Douglas fir	<i>Pseudotsuga menziesii</i>	28	100	18	12	22	12	Good	No	good form, good vigor, sound	Retain
2	Western red cedar	<i>Thuja plicata</i>	39	76	16	18	16	16	Good	Yes	recently crownb raised, good vogor	Retain
3	Deodar cedar	<i>Cedrus deodora</i>	26	84	12	14	10	12	Good	No	sound, good vigor, disturbed soils	Retain
Neighboring Trees												
101	Douglas fir	<i>Pseudotsuga menziesii</i>	34	106	0	NA	NA	NA	Good	Yes	No concerns, approx 16-feet off property line	Protect
102	Douglas fir	<i>Pseudotsuga menziesii</i>	28	104	4	NA	NA	NA	Good	No	No concerns, approx 16-feet off property line	Protect
103	Lawson cypress	<i>Chamaecyparis lawsoniana</i>	12,11,7,4 (18)	50	NA	NA	6	NA	Fair-Good	No	good vigor	Protect
104	Lawson cypress	<i>Chamaecyparis lawsoniana</i>	10,8 (13)	12	NA	NA	4	NA	Poor	No	topped	Protect
105	Western red cedar	<i>Thuja plicata</i>	24	42	NA	NA	11	NA	Fair-Good	No	broken top, good vigor	Protect
106	Western red cedar	<i>Thuja plicata</i>	17	43	NA	NA	6	NA	Good	No	good form/vigor, natural lean west	Protect

Drip-Line and Limits of Disturbance measurements from face of trunk

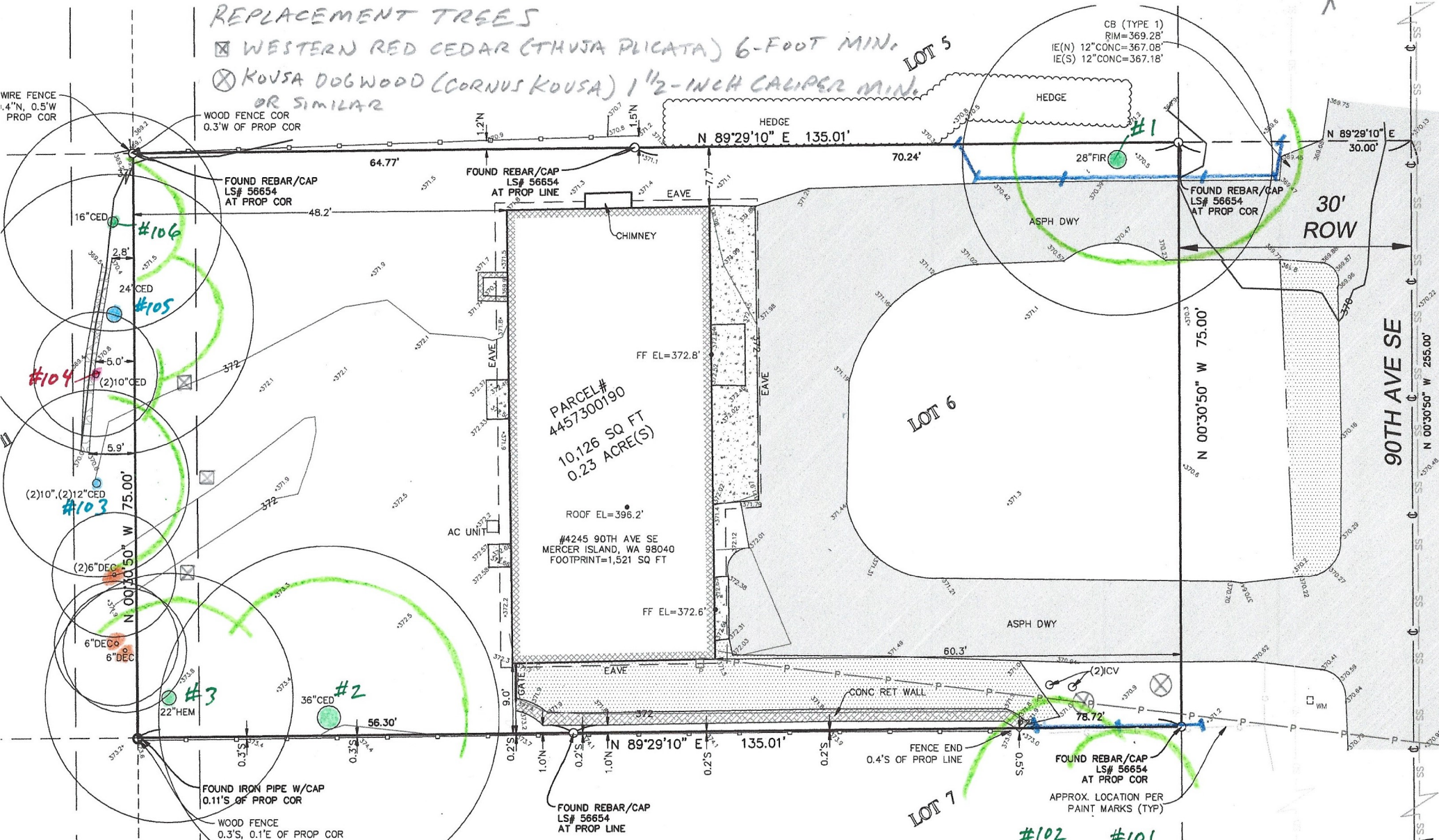
Drip-Line and Limits of Disturbance measurements for Neighboring trees from fence/property line

Calculated DBH: the DBH is parenthesis is the square root of the sum of the dbh for each individual stem squared (example with 3 stems: dbh = square root [(stem1)2 +(stem2)2 +(stem3)2]).

4245 90TH AVE SE TREE PLAN MAP

REPLACEMENT TREES

- ☒ WESTERN RED CEDAR (*THUJA PLICATA*) 6-FOOT MIN.
- ☒ KOUSA DOGWOOD (*CORNUS KOUSA*) 1 1/2-INCH CALIPER MIN. OR SIMILAR



TREE CONDITIONS

- # - GOOD
- # - FAIR-GOOD
- # - POOR
- - NON-REGULATED TREE / SHRUB

- - DRIPLINE
- + - TREE PROTECTION BARRIER

#102 #101
 CB (TYPE 1)
 RIM=371.84'
 IE(N) 12" CONC=369.04'
 IE(S) 12" CONC=369.14'

N 89°29'10" E
 330.03' HELD R1
 APPROX. SCALE
 1" = 17.25'