Tree Solutions Inc
Consulting Arborists

Project No. TS - 8351

Arborist Report

To:	Sturman Architects c/o Logan Gaylan
Site:	6454 E Mercer Way, Mercer Island, WA
Re:	Tree Inventory and Assessment
Date:	December 1, 2022
Project Arborist:	George White, ISA Certified Arborist #PN-8908A ISA Qualified Tree Risk Assessor
Reviewed By:	Connor McDermott, ISA Certified Arborist #PN- 8704A ISA Qualified Tree Risk Assessor
Referenced Documents:	Site Plan A1.1 (Sturman Architects, 11/22/2022)
Attached:	Table of Trees Tree Site Map

Summary

I inventoried and assessed 12 trees on this lot. Based on the Mercer Island City Code (MICC) large (regulated) and exceptional trees are required to be assessed for development projects. I tagged each tree with an aluminum tree tag. Numerical identifiers correspond to the number on each tag.

Of the trees assessed, four met the exceptional tree criteria outlined in the MICC.

There were six adjacent trees that required documentation for this property. Trees on neighboring properties were documented if they appeared to be greater than 10-inches diameter and their driplines extended over the property line. All trees on adjacent properties were estimated from the subject site or public property such as the adjacent right-of-way. I used an alphabetical tree identifier for trees off-site.

Of the 12 trees on-site 11 are proposed for retention which satisfies the 30% large tree retention requirement outlined in MMC 19.10.

Three replacement trees will be required per MMC 19.10.070.

Assignment and Scope of Work

This report outlines the site inspection by George White of Tree Solutions Inc, on March 2nd, 2022. I was asked to visit the site and provide a formal report including findings and management recommendations. Logan Gaylan, of Sturman Architects, requested these services for project planning purposes.

Observations and Discussion

Site

This 20,557 square foot site was located off of E. Mercer Way of Mercer Island. According to King County iMap, no environmentally critical areas exist on site.

A wetland delineation and shoreline setback exist on the eastern side of the site.

I noted the presence of multiple invasive plant species on site including English ivy (*Hedera sp.*) and cherry laurel (*Prunus laurocerasus*). Invasive plants should be managed prior to development.

Proposed Plans

The most recent plans (Site Plan A1.1, Sturman Architects, 11/22/2022) propose the addition of a second story, garage, entry, and outdoor room to the existing single-story house.

Trees

The trees assessed were primarily native species such as Douglas-fir (*Pseudotsuga menziesii*) and western redcedar (*Thuja plicata*), as well as ornamental species such as southern magnolia (*Magnolia grandiflora*) and introduced conifers such as giant sequoia (*Sequoiadendron giganteum*), and Japanese black pine (*Pinus thunbergii*).

I have included an annotated survey of the site to serve as the site map and attached a table of trees that has detailed information about each tree.

Discussion—Construction Impacts

Trees to be retained

Tree 72

Tree 72 is an exceptional Douglas-fir the southwest corner of the lot that is currently proposed for retention (Photo1). A significant portion of the root zone of this tree lies beneath the existing driveway. This tree can be protected at the edge of the existing hardscape provided that the existing driveway is resurfaced without demolishing the existing surface.

Trees 73 and 74

Tree 73 is an exceptional western redcedar located just southeast of the existing house (Photo 2). Tree 74 is an exceptional giant sequoia located west of the existing house. Both trees are to be protected with tree protection fencing located at the Recommended Limits of Disturbance (RLOD). No excavation, grading, materials storage, or machine access is permitted within the tree protection fencing without arborist coordination. The tree protection fencing may be reduced to the Minimum Limits of Disturbance (MLOD) if specific tree protection measures are taken.

The most recent plans show that an addition of an outdoor room which will encroach slightly on the RLOD of trees 73 and 74. The proposed outdoor room addition will sit on pin piles to minimize potential root impacts to trees 73 and 74. Any excavation required for the installation of these piles is to be conducted carefully with a flat-fronted bucket. Any roots encountered must be cut cleanly and immediately backfilled to prevent desiccation. No ground disturbance is planned within the MLOD of either tree. In my opinion, this addition will have a negligible impact to the health and stabililty of trees 73 and 74.

Trees 75-78
Trees 75-78 must be protected with tree protection fencing at the RLOD listed in the attached Table of Trees. I expect that construction impacts should be minimal for these trees.

Trees 80-83
Trees 80-83 are a row of western redcedars north of the house. These trees must be protected at the RLOD of at the edge of the existing hardscapes. Any necessary clearance pruning must be completed by an ISA certified arborist in accordance with the relevant ANSI A300 pruning standards. Pruning should occur prior to the commencement of construction activities. If the concrete path along the north side of the house is to be re-leveled it should be leveled using fill only. No roots should be cut or shaved in this process (see photograph 5).

Tree Removal and Replacement
Tree 79 is a western redcedar that has significant conflicts with the existing patio and concrete path and is proposed for removal. (See photograph 4). The stump of this tree should be ground in place and not ripped out to avoid root damage to adjacent trees. Three replacement trees will be required to mitigate this tree, in accordance with the specifications outlined in MMC 19.10.070.

Recommendations

- Update site plans to include recommended limits of disturbance (RLOD) and minimum limits of disturbance (MLOD).
- Tree protection consisting of chain link fencing should be installed at the RLOD of retained trees. Trees growing in a group should be protected at the edge of their shared RLOD. General tree protection specifications can be found in Appendix F.
- All off-site trees must be protected during construction.
- All pruning should be conducted by an ISA certified arborist following the relevant ANSI A300 specifications. Clearance pruning should occur prior to the commencement of construction activities.
- All tree retention and removal regulations must be followed and are outlined in MICC Chapter 19.10 Trees.
- Ensure tree protection standards comply with MICC 19.10.080 and ISA Best Management Practices (BMP) – Managing Trees During Construction.
- Three replacement trees are required pursuant to MMC 19.10.070.

Respectfully submitted,

George White,

-Consulting Arborist

Appendix A **Glossary**

DBH or DSH: diameter at breast or standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade (Council of Tree and Landscape Appraisers 2019)

tree grove: a group of eight or more trees each 10 inches or more in diameter that form a continuous canopy. Trees that are part of a grove shall also be considered exceptional trees, unless they also meet the definition of a hazardous tree. (MICC 19.16.010)

exceptional tree: a tree measuring 36 inches DSH or greater or with a diameter that is equal to or greater than the diameter listed in the Exceptional Tree Table (MICC 19.16.010)

ISA: International Society of Arboriculture

large tree (regulated): A tree measuring 10 inches or greater DSH (MICC 19.16.010)

MLOD (Minimum Limits of Disturbance) Minimum Limits of Disturbance: represents a distance five (5) times that of the trunk or 6-feet, whichever is greater, and is the minimum distance from a trunk that a structural root can be cut to maintain tree stability.

RLOD (Recommend Limits of Disturbance): As outlined in ISA Best Management Practices: Managing Trees During Construction, this is calculated as a radial distance 8 times the trunk diameter or greater depending on tree species and/or condition. For the purpose of this report, this represents the critical root zone (CRZ).

Visual Tree Assessment (VTA): method of evaluating structural defects and stability in trees by noting the pattern of growth (Mattheck & Breloer 1994)

Appendix B **References**

Accredited Standards Committee A300 (ASC 300). ANSI A300 (Part 1) Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Londonderry: Tree Care Industry Association, 2017.

Council of Tree and Landscape Appraisers, Guide for Plant Appraisal, 10th Edition Second Printing. Atlanta, GA: The International Society of Arboriculture (ISA), 2019.

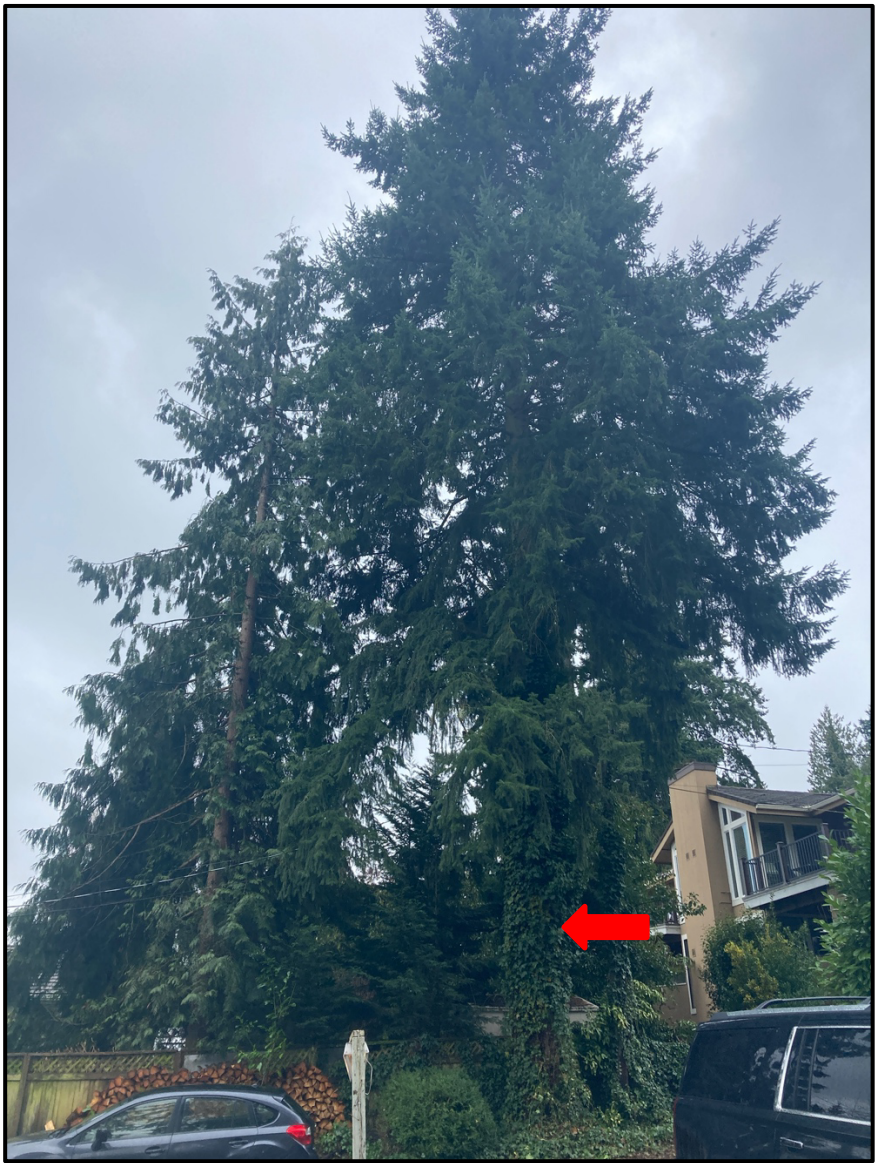
Fite, Kelby and Dr. E. Thomas Smiley. Best Management Practices: Managing Trees During Construction, Second Edition. Champaign, IL: International Society of Arboriculture (ISA), 2016.

Mattheck, Claus and Helge Breloer, The Body Language of Trees.: A Handbook for Failure Analysis. London: HMSO, 1994.

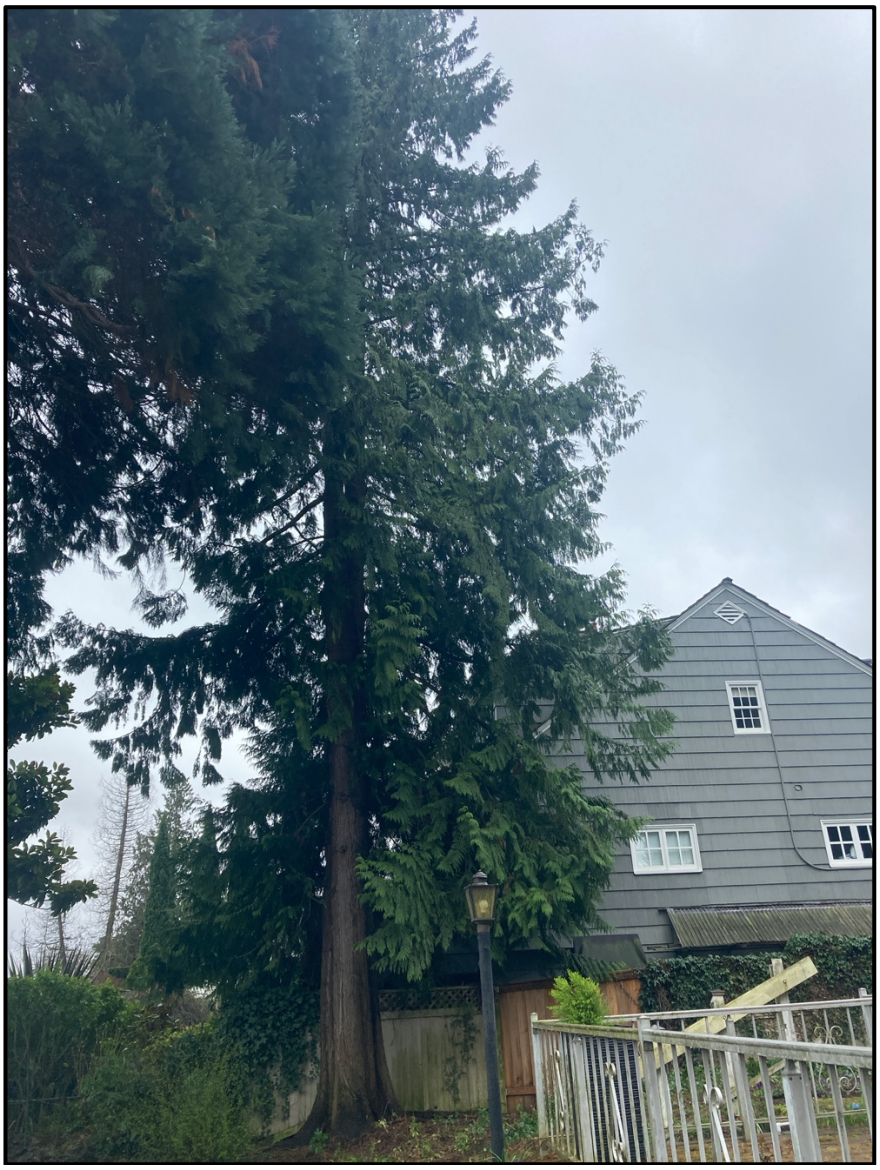
Mercer Island Municipal Code (MICC) 19.16.010. Definitions

Mercer Island Municipal Code (MICC) 19.10. Trees

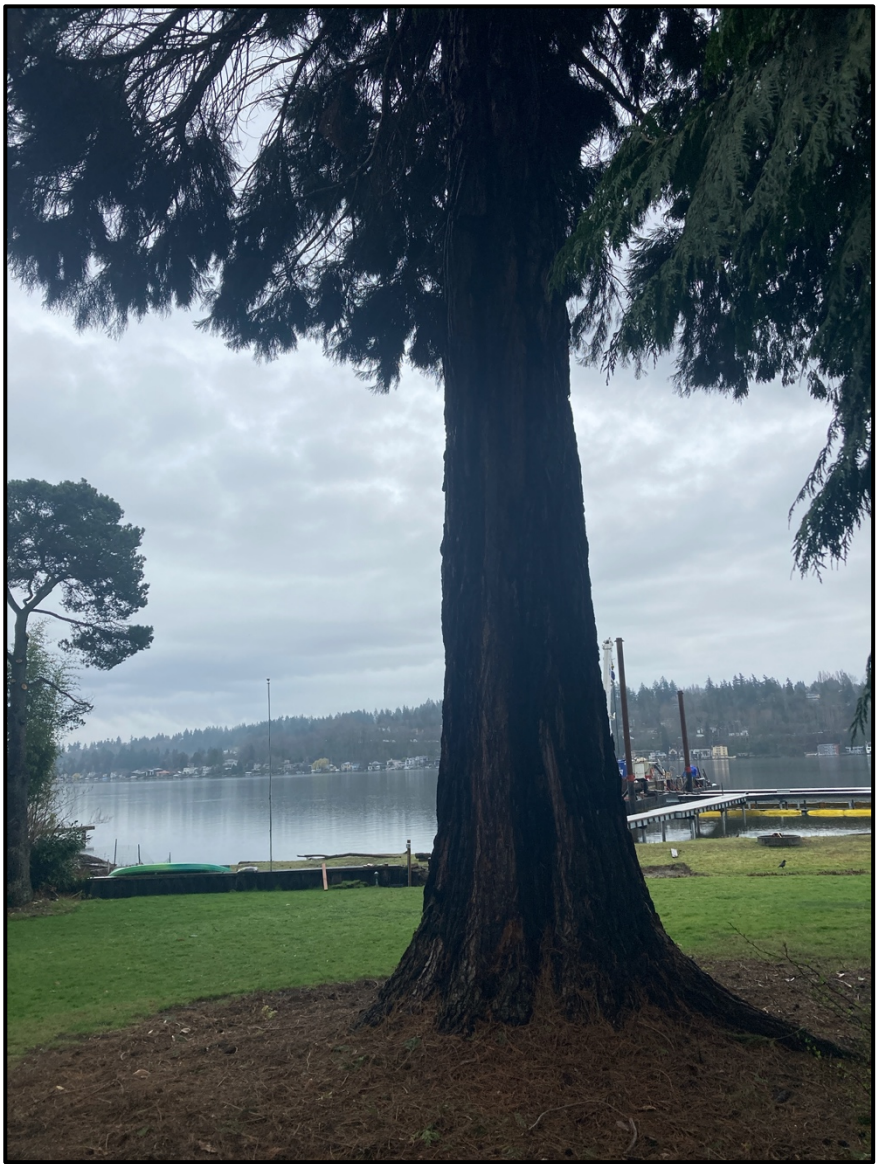
Appendix C **Photographs**



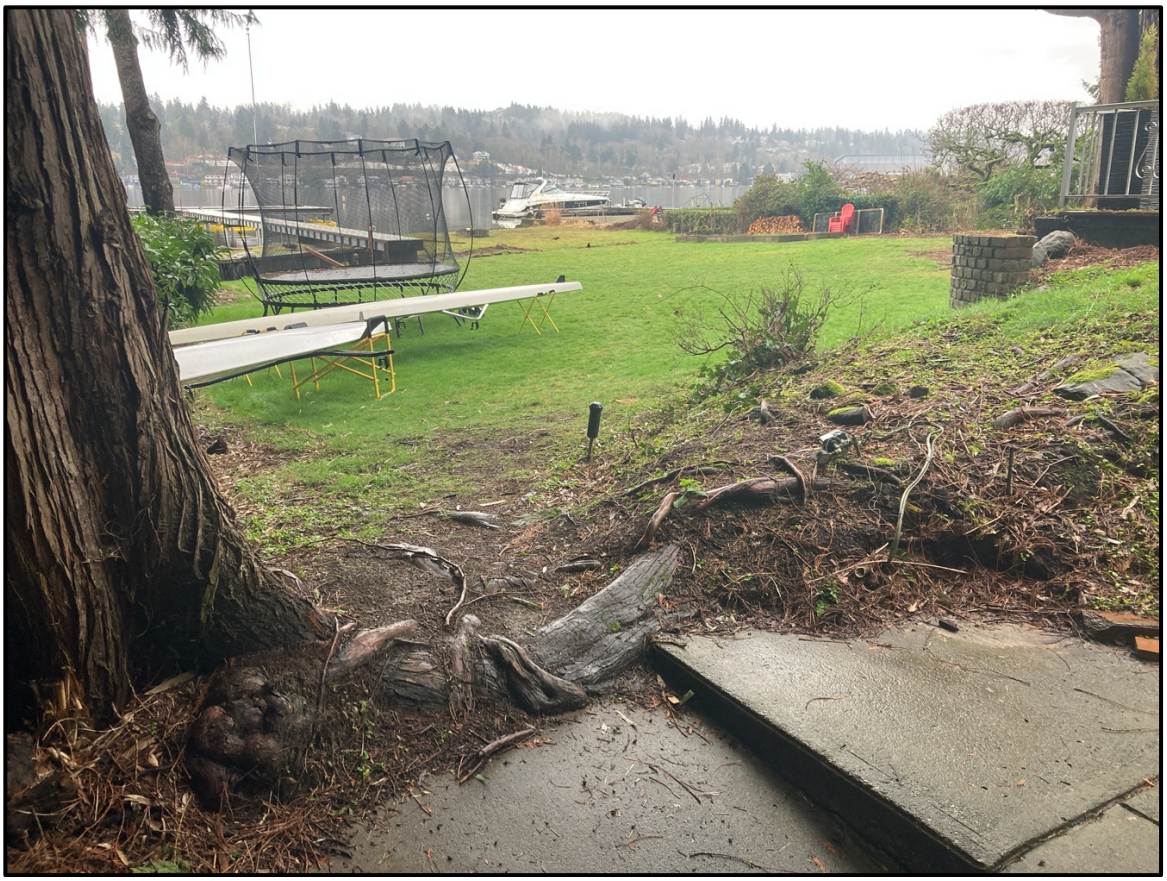
Photograph 1. Tree 72, an exceptional Douglas-fir (Indicated with red arrow) in the southwest corner of the lot. This tree can be protected at the edge of the existing hardscapes. The English ivy should be removed from the trunk.



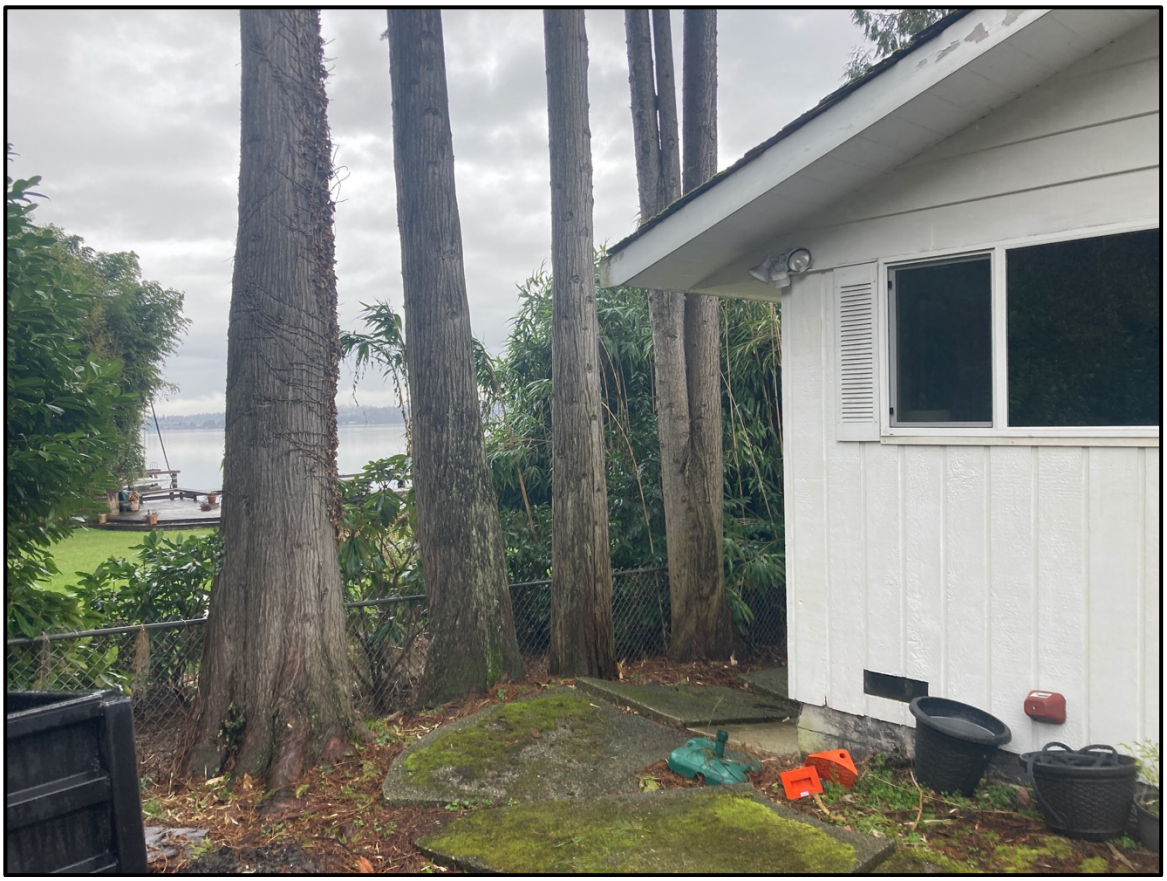
Photograph 2. Tree 73, an exceptional western redcedar southeast of the existing house.



Photograph 3. Tree 74, an exceptional giant sequoia due east of the existing house.



Photograph 4. Tree 79, a 29-inch western redcedar with significant root conflicts with the patio and concrete path. This is the only large tree currently proposed for removal.



Photograph 5. Trees 80 through 83, four western redcedars immediately north of the house. These trees must be protected at the edge of the existing hardscapes for the duration of the project. Any leveling of the concrete pavers must be achieved through fill only.

Appendix D **Assumptions & Limiting Conditions**

1 Consultant assumes that the site and its use do not violate, and is in compliance with, all applicable codes, ordinances, statutes or regulations.

2 The consultant may provide a report or recommendation based on published municipal regulations. The consultant assumes that the municipal regulations published on the date of the report are current municipal regulations and assumes no obligation related to unpublished city regulation information.

3 Any report by the consultant and any values expressed therein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event, or upon any finding to be reported.

4 All photographs included in this report were taken by Tree Solutions, Inc. during the documented site visit, unless otherwise noted. Sketches, drawings and photographs (included in, and attached to, this report) are intended as visual aids and are not necessarily to scale. They should not be construed as engineering drawings, architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by the consultant as to the sufficiency or accuracy of the information.

5 Unless otherwise agreed, (1) information contained in any report by consultant covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring.

6 These findings are based on the observations and opinions of the authoring arborist, and do not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described and assessed.

7 Measurements are subject to typical margins of error, considering the oval or asymmetrical cross-section of most trunks and canopies.

8 Tree Solutions did not review any reports or perform any tests related to the soil located on the subject property unless outlined in the scope of services. Tree Solutions staff are not and do not claim to be soils experts. An independent inventory and evaluation of the site's soil should be obtained by a qualified professional if an additional understanding of the site's characteristics is needed to make an informed decision.

9 Our assessments are made in conformity with acceptable evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.

Appendix E **Methods**

Measuring

I measured the diameter of each tree at 54 inches above grade, diameter at standard height (DSH). If a tree had multiple stems, I measured each stem individually at standard height and determined a single-stem equivalent diameter by using the method outlined in the city of Seattle Director's Rule 16-2008 or the Guide for Plant Appraisal, 10th Edition Second Printing published by the Council of Tree and Landscape Appraisers. A tree is regulated based on this single-stem equivalent diameter value. Because this value is calculated in the office following field work, some unregulated trees may be included in our data set. These trees are included in the tree table for informational purposes only and not factored into tree totals discussed in this report.

Tagging

I tagged each tree with a circular aluminum tag at eye level. I assigned each tree a numerical identifier on our map and in our tree table, corresponding to this tree tag. I used alphabetical identifiers for trees off-site.

Evaluating

I evaluated tree health and structure utilizing visual tree assessment (VTA) methods. The basis behind VTA is the identification of symptoms, which the tree produces in reaction to a weak spot or area of mechanical stress. A tree reacts to mechanical and physiological stresses by growing more vigorously to re-enforce weak areas, while depriving less stressed parts. An understanding of the uniform stress allows the arborist to make informed judgments about the condition of a tree.

Rating

When rating tree health, I took into consideration crown indicators such as foliar density, size, color, stem and shoot extensions. When rating tree structure, I evaluated the tree for form and structural defects, including past damage and decay. Tree Solutions has adapted our ratings based on the Purdue University Extension formula values for health condition (*Purdue University Extension bulletin FNR-473-W - Tree Appraisal*). These values are a general representation used to assist arborists in assigning ratings.

Health

Excellent - Perfect specimen with excellent form and vigor, well-balanced crown. Normal to exceeding shoot length on new growth. Leaf size and color normal. Trunk is sound and solid. Root zone undisturbed. No apparent pest problems. Long safe useful life expectancy for the species.

Good - Imperfect canopy density in few parts of the tree, up to 10% of the canopy. Normal to less than ¾ typical growth rate of shoots and minor deficiency in typical leaf development. Few pest issues or damage, and if they exist, they are controllable, or tree is reacting appropriately. Normal branch and stem development with healthy growth. Safe useful life expectancy typical for the species.

Fair - Crown decline and dieback up to 30% of the canopy. Leaf color is somewhat chlorotic/necrotic with smaller leaves and "off" coloration. Shoot extensions indicate some stunting and stressed growing conditions. Stress cone crop clearly visible. Obvious signs of pest problems contributing to lesser condition, control might be possible. Some decay areas found in main stem and branches. Below average safe useful life expectancy

Poor - Lacking full crown, more than 50% decline and dieback, especially affecting larger branches. Stunting of shoots is obvious with little evidence of growth on smaller stems. Leaf size and color

reveals overall stress in the plant. Insect or disease infestation may be severe and uncontrollable. Extensive decay or hollows in branches and trunk. Short safe useful life expectancy.

Structure

Excellent - Root plate undisturbed and clear of any obstructions. Trunk flare has normal development. No visible trunk defects or cavities. Branch spacing/structure and attachments are free of any defects.

Good - Root plate appears normal, with only minor damage. Possible signs of root dysfunction around trunk flare. Minor trunk defects from previous injury, with good closure and less than 25% of bark section missing. Good branch habit; minor dieback with some signs of previous pruning. Codominant stem formation may be present, requiring minor corrections.

Fair - Root plate reveals previous damage or disturbance. Dysfunctional roots may be visible around the main stem. Evidence of trunk damage or cavities, with decay or defects present and less than 30% of bark sections missing on trunk. Co-dominant stems are present. Branching habit and attachments indicate poor pruning or damage, which requires moderate corrections.

Poor - Root plate disturbance and defects indicate major damage, with girdling roots around the trunk flare. Trunk reveals more than 50% of bark section missing. Branch structure has poor attachments, with several structurally important branches dead or broken. Canopy reveals signs of damage or previous topping or lion-tailing, with major corrective action required.

Appendix F **Tree Protection Specifications**

The following is a list of protection measures that must be employed before, during and after construction to ensure the long-term viability of retained trees.

1. **Project Arborist:** The project arborists shall at minimum have an International Society of Arboriculture (ISA) Certification and ISA Tree Risk Assessment Qualification.
2. **Recommended Limits of Disturbance (RLOD):** The city of Mercer Island requires a recommended limits of disturbance (RLOD) of 8-12x the diameter of the tree. In some cases, the RLOD may extend outside tree protection fencing. Work within the RLOD must be approved and monitored by the project arborist.
3. **Tree Protection Fencing:** Tree protection shall consist of 6-foot chain-link fencing installed at the RLOD as approved by the project arborist. Fence posts shall be anchored into the ground or bolted to existing hardscape surfaces.
    a. Where trees are being retained as a group the fencing shall encompass the entire area including all landscape beds or lawn areas associated with the grove.
    b. Per arborist approval, RLOD fencing may be placed at the edge of existing hardscape within the RLOD to allow for staging and traffic.
    c. Where work is planned within the RLOD, install fencing at edge of RLOD and move to limits of disturbance at the time that the work within the RLOD is planned to occur. This ensures that work within the RLOD is completed to specification.
    d. Where trees are protected at the edge of the project boundary, construction limits fencing shall be incorporated as the boundary of tree protection fencing.
4. **Access Beyond Tree Protection Fencing:** In areas where work such as installation of utilities is required within the RLOD, a locking gate will be installed in the fencing to facilitate access. The project manager or project arborist shall be present when tree protection areas are accessed.
5. **Tree Protection Signage:** Tree protection signage shall be affixed to fencing every 20 feet. Signage shall be fluorescent, at least 2’ x 2’ in size, with 3” tall text. Signage will note: “Tree Protection Area – Do Not Enter: Entry into the tree protection area is prohibited unless authorized by the project manager.” Signage shall include the contact information for the project manager and instructions for gaining access to the area.
6. **Filter / Silt Fencing:** Filter / silt fencing within the RLOD of retained trees shall be installed in a manner that does not sever roots. Install so that filter / silt fencing sits on the ground and is weighed in place by sandbags or gravel. Do not trench to insert filter / silt fencing into the ground.
7. **Monitoring:** The project arborist shall monitor all ground disturbance at the edge of or within the RLOD, including where the RLOD extends beyond the tree protection fencing.
8. **Soil Protection:** No parking, foot traffic, materials storage, or dumping (including excavated soils) are allowed within the RLOD. Heavy machinery shall remain outside of the RLOD. Access to the tree protection area will be granted under the supervision of the project arborist. If project arborist allows, heavy machinery can enter the area if soils are protected from the load. Acceptable methods of soil protection include applying 3/4-inch plywood over 4 to 6 inches of wood chip mulch or use of AlturnaMats® (or equivalent product approved by the project arborist). Retain existing paved surfaces within or at the edge of the RLOD for as long as possible.
9. **Soil Remediation:** Soil compacted within the RLOD of retained trees shall be remediated using pneumatic air excavation according to a specification produced by the project arborist.
10. **Canopy Protection**: Where fencing is installed at the limits of disturbance within the RLOD, canopy management (pruning or tying back) shall be conducted to ensure that vehicular traffic does not

damage canopy parts. Exhaust from machinery shall be located five feet outside the dripline of retained trees. No exhaust shall come in contact with foliage for prolonged periods of time.

11. **Duff/Mulch:** Apply 6 inches of arborist wood chip mulch or hog fuel over bare soil within the RLOD to prevent compaction and evaporation. RLOD shall be free of invasive weeds to facilitate mulch application. Keep mulch 1 foot away from the base of trees and 6 inches from retained understory vegetation. Retain and protect as much of the existing duff and understory vegetation as possible.
12. **Excavation:** Excavation done at the edge of or within the RLOD shall use alternative methods such as pneumatic air excavation or hand digging. If heavy machinery is used, use flat front buckets with the project arborist spotting for roots. When roots are encountered, stop excavation and cleanly sever roots. The project arborist shall monitor all excavation done within the RLOD.
13. **Fill:** Limit fill to 1 foot of uncompacted well-draining soil, within the RLOD of retained trees. In areas where additional fill is required, consult with the project arborist. Fill must be kept at least 1 foot from the trunks of trees.
14. **Root Pruning:** Limit root pruning to the extent possible. All roots shall be pruned with a sharp saw making clean cuts. Do not fracture or break roots with excavation equipment.
15. **Root Moisture:** Root cuts and exposed roots shall be immediately covered with soil, mulch, or clear polyethylene sheeting and kept moist. Water to maintain moist condition until the area is back filled. Do not allow exposed roots to dry out before replacing permanent back fill.
16. **Hardscape Removal:** Retain hardscape surfaces for as long as practical. Remove hardscape in a manner that does not require machinery to traverse newly exposed soil within the RLOD. Where equipment must traverse the newly exposed soil, apply soil protection as described in section 8. Replace fencing at edge of RLOD if soil exposed by hardscape removal will remain for any period of time.
17. **Tree Removal:** All trees to be removed that are located within the RLOD of retained trees shall not be ripped, pulled, or pushed over. The tree should be cut to the base and the stump either left or ground out. A flat front bucket can also be used to sever roots around all sides of the stump, or the roots can be exposed using hydro or air excavation and then cut before removing the stump.
18. **Irrigation:** Retained trees with soil disturbance within the RLOD will require supplemental water from June through September. Acceptable methods of irrigation include drip, sprinkler, or watering truck. Trees shall be watered three times per month during this time.
19. **Pruning:** Pruning required for construction and safety clearance shall be done with a pruning specification provided by the project arborist in accordance with American National Standards Institute ANSI-A300 2017 Standard Practices for Pruning. Pruning shall be conducted or monitored by an arborist with an ISA Certification.
20. **Plan Updates:** All plan updates or field modification that result in impacts within the RLOD or change the retained status of trees shall be reviewed by the senior project manager and project arborist prior to conducting the work.
21. **Materials:** Contractor shall have the following materials onsite and available for use during work in the RLOD:
    - **Sharp and clean bypass hand pruners**
    - **Sharp and clean bypass loppers**
    - **Sharp hand-held root saw**
    - **Reciprocating saw with new blades**
    - **Shovels**
    - **Trowels**
    - **Clear polyethylene sheeting**
    - **Burlap**
    - **Water**

PROJECT DATA

PROJECT ADDRESS: 6454 E MERCER WAY
MERCER ISLAND, WA 98040

PROPERTY TAX ID NUMBER: 302405-9118

SCOPE OF WORK: NEW GARAGE ADDITION AND SECOND FLOOR ADDITION TO EXISTING SINGLE FAMILY RESIDENCE. NEW ROOF AND SECOND STORY FRAMING.
WORK WILL BE LOCATED IN WETLAND BUFFER BUT IS ABOVE EXISTING HOUSE TO REMAIN.

ZONING:	R-15
CONSTRUCTION TYPE:	TYPE V B
SEISMIC ZONE:	3
NUMBER OF STORIES:	2 STORY PROPOSED. 1 STORY EXISTING RESIDENCE
BUILDING HEIGHT LIMIT:	30 FT ABOVE AVERAGE BUILDING ELEVATION
LOT AREA:	20,717 SF

SETBACKS:	FRONT LOT LINE = 20 FT REAR LOT LINE = 25 FT SIDE LOT LINES = SUM 15 FT, MIN 5' EACH
GROSS FLOOR AREA:	LESSER OF 40.0% OR 12,000 SF = 8,286.8 SF
LOT SLOPE:	LOT SLOPE IS 5.5%,
LOT COVERAGE:	40% OF LOT SIZE = 8,286.8 SF ALLOWABLE PROPOSED = 6,258.2 SF HOUSE 4,650.9 SF + 1,607.3 SF DRIVEWAY
HARDSCAPE COVERAGE:	9% OF LOT SIZE = 1,864.5 SF ALLOWABLE PROPOSED = 1,487.2 SF

	EXISTING FLOOR AREA	TOTAL
MAIN FLOOR	2,178.3 SF	2,698.5 SF
UPPER FLOOR	0 SF	2,624.9 SF
GARAGE	0 SF	807.4 SF
GROSS FLOOR AREA	2,178.3 SF	6,130.8 SF

NET LOT AREA	20,717 SF
ALLOWED MAX. % GFA COVERAGE	40.0 % OR 12,000 SF
ALLOWED GROSS FLOOR AREA	8,286.8 SF
EXISTING GROSS FLOOR AREA	2,178.3 SF
EXISTING % GFA COVERAGE	10.5%
PROPOSED GROSS FLOOR AREA	TBD
PROPSED % GFA COVERAGE	TBD%

Tree Solutions
Tree Inventory

Arborist: GW

This map documents the tree inventory performed by GW of Tree Solutions Inc. on 3.1.2022. All regulated on-site trees were tagged and assigned a numerical identifier. All off-site trees that appeared to be regulated were assigned an alphabetical identifier.

Not on survey*: ●

*Tree locations added to the survey are approximate and should be confirmed and added to the survey.

F E D C 83 82 81 80 79 78 77 74 75 76 73 72 A B

01 02 03 04 05 06 07 08 09 10 11

16" CEDAR
48" CEDAR
16" EVERGREEN
16" CEDAR
PROPOSED UPPER FLOOR ADDITION (LIGHTER HATCH)
EXISTING TREE TO BE REMOVED
32" CEDAR
20" CEDAR
22" EVERGREEN
PROPERTY LINE
N 88° 32' 59" W 198.0'
8'-5 1/2" SIDE YARD SETBACK
7'-6" VARIABLE SIDE YARD SETBACK
7'-6" SIDE YARD SETBACK
(E) CIRCULAR DRIVE TO BE REMOVED
20'-0" FRONT YARD SETBACK
MAX 200SF ENTRY ADDITION IN BUFFER
MAIN FLOOR WALL BELOW EXISTING EAVE LINE
EXISTING RESIDENCE 6454 E MERCER WAY
(E) PATIO TO REMAIN
NEW STONE ENTRY PATH
PROPERTY LINE N 01° 25' 38" E 89.64'
HORIZ DIST = 217.29'
LINE OF ORDINARY HIGH WATER
EXISTING DOCK TO REMAIN
WETLAND BOUNDARY P WATERSHED COMPANY DELINEATION REPORT
LAKE WASHINGTON
25'-0" SHORELINE IMPERVIOUS SURF LIMITATION
25'-0" SHORELINE SETBACK
30' WETLAND BUFFER LINE
40'-0" WETLAND BUFFER
40' WETLAND BUFFER LINE
70" EVERGREEN
38" EVERGREEN
46" CEDAR
7'-6" SIDE YARD SETBACK
PROPERTY LINE N 88° 35' 33" W 257.4'
32" EVERGREEN
HIGH PT EL.=30.6'
ADJACENT SHED
EXISTING DRIVEWAY TO REMAIN
NEW GARAGE ADDITION
ADJACENT RESIDENCE
CCESS

N

SITE PLAN

SCALE: 1/16" = 1'-0"

STURMAN ARCHITECTS

SIMPSON RESIDENCE
6454 E MERCER WAY MERCER ISLAND, WA 98040
SCHEMATIC DESIGN 1-20-2022

Tree Solutions Inc
Consulting Arborists

Table of Trees

6454 E Mercer Way,
Mercer Island, WA

Arborist: GW
Date of Inventory: 03.01.2022
Table Updated: 12.01.2022

DSH (Diameter at Standard Height) is measured 4.5 feet above grade, or as specified in the Guide for Plant Appraisal, 10th Edition , published by the Council of Tree and Landscape Appraisers.
DSH for multi-stem trees are noted as a single stem equivalent, which is calculated using the method defined in the Guide for Plant Appraisal, 10th Edition .
Letters are used to identify trees on neighboring property with overhanging canopies.
Minimum Limit of Disturbance (MLOD) is defined as 5 times trunk diameter or 6 feet, whichever is greater.
Recommended Limit of Disturbance (RLOD) is 8 times trunk diameter or greater depending on tree species and/or condition.
Dripline is measured from the center of the tree to the outermost extent of the canopy.

							Dripline Radius (feet)										
Tree ID	**Scientific Name**	**Common Name**	**DSH** (inches)	**DSH Multistem**	**Health Condition**	**Structural Condition**	**N**	**E**	**S**	**W**	**Exceptional Threshold**	**Exceptional**	**24-Inch DSH or Greater**	**RLOD** (feet)	**MLOD (feet)**	**Proposed Action**	**Notes**
72	*Pseudotsuga menziesii*	*Douglas-fir*	35.5		Good	Fair	25.5	20.5	23.5	26.5	*30.0*	Exceptional - Size	Yes	24 or at the edge of exisitng hardscapes	15	Retain	Codominant at 40' with narrow union; English ivy to 40'; cherry laurel at base
73	*Thuja plicata*	*Western Redcedar*	35.8		Good	Fair	21.5	16.5	11.5	20.0	*30.0*	Exceptional - Size	Yes	25 or at the edge of exisitng hardscapes	15	Retain	Codominant at 25' with narrow union; growing next to fence; limbs pruned at neighbors house; neighbor's house 10' from trunk
74	*Sequoiadendron giganteum*	*Giant Sequoia*	67.1		Good	Good	25.8	26.3	27.8	24.8	*30.0*	Exceptional - Size	Yes	45 or at the edge of exisitng hardscapes	28	Retain	Large tree; big buttress roots; extensive surface roots; nice tree
75	*Magnolia grandiflora*	*Southern Magnolia*	11.0	7.2,8.3	Good	Good	0.5	10.5	15.5	12.5	*16.0*		-	7	5	Retain	Codominant at base; phototropic lean to south; suppressed
76	*Thuja plicata*	*Western Redcedar*	45.0		Good	Fair	21.9	24.4	17.9	19.4	*30.0*	Exceptional - Size	Yes	30	19	Retain	Codominant at 50' with narrow union; recently crown raised; surface roots present
77	*Pinus thunbergii*	*Japanese black pine*	22.7		Good	Fair	15.9	13.9	14.9	16.9	-		-	15	9	Retain	Low live crown ratio; recently crown raised; several large cuts; soil very saturated near base
78	*Thuja plicata*	*Western Redcedar*	24.2		Good	Good	13.0	16.0	15.0	16.0	*30.0*		Yes	16	10	Retain	Growing against fence; bamboo near base; slight corrected lean to east
79	*Thuja plicata*	*Western Redcedar*	29.2		Good	Good	17.2	18.2	20.7	20.2	*30.0*		Yes	19	12	Remove	Slight corrected lean; large surface roots in conflict with patio; stairs; walkway; growing against fence; bamboo near base
80	*Thuja plicata*	*Western Redcedar*	19.4		Good	Poor	18.8	13.8	14.8	5.8	*30.0*		-	12 or edge of existing hardscapes	8	Retain	Codominant at 8'; topped at 40' w multiple reiterations; conflicts with concrete walk; 7.5' north of existing house house
81	*Thuja plicata*	*Western Redcedar*	18.6		Fair	Good	18.8	5.8	14.8	5.8	*30.0*		-	13 or edge of existing hardscapes	8	Retain	Thin canopy; conflicts with walkway; 8' from existing house
82	*Thuja plicata*	*Western Redcedar*	22.2		Fair	Good	18.9	5.9	16.9	5.9	*30.0*		-	15 or edge of exisitng hardscapes	9	Retain	Thin canopy; conflicts with walkway; 9' from exisitng house
83	*Thuja plicata*	*Western Redcedar*	25.7		Fair	Good	19.1	6.1	18.1	13.1	*30.0*		Yes	17 or at the edge of exisitng hardscapes	11	Retain	Thin canopy; surface roots; conflicts with walkway; debris at base; 9' north of existing house
Off-site Trees																	
A	*Thuja plicata*	*Western Redcedar*	22.0		Good	Good	11.9	16.9	18.9	12.9	*30.0*		-	15 or edge of exsiitng hardscapes	9	Retain	Overhangs fence by 6'
B	*Magnolia x soulangiana*	*Saucer magnolia*	15.1	8,8,10	Good	Good	11.6	11.6	11.6	11.6	-		-	10	6	Retain	Kept low for view; slightly overhangs property line

Tree Solutions Inc
Consulting Arborists

Table of Trees

6454 E Mercer Way,
Mercer Island, WA

Arborist: GW
Date of Inventory: 03.01.2022
Table Updated: 12.01.2022

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional	24-Inch DSH or Greater	RLOD (feet)	MLOD (feet)	Proposed Action	Notes
C	*Pseudotsuga menziesii*	*Douglas-fir*	24.0		Good	Fair	21.0	23.0	24.0	16.0	*30.0*		Yes	16	10	Retain	Overhangs property line by 18'; possibly topped at 75'
D	*Pseudotsuga menziesii*	*Douglas-fir*	26.0		Good	Fair	21.1	16.1	26.1	13.1	*30.0*		Yes	17	11	Retain	Overhangs prop line by 18; possibly topped at 80'
E	*Pseudotsuga menziesii*	*Douglas-fir*	13.0		Good	Good	20.5	15.5	24.5	12.5	*30.0*		-	9	5	Retain	Overhangs prop line by 18; subdominant
F	*Pseudotsuga menziesii*	*Douglas-fir*	20.0		Good	Fair	20.8	20.8	26.8	25.8	*30.0*		-	13	8	Retain	Overhangs property line by 12'; kink at 45'; west neighbor's tree; possibly topped at 85'