

DRAFT Arborist Report

To: Osborn Consulting, c/o Forrest Jammer
Site: 15600 Dayton Ave N, Shoreline, WA, 98133
Re: WSDOT Tree Impacts
Date: January 14, 2020
Project Arborist: Josh Petter
ISA Certified Arborist #PN- 8406A
ISA Qualified Tree Risk Assessor
Katie Hogan
ISA Certified Arborist #PN- 8078A
ISA Qualified Tree Risk Assessor
Referenced Documents: Grading and Drainage Plan C2.01 – C2.03 (Ankrom Moisan Architects, INC, dated 07.11.19)
Attached: Table of Trees
Tree Site Map

Summary

We assessed and inventoried 296 significant trees at the above addressed site. We only assessed trees that were near proposed disturbances and could be impacted by renovations. Of the trees that we assessed, 37 trees can be retained, 65 impacted, and 194 would have to be removed based on the proposed plans. A reduction in right-of-way (ROW) requirements along Dayton Ave N would allow for additional tree retention. Alternative tree retention options are discussed in detail in this report.

We also assessed two trees on adjacent properties that had canopies overhanging the subject site. Trees on neighboring properties were documented if they appeared to be significant size 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 (ROW). We used an alphabetical tree identifier for trees off-site.

Assignment & Scope of Report

This report outlines the site inspection by Josh Petter and Katie Hogan, of Tree Solutions Inc, on January 2nd and January 7th, 2020. We were asked to visit the site and assess trees on, and adjacent to, the site that could be impacted by proposed construction. We were asked to produce an arborist report documenting our findings and recommendations. Forrest Jammer, of Osborne Consulting, requested these services for project planning purposes. Photos and a glossary are followed by assumptions and limiting conditions [Appendix A](#), methods [Appendix B](#), and tree protection specifications [Appendix C](#).

Observations & Discussion

The Site and History

According to King County iMap the subject site consists of one parcel (1826049013), totaling 668,210 square feet, located within the City of Shoreline. The site is currently developed with Washington State Department of Transportation (WSDOT) buildings and parking. There are renovations proposed for additional on-site parking and drainage; as well as, renovations in the ROWs that front N 155th Street, Dayton Ave N, and N 160th Street.

We observed a number of invasive plant species on the site, including ivy (*Hedera* spp.), English holly (*Ilex aquifolium*), and Himalayan blackberry (*Rubus bifrons*).

Site Trees

Many of the trees on-site are native conifers and include western redcedar (*Thuja plicata*), Douglas-fir (*Pseudotsuga menziesii*), and western white pine (*Pinus monticola*). Specifics for each tree can be found in the attached Table of Trees.

There are a large number of small-diameter trees along Dayton Ave N that were planted among existing trees. These appear to have been topped and are suppressed from lack of sunlight.

Adjacent Trees

We assessed two trees with canopies overhanging the project site (Trees A and B).

Discussion—Construction Impacts

This report is preliminary as we have not reviewed final construction plans for this area.

We inventoried 296 trees and provide a recommendation (retain, impacted, remove) based on the existing plans for each tree; these can be found in the attached Table of Trees. Retained trees are trees that have very little disturbance or impact from the proposed renovations. Impacted trees are those that could be retained, but the health will likely be impacted by the construction disturbance and removal of adjacent trees. The success of retaining impacted trees will rely on following the tree protection specifications found in Appendix C. Trees recommended for removal are trees that will likely have substantial damage to their health and structure.

N 155th St

A 6-foot sidewalk is proposed along N 155th street that will require removal of a number of trees and impact others (Photograph 1). We assessed 76 total trees along N 155th St; 43 of which will likely require removal. In some areas, the proposed sidewalk extends to the north to the existing edge of slope. If slope stabilization is required, methods should be considered that minimize over-excavation and support tree retention. Tree Solutions can provide a detailed specification for this area once plans are

finalized. Some small diameter (2 inches or less) trees are growing throughout this area that could be transplanted to other locations on site.

There is a high concentration of invasive ivy in this area. We recommend removing the ivy to protect the trees that will remain. At a minimum, the ivy should be cut at the base and pulled back to form a 3-foot circle; this helps keep the ivy from growing up the trunk and strangling all of the existing vegetation.

Dayton Avenue

Currently, there is a 12-foot parallel parking, 8-foot sidewalk, 18-inch curb, and 5-foot amenity strip proposed within the right-of-way fronting the client's property along Dayton Avenue N (Photograph 2). There are a number of large-statured native trees within this area that will have to be removed to accommodate this improvement. Of particular importance is the concentration of western white pine (*Pinus monticola*) in this area. This tree species is susceptible to white pine blister rust (*Cronartium ribicola*), an invasive pathogen; however, we did not observe this pathogen on these trees. Since this tree species is becoming less and less common across the Pacific Northwest it should be retained wherever possible.

We were asked to assess tree retention based on three scenarios, in which various ROW requirements were reduced. The following three scenarios are from the email sent by Alisa Nguyen, engineer for the City of Shoreline.

1. *If no on-street parking is provided, but the 5' amenity zone (between curb and sidewalk) and 8' sidewalk is maintained*
2. *If no on-street parking is provided, but the 8' sidewalk is maintained (amenity zone would be between back of sidewalk and property line)*
3. *If no on-street parking is provided, and the sidewalk is reduced to 6' in critical root zones (could also be permeable pavement)*

Scenarios 1 and 2 would result in a similar number of trees retained, impacted, and removed. This is due to the comparable levels of disturbance associated with preparing the 5-foot amenity strip behind the sidewalk. If there is no grading and only minimal planting in the amenity strip east of the sidewalk (scenario 2) this would protect additional trees; however, in our experience this is often not the case, and for this assessment we are assuming comparable disturbance in both scenarios. Scenario 2 is better for tree recovery and lessening long-term impacts. Furthermore, option two will allow any new trees to grow larger and provide greater benefits due to the larger soil volume. Protecting trees together with shared soil volume is a better practice than planting trees in a narrow 5-foot strip.

Scenario 3 would result in the least impact to existing trees and would provide the greatest potential tree retention. Permeable pavement is a good option to increase the available air and water that is available to the trees in the future. Typically, the construction of a permeable sidewalk results in comparable levels of disturbance to trees as does a traditional sidewalk.

We inventoried 149 trees along Dayton Avenue (77 through 147 and 156 through 233). There are nine trees greater than 30 inches DSH (98, 106, 113, 115, 127, 132, 140, 145, and 217) along Dayton Avenue,

which would be removed in all three of the proposed scenarios. In general, the larger trees were growing closer to the road, making them more difficult to retain due to additional disturbances.

Counts for trees removed, impacted, and retained can be found in Table 1. Cumulatively, there is a total of 2,079 diameter inches at breast height for these 149 trees. This measurement helps to elucidate the volume of trees being retained and removed in the three scenarios. Sums of inches for removed, impacted, and retained trees can be found in Table 2.

Table 1. Tree retention and removal (count) **Dayton Ave N**

	Current plans	Scenarios 1 and 2	Scenario 3
Trees Retained	13	72	88
Trees Impacted	31	24	11
Trees Removed	105	53	50

What about impacts to existing tree canopy?

What about similar info for 155th St and 160th St?

Table 2. Tree retention and removal (total inches measured at DSH) **Dayton Ave N**

	Current plans	Scenarios 1 and 2	Scenario 3
Trees Retained (Diameter Inches)	164	575	774
Trees Impacted (Diameter Inches)	302	345	190
Trees Removed (Diameter Inches)	1614	1159	1114

North of the access road along Dayton Ave N, there is no parallel parking proposed, instead there is an improved bus stop and the sidewalk is widened to 8-feet. It appears that there is a 5-foot amenity area proposed east of the sidewalk. A reduction in the sidewalk to 6 feet and the elimination of the amenity area could potentially save all of the trees in that area (209 through 233). This area has a lot of mature trees with visible surface roots extending towards the existing sidewalk. Pneumatic air excavation could be used to dig a trench to explore the locations and concentration of roots from those trees. This would help to better understand the impacts to the trees and how much disturbance would occur between a 6-foot and 8-foot sidewalk. In either scenario we recommend keeping excavation to an absolute minimum to protect the trees. Additionally, we recommend adding coarse arborist woodchip mulch to this area to help retain moisture and improve the soil structure.

North 160th Street

The area along North 160th Street is proposed to be regraded and replanted with different trees and shrubs. Most of the current trees are proposed for removal to accommodate the change in landscape. We recommend eliminating the grading in this area and retaining the trees that are currently there. Additional trees and plants can be carefully installed around the existing landscape. Invasive plant species should be removed from this area prior to any work or restoration.

There is a grouping of cottonwood (*Populus trichocarpa*) trees (250 through 253) on the northeast corner of the property. These trees are in close proximity to improvements and are heavily covered in ivy. This type of tree species is fast-growing and often drops large branches. These trees should be removed if there is any soil disturbance within their driplines.

Storm Drainage

The storm drainage improvements will require a number of trees to be removed. Tree 284 is a 4.1-DSH giant sequoia (*Sequoiadendron giganteum*) in good health and structural condition. This tree is young and a good candidate for transplanting to another planting location on the site (Photograph 4).

Interior Trees

We assessed a number of trees in the interior of the site that will be impacted by construction. The impacts include parking and pedestrian walkway renovations.

Path off Dayton Ave N

There is a pedestrian path originating off of Dayton Ave N that is proposed to be renovated and relocated (Photograph 3). Existing hardscape should be removed carefully so that no equipment is tracked over exposed soils. If equipment access is required in this area it should follow specification in Appendix C.

New Path South of Main Building

Tree 274 is a London planetree (*Platanus x acerifolia*) in good health and structural condition that is in close proximity to path renovations. Based on the plans the path location is moving to the west through a grove of pines. Tree 274 could be retained if the existing hardscape is carefully removed. It should be removed from north to south and immediately covered with 4 to 6 inches of woodchips to protect the soil from compaction and desiccation or damage to any roots that were exposed.

Tree Protection

To safely preserve trees throughout development, we recommend a Tree Protection Zone (TPZ) of 1 foot for every 1 inch of trunk diameter. Alternative TPZ's can be determined by an International Society of Arboriculture certified arborist on a case-by-case basis if the above recommendations cannot be met due to site constraints.

Recommendations

- Establish a TPZ around retained trees at 1 foot for every 1 inch of trunk diameter.
 - Provide Tree Solutions with final construction plans to reassess tree retention and protection.
- Follow tree protection standards as stated in SMC 20.50.370 and in the attached Appendix C.
- All pruning should be conducted by an ISA certified arborist and following ANSI A300 specifications (ASC 300 2017, Part 1).
- Consider transplanting small diameter trees to new locations wherever feasible.
- N 155th St.
 - Limit over-excavation for new sidewalk and slope stabilization methods along N 155th St to support tree retention.
- Dayton Avenue – Northwestern section near bus stop
 - Consider reducing width of sidewalk to 6 feet and/or removing amenity area along Dayton Avenue north of WSDOT access road.
 - Use air excavation to excavate the limits of excavation in this area and determine if tree retention is feasible.
 - Add coarse arborist woodchip throughout entire landscaped area to improve growing conditions.
- N 160th St.
 - Consider retaining the existing landscaping along N 160th St and installing new plants around existing vegetation.
- Remove all invasive plants during development and restoration. Priority should be to remove the invasive ivy that can strangle and kill trees.

*DSH (Diameter at Standard Height) is measured 4.5 feet above grade.
DSH for multi-stem trees are noted as a single stem equivalent, which is calculated by averaging all stem measurements.
Letters are used to identify trees on neighboring property with overhanging canopies.
Dripline is measured from the center of the tree to the outermost extent of the canopy.
SMC defines a significant tree as a conifer 8 inches or greater DSH and 12 inches or greater for a non conifer.*

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
1	<i>X Cuprocypris leylandii</i>	Leyland cypress	6.2	8.5,8.3,8,5,5,4,3	Good	Good	11.3	N 155th Street	Remove	-	-	Ivy on trunk, on slope, pavement in dripline
2	<i>X Cuprocypris leylandii</i>	Leyland cypress	7.0	9,5	Fair	Good	5.3	N 155th Street	Remove	-	-	Ivy on trunk, suppressed, slope, low live crown ratio
3	<i>Picea abies</i>	Norway spruce	23.0		Good	Good	19.0	N 155th Street	Remove	-	-	Codominant at 4 ft, west trunk removed, ivy on trunk, pavement within dripline, on slope, phototropic to south
4	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.9		Good	Good	15.5	N 155th Street	Remove	-	-	On top of slope, low live crown ratio, ivy at base, potential retention
5	<i>Picea abies</i>	Norway spruce	14.0		Good	Good	16.6	N 155th Street	Remove	-	-	Ivy on trunk, phototropic to south, low live crown ratio
6	<i>Picea abies</i>	Norway spruce	23.0		Good	Good	16.0	N 155th Street	Remove	-	-	Low live crown ratio, ivy on trunk, pavement within dripline, second trunk to south
7	<i>Picea abies</i>	Norway spruce	23.0		Good	Good	19.0	N 155th Street	Remove	-	-	Ivy in canopy, dripline over pavement

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
8	<i>Picea abies</i>	Norway spruce	24.0		Good	Good	16.0	N 155th Street	Remove	—	—	Codominant at 5 feet, narrow union, large amount of ivy on trunk, dripline over pavement, pitch tube near union, measured DSH below union
9	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.0		Good	Good	18.6	N 155th Street	Remove	—	—	Ivy on trunk, large ivy, pavement under drip, phototropic to south
10	<i>Picea abies</i>	Norway spruce	15.0		Good	Fair	19.6	N 155th Street	Remove	—	—	Phototropic to south, narrow union, drip over pavement, growth deficits below union, measured below codominant at 5 feet
11	<i>Picea abies</i>	Norway spruce	13.5		Good	Good	17.6	N 155th Street	Remove	—	—	Dripline over pavement, phototropic to south, ivy at base
12	<i>Acer macrophyllum</i>	Bigleaf maple	12.0		Good	Good	32.5	N 155th Street	Remove	—	—	Ivy at base, phototropic to south, on top of slope, drip over pavement
13	<i>Pseudotsuga menziesii</i>	Douglas-fir	3.8		Good	Good	7.2	N 155th Street	Remove	—	—	11 feet from edge of road, maybe good long-term tree, edge of slope
14	<i>Picea abies</i>	Norway spruce	12.0		Good	Good	16.5	N 155th Street	Remove	—	—	Phototropic to south, ivy at base, drip over pavement
15	<i>Picea abies</i>	Norway spruce	11.3		Good	Good	16.5	N 155th Street	Remove	—	—	Phototropic to south, ivy at base
16	<i>Alnus rubra</i>	Red alder	6.0		Poor	Poor	15.3	N 155th Street	Remove	—	—	Stilted roots, one live trunk, reduce height into a snag
17	<i>Pseudotsuga menziesii</i>	Douglas-fir	1.5		Good	Good	3.6	N 155th Street	Impacted	—	—	Edge of slope, retain or transplant, 2 feet to edge of slope
18	<i>Picea abies</i>	Norway spruce	13.0		Good	Good	15.5	N 155th Street	Remove	—	—	Ivy at base, phototropic to south

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
19	<i>Picea abies</i>	Norway spruce	15.7		Good	Good	16.7	N 155th Street	Remove	—	—	Pitching on trunk, pruning wounds
20	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.9		Good	Good	17.7	N 155th Street	Remove	—	—	Ivy at base, top of slope, phototropic to south
21	<i>Picea abies</i>	Norway spruce	9.5		Good	Good	0.4	N 155th Street	Remove	—	—	Codominant at 5 feet, west stem small
22	<i>Picea abies</i>	Norway spruce	9.3		Good	Good	10.4	N 155th Street	Remove	—	—	Included bark at codominant union, ivy at base
23	<i>X Cuprocypris leylandii</i>	Leyland cypress	6.4		Good	Good	10.3	N 155th Street	Remove	—	—	Phototropic to south, ivy at base
24	<i>X Cuprocypris leylandii</i>	Leyland cypress	5.5	5,5,5,6	Good	Good	10.7	N 155th Street	Remove	—	—	Scotch broom at base
25	<i>Pseudotsuga menziesii</i>	Douglas-fir	7.0		Good	Good	10.3	N 155th Street	Impacted	—	—	Edge of slope, 10 feet to road
26	<i>Pseudotsuga menziesii</i>	Douglas-fir	12.5		Good	Good	18.5	N 155th Street	Remove	—	—	Phototropic to south
27	<i>X Cuprocypris leylandii</i>	Leyland cypress	4.5	5,4	Good	Fair	6.2	N 155th Street	Remove	—	—	Trunks wrapping around each other, included bark in union, ivy at base
28	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.8		Good	Good	8.3	N 155th Street	Impacted	—	—	Swept base, edge of slope, 12 feet from road edge
29	<i>Picea abies</i>	Norway spruce	10.2		Good	Good	14.4	N 155th Street	Remove	—	—	Codominant at 5 feet, included bark, subordinate stem to northeast to improve structure
30	<i>Picea abies</i>	Norway spruce	12.6		Good	Good	14.0	N 155th Street	Remove	—	—	Ivy at base

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
31	<i>Pseudotsuga menziesii</i>	Douglas-fir	3.8		Good	Good	5.2	N 155th Street	Remove	–	–	Edge of slope, ivy at base, 12.5 ft edge of road
32	<i>Picea abies</i>	Norway spruce	8.2		Good	Good	12.8	N 155th Street	Remove	–	–	
33	<i>Pseudotsuga menziesii</i>	Douglas-fir	12.7		Good	Good	16.5	N 155th Street	Impacted	–	–	Ivy on trunk, edge of slope, shared canopy
34	<i>Pseudotsuga menziesii</i>	Douglas-fir	9.5		Good	Good	17.4	N 155th Street	Impacted	–	–	Ivy on trunk, edge of slope, shared canopy
35	<i>Picea abies</i>	Norway spruce	12.7		Good	Good	14.5	N 155th Street	Remove	–	–	Ivy on trunk, phototropic to south
36	<i>Picea abies</i>	Norway spruce	20.9		Good	Fair	17.9	N 155th Street	Remove	–	–	Codominant at 6 feet with included bark in the union, additional codominant further up
37	<i>Pseudotsuga menziesii</i>	Douglas-fir	9.7		Good	Good	10.4	N 155th Street	Impacted	–	–	Ivy on trunk
38	<i>X Cuprocypris leylandii</i>	Leyland cypress	6.0		Good	Good	11.3	N 155th Street	Remove	–	–	Ivy on trunk
39	<i>Pseudotsuga menziesii</i>	Douglas-fir	4.7		Good	Good	4.2	N 155th Street	Remove	–	–	Low live crown ratio, ivy at base
40	<i>X Cuprocypris leylandii</i>	Leyland cypress	10.0		Good	Good	12.4	N 155th Street	Remove	–	–	Ivy on trunk
41	<i>Picea abies</i>	Norway spruce	12.1	14.2,10	Good	Good	16.5	N 155th Street	Remove	–	–	Codominant at 4 feet, good u-shaped union, ivy at base
42	<i>Picea abies</i>	Norway spruce	14.6		Good	Good	16.6	N 155th Street	Remove	–	–	Ivy at base, road in dripline, steep slope

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
43	<i>Picea abies</i>	Norway spruce	24.5		Good	Fair	18.5	N 155th Street	Remove	—	—	Large swelling around narrow union, likely codominant from base that has started to graft, ivy at base
44	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.5		Good	Good	13.6	N 155th Street	Impacted	—	—	Ivy at base, could be retained maybe, landscape fabric at base
45	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.0		Good	Good	20.8	N 155th Street	Impacted	—	—	Surface roots, canopy raised, spruce roots growing over fir roots
46	<i>Picea abies</i>	Norway spruce	15.2		Good	Good	13.6	N 155th Street	Remove	—	—	Blackberry at base, roots growing over tree 45 roots
47	<i>Picea abies</i>	Norway spruce	6.4		Good	Good	7.3	N 155th Street	Remove	—	—	Swept base, suppressed
48	<i>Picea abies</i>	Norway spruce	8.5		Good	Good	7.4	N 155th Street	Remove	—	—	Suppressed
49	<i>Picea abies</i>	Norway spruce	24.5		Good	Fair	16.0	N 155th Street	Remove	—	—	Codominant, crack in union, maybe movement between union, pitching, measured at narrowest point below union
50	<i>Picea abies</i>	Norway spruce	23.9		Good	Fair	14.0	N 155th Street	Remove	—	—	Measured at narrowest point below union, growth deficit under codominant union, pitching on trunk, surface roots, landscape fabric at base
51	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.5		Good	Good	15.9	N 155th Street	Impacted	—	—	Ivy on trunk
52	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.5		Good	Good	13.6	N 155th Street	Impacted	—	—	Ivy on trunk
53	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.5		Good	Good	12.3	N 155th Street	Impacted	—	—	Swept base to northeast away from tree 52, ivy at base

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
54	<i>Pseudotsuga menziesii</i>	Douglas-fir	12.0		Good	Good	12.5	N 155th Street	Impacted	–	–	Ivy at base, nearby light pole
55	<i>Pseudotsuga menziesii</i>	Douglas-fir	12.3		Good	Good	14.5	N 155th Street	Impacted	–	–	Ivy at base
56	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.8		Good	Good	17.7	N 155th Street	Impacted	–	–	Shared canopy with 57, ivy on trunk
57	<i>Thuja plicata</i>	Western redcedar	5.0		Good	Good	6.2	N 155th Street	Retain	–	–	Shared canopy with 56, shared roots, ivy on trunk
58	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.3		Good	Good	12.5	N 155th Street	Retain	–	–	Stilted roots, ivy at base, surface roots
59	<i>Pseudotsuga menziesii</i>	Douglas-fir	13.2		Good	Good	14.6	N 155th Street	Retain	–	–	Swept base, surface roots, ivy at base
60	<i>Pseudotsuga menziesii</i>	Douglas-fir	13.1		Good	Good	12.5	N 155th Street	Retain	–	–	Swelling at 2 feet, ivy on trunk, stilted roots
61	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.0		Good	Good	14.6	N 155th Street	Impacted	–	–	Stilted roots, ivy at base
62	<i>Pseudotsuga menziesii</i>	Douglas-fir	12.7		Good	Good	11.5	N 155th Street	Retain	–	–	Ivy at base
63	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.8		Good	Good	15.7	N 155th Street	Impacted	–	–	Ivy at base
64	<i>Arbutus menziesii</i>	Pacific madrone	2.3		Good	Good	6.1	N 155th Street	Retain	–	–	Phototropic to north
65	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.0		Good	Good	10.6	N 155th Street	Retain	–	–	Ivy at base

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
66	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.7		Good	Good	15.7	N 155th Street	Retain	–	–	Ivy at base
67	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.0		Good	Good	10.5	N 155th Street	Impacted	–	–	Ivy at base
68	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.7		Good	Good	14.7	N 155th Street	Impacted	–	–	Ivy at base
69	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.0		Good	Good	16.6	N 155th Street	Impacted	–	–	Ivy at base
70	<i>Pseudotsuga menziesii</i>	Douglas-fir	13.9		Good	Good	11.6	N 155th Street	Impacted	–	–	Ivy at base
71	<i>Pseudotsuga menziesii</i>	Douglas-fir	18.8		Good	Good	12.8	N 155th Street	Impacted	–	–	Ivy at base
72	<i>Pseudotsuga menziesii</i>	Douglas-fir	13.0		Good	Good	9.5	N 155th Street	Impacted	–	–	Ivy at base, low live crown ratio
73	<i>Pseudotsuga menziesii</i>	Douglas-fir	18.0		Good	Good	14.8	N 155th Street	Impacted	–	–	Ivy on trunk
74	<i>Pseudotsuga menziesii</i>	Douglas-fir	12.9		Good	Fair	11.5	N 155th Street	Impacted	–	–	Spiral swelling maybe from tree stake
75	<i>Alnus rubra</i>	Red alder	8.8	8.5,8,10	Good	Fair	18.4	N 155th Street	Remove	–	–	Multistem at base, ivy at base
76	<i>Pseudotsuga menziesii</i>	Douglas-fir	18.8		Good	Good	15.8	N 155th Street	Impacted	–	–	Ivy on trunk, at edge of retaining wall
77	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.3		Good	Good	17.7	Dayton Ave N	Impacted	Retain	Retain	Concrete at base

Why? All work appears to be outside critical root area

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
78	<i>X Cuprocypris leylandii</i>	Leyland cypress	3.2	2,4,4,3,3	Good	Fair	9.1	Dayton Ave N	Impacted	Retain	Retain	Survey location wrong, dense canopy,
79	<i>Thuja plicata</i>	Western redcedar	5.0	6,4	Good	Good	8.2	Dayton Ave N	Impacted	Retain	Retain	Suppressed, codominant at 4 feet
80	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.2		Good	Fair	22.8	Dayton Ave N	Remove	Impacted	Impacted	Some pitching on trunk, previously broken top
81	<i>Pseudotsuga menziesii</i>	Douglas-fir	24.4	19.3,29.5	Good	Good	21.5	Dayton Ave N	Remove	Remove	Remove	Codominant at base, good union, buried root flare
82	<i>Pseudotsuga menziesii</i>	Douglas-fir	10.6		Good	Good	11.9	Dayton Ave N	Remove	Retain	Retain	Phototropic to east
83	<i>Pseudotsuga menziesii</i>	Douglas-fir	9.2		Good	Good	11.4	Dayton Ave N	Impacted	Retain	Retain	Suppressed, not on survey, fence in trunk
84	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.0		Good	Good	9.2	Dayton Ave N	Impacted	Retain	Retain	Suppressed
85	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.0		Good	Good	9.3	Dayton Ave N	Impacted	Retain	Retain	Suppressed
86	<i>Pseudotsuga menziesii</i>	Douglas-fir	9.1	14.2,4	Good	Good	16.4	Dayton Ave N	Impacted	Retain	Retain	Codominant, narrow union
87	<i>Pseudotsuga menziesii</i>	Douglas-fir	4.5		Good	Good	7.2	Dayton Ave N	Impacted	Retain	Retain	Suppressed
88	<i>Pseudotsuga menziesii</i>	Douglas-fir	4.0		Good	Good	4.2	Dayton Ave N	Impacted	Retain	Retain	Suppressed
89	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.5		Good	Good	5.3	Dayton Ave N	Impacted	Retain	Retain	Suppressed

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
90	<i>Pseudotsuga menziesii</i>	Douglas-fir	7.6		Good	Good	10.3	Dayton Ave N	Impacted	Retain	Retain	Suppressed
91	<i>Pseudotsuga menziesii</i>	Douglas-fir	3.5		Good	Good	11.1	Dayton Ave N	Remove	Retain	Retain	Suppressed,
92	<i>Arbutus menziesii</i>	Pacific madrone	1.7		Good	Good	7.1	Dayton Ave N	Impacted	Retain	Retain	Lean to the east
93	<i>Pseudotsuga menziesii</i>	Douglas-fir	29.8		Good	Good	17.2	Dayton Ave N	Remove	Remove	Remove	Save tree sign on it, large root flare to west
94	<i>Pseudotsuga menziesii</i>	Douglas-fir	3.7		Good	Good	9.2	Dayton Ave N	Remove	Retain	Retain	Suppressed
95	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.0		Good	Good	6.2	Dayton Ave N	Impacted	Retain	Retain	Suppressed
96	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.2		Fair	Fair	14.6	Dayton Ave N	Remove	Remove	Impacted	Pitch tubes, burls, lost top, <i>Fomitopsis cajanderi</i>
97	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.4		Good	Good	13.9	Dayton Ave N	Remove	Remove	Impacted	Lean to w
98	<i>Pseudotsuga menziesii</i>	Douglas-fir	31.7		Good	Good	24.3	Dayton Ave N	Remove	Remove	Remove	Sign on tree, near bus stop and compacted soil
99	<i>Arbutus menziesii</i>	Pacific madrone	5.5	7.5,3.5	Good	Fair	13.2	Dayton Ave N	Remove	Retain	Retain	Codominant at 2 ft, old branch tear outs, lean to w
100	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.0		Good	Good	12.8	Dayton Ave N	Remove	Remove	Remove	
101	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.3		Good	Good	7.3	Dayton Ave N	Remove	Retain	Retain	Suppressed

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
102	<i>Pseudotsuga menziesii</i>	Douglas-fir	10.0		Good	Good	10.4	Dayton Ave N	Remove	Retain	Retain	Suppressed
103	<i>Pseudotsuga menziesii</i>	Douglas-fir	13.5		Good	Fair	14.6	Dayton Ave N	Remove	Remove	Remove	Pitch tubes, previously broken top, leader correcting
104	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.0		Good	Good	12.8	Dayton Ave N	Remove	Remove	Remove	Rootzone has compacted pavement, bus stop
105	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.8		Good	Good	8.2	Dayton Ave N	Remove	Retain	Retain	Canopy low down
106	<i>Pinus monticola</i>	Western white pine	30.9		Good	Good	12.3	Dayton Ave N	Remove	Remove	Remove	Sign on tree, very close to compacted soil from bus
107	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.2		Good	Good	16.9	Dayton Ave N	Remove	Remove	Remove	Save tree sign
108	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.0		Fair	Fair	12.6	Dayton Ave N	Remove	Remove	Remove	Pitching on trunk, buried root flare, broken top
109	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.8		Good	Good	12.2	Dayton Ave N	Remove	Retain	Retain	Suppressed
110	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.2		Good	Good	10.3	Dayton Ave N	Remove	Retain	Retain	Suppressed
111	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.0		Good	Good	11.2	Dayton Ave N	Remove	Retain	Retain	Suppressed
112	<i>Pseudotsuga menziesii</i>	Douglas-fir	21.8		Good	Fair	16.9	Dayton Ave N	Remove	Remove	Remove	Save tree sign, compacted pavement in drip, broken top
113	<i>Pseudotsuga menziesii</i>	Douglas-fir	36.0		Excellent	Good	19.5	Dayton Ave N	Remove	Remove	Remove	Large root flare, dominant tree, high priority tree

Why? All work is outside critical root area

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
114	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.9		Fair	Fair	15.5	Dayton Ave N	Remove	Remove	Remove	Lean to west, broken top
115	<i>Pinus monticola</i>	Western white pine	44.6		Good	Fair	14.9	Dayton Ave N	Remove	Remove	Remove	Included bark in codominant trunks, western trunk starting to lean, good response wood, union looks ok but there are large portions above junction which could make it worse, eastern trunk has considerable dieback, which is naturally subordinating
116	<i>Pseudotsuga menziesii</i>	Douglas-fir	7.1		Good	Good	9.3	Dayton Ave N	Remove	Impacted	Retain	Suppressed
117	<i>Pseudotsuga menziesii</i>	Douglas-fir	10.0		Good	Good	10.4	Dayton Ave N	Remove	Retain	Retain	Suppressed
118	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.4		Good	Good	15.6	Dayton Ave N	Remove	Retain	Retain	Suppressed,
119	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.0		Good	Good	20.8	Dayton Ave N	Remove	Remove	Remove	Wavy at base
120	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.5		Good	Good	11.7	Dayton Ave N	Remove	Impacted	Retain	
121	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.6		Good	Good	12.2	Dayton Ave N	Remove	Retain	Retain	Suppressed
122	<i>Pinus monticola</i>	Western white pine	8.3		Good	Good	14.3	Dayton Ave N	Remove	Remove	Impacted	Suppressed
123	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.7		Good	Fair	20.7	Dayton Ave N	Remove	Impacted	Retain	Fence enveloped in trunk, cut away fence if retained
124	<i>Pinus monticola</i>	Western white pine	8.0		Good	Good	11.3	Dayton Ave N	Remove	Impacted	Retain	Fence enveloped in trunk

Why? All work outside critical root area

Why? All work outside critical root area

Could these be saved with the use of permeable pavement or some other measure?

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
125	<i>Pseudotsuga menziesii</i>	Douglas-fir	23.2		Good	Fair	18.0	Dayton Ave N	Remove	Remove	Remove	Previously broken top, with new leader overcorrected
126	<i>Thuja plicata</i>	Western redcedar	26.5		Good	Good	17.1	Dayton Ave N	Remove	Remove	Remove	Near compacted gravel
127	<i>Pinus monticola</i>	Western white pine	39.0		Good	Good	17.6	Dayton Ave N	Remove	Remove	Remove	Sign on tree, compacted gravel only a couple ft from tree
128	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.9		Good	Fair	12.7	Dayton Ave N	Remove	Remove	Remove	Shared canopy with 129, broken top
129	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.0		Good	Good	13.9	Dayton Ave N	Remove	Remove	Remove	Shared canopy with 128, save tree sign, close to road
130	<i>Pinus monticola</i>	Western white pine	28.8		Good	Good	17.2	Dayton Ave N	Remove	Remove	Remove	Dieback on low branches, buried root flare
131	<i>Pseudotsuga menziesii</i>	Douglas-fir	25.0		Good	Good	15.0	Dayton Ave N	Remove	Remove	Remove	Buried root flare, near pavement
132	<i>Pseudotsuga menziesii</i>	Douglas-fir	39.2		Good	Good	26.6	Dayton Ave N	Remove	Remove	Remove	Buried root flare, near pavement
133	<i>Thuja plicata</i>	Western redcedar	9.5		Good	Good	12.4	Dayton Ave N	Remove	Impacted	Retain	Close to fence on east side
134	<i>Pseudotsuga menziesii</i>	Douglas-fir	23.4		Good	Good	21.0	Dayton Ave N	Remove	Remove	Remove	Lean to s, slow growth at base,
135	<i>Thuja plicata</i>	Western redcedar	12.2		Good	Good	18.5	Dayton Ave N	Remove	Remove	Remove	Slightly suppressed, truck or bus damage on low branches
136	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.4		Good	Good	15.6	Dayton Ave N	Remove	Remove	Remove	Suppressed

Could these be saved with the use of permeable pavement or some other measure?

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
137	<i>Pseudotsuga menziesii</i>	Douglas-fir	25.7		Good	Good	18.1	Dayton Ave N	Remove	Remove	Remove	Close to fire hydrant
138	<i>Pseudotsuga menziesii</i>	Douglas-fir	23.0		Good	Good	17.0	Dayton Ave N	Remove	Remove	Remove	Close to fire hydrant
139	<i>Pseudotsuga menziesii</i>	Douglas-fir	7.0		Good	Good	8.3	Dayton Ave N	Remove	Impacted	Retain	
140	<i>Pseudotsuga menziesii</i>	Douglas-fir	38.5		Excellent	Good	18.6	Dayton Ave N	Remove	Remove	Remove	14 feet from fog line, unlikely retention
141	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.1		Good	Good	16.6	Dayton Ave N	Remove	Remove	Remove	Only one tree at location
142	<i>Pseudotsuga menziesii</i>	Douglas-fir	13.5		Good	Good	11.6	Dayton Ave N	Remove	Remove	Remove	Very close to pavement
143	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.7	10.7,18.7	Good	Good	16.6	Dayton Ave N	Remove	Remove	Remove	Trees have two symbols in this area
144	<i>Pseudotsuga menziesii</i>	Douglas-fir	21.0		Good	Good	13.9	Dayton Ave N	Remove	Remove	Remove	
145	<i>Pinus monticola</i>	Western white pine	32.3		Good	Good	23.3	Dayton Ave N	Remove	Remove	Remove	Girdling root on west side, much of rootzone paved, lower branch dieback
146	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.0		Good	Good	22.9	Dayton Ave N	Remove	Remove	Remove	Lots of pavement in rootzone, surface roots
147	<i>Chamaecyparis lawsoniana</i>	Lawson's cypress	7.8	7.2,6,10.3	Good	Good	8.3	Dayton Ave N	Remove	Remove	Remove	Surface roots, included bark in unions at base
148	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.9		Good	Good	14.6		Remove	_	_	Surface roots, shallow pavement raising near path
149	<i>Pinus nigra</i>	Austrian black pine	18.0		Good	Good	15.8		Retain	_	_	Surface roots, compacted soil lots of chlorotic needles

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
150	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.6		Good	Good	12.7		Impacted	—	—	Surface roots, pavement raising
151	<i>Pinus nigra</i>	Austrian black pine	22.0		Fair	Good	16.9		Retain	—	—	Surface roots, girdling roots, needle dieback, frass, pitch tubes
152	<i>Pinus nigra</i>	Austrian black pine	18.0		Good	Good	14.8		Retain	—	—	Surface roots
153	<i>Pinus nigra</i>	Austrian black pine	19.0		Good	Good	15.8		Retain	—	—	Surface roots, kinked top
154	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.0		Good	Good	14.7		Retain	—	—	Surface roots
155	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.5		Good	Good	12.7		Remove	—	—	Surface roots, pavement lifting
156	<i>Pinus contorta var. latifolia</i>	Lodgepole pine	14.4		Fair	Good	13.6	Dayton Ave N	Retain	Retain	Retain	Surface roots
157	<i>Picea abies</i>	Norway spruce	4.0	4.5,3,4	Good	Fair	6.2	Dayton Ave N	Remove	Remove	Remove	
158	<i>Thuja plicata</i>	Western redcedar	7.8	7.5,8.1	Good	Fair	10.3	Dayton Ave N	Remove	Retain	Retain	Codominant at 3 ft, included bark
159	<i>Picea abies</i>	Norway spruce	6.2	6.2,6.2	Good	Good	10.3	Dayton Ave N	Remove	Retain	Retain	Limbed up
160	<i>Chamaecyparis lawsoniana</i>	Lawson's cypress	8.7		Good	Good	7.4	Dayton Ave N	Remove	Impacted	Retain	
161	<i>Picea abies</i>	Norway spruce	7.5		Fair	Fair	8.3	Dayton Ave N	Remove	Impacted	Retain	Measure at narrowest point below union
162	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.2		Good	Good	9.3	Dayton Ave N	Remove	Retain	Retain	Suppressed
163	<i>Thuja plicata</i>	Western redcedar	3.3	4,5,3,3,3,2	Poor	Fair	10.1	Dayton Ave N	Remove	Impacted	Retain	60 to 70 percent dieback

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
164	<i>Arbutus menziesii</i>	Pacific madrone	8.8		Good	Good	11.4	Dayton Ave N	Remove	Retain	Retain	Phototropic to east
165	<i>Thuja plicata</i>	Western redcedar	5.8	4,6,7	Good	Good	7.2	Dayton Ave N	Remove	Retain	Retain	Suppressed
166	<i>Picea abies</i>	Norway spruce	8.2		Fair	Fair	8.3	Dayton Ave N	Remove	Retain	Retain	Broken top, dieback
167	<i>Arbutus menziesii</i>	Pacific madrone	19.7		Good	Good	25.8	Dayton Ave N	Remove	Impacted	Retain	Lean to east, small bit of decay
168	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.4		Good	Good	8.3	Dayton Ave N	Remove	Impacted	Retain	
169	<i>Pseudotsuga menziesii</i>	Douglas-fir	19.5		Good	Good	15.8	Dayton Ave N	Remove	Impacted	Impacted	Top of slope, canopy to east
170	<i>X Cuprocypris leylandii</i>	Leyland cypress	3.4	4,5,6,5,4,3,2,2,2,2	Good	Fair	10.1	Dayton Ave N	Remove	Retain	Retain	Minor dieback
171	<i>X Cuprocypris leylandii</i>	Leyland cypress	4.7	6,4,4	Good	Fair	8.2	Dayton Ave N	Remove	Retain	Retain	Minor dieback
172	<i>Pseudotsuga menziesii</i>	Douglas-fir	8.8		Good	Good	6.4	Dayton Ave N	Impacted	Retain	Retain	Suppressed
173	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.0		Good	Good	10.2	Dayton Ave N	Remove	Retain	Retain	Suppressed
174	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.5		Good	Good	8.2	Dayton Ave N	Remove	Retain	Retain	Suppressed
175	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.5		Good	Good	15.7	Dayton Ave N	Impacted	Impacted	Retain	

All work outside of critical root area ,why is this shown as impacted?

All work outside of critical root area ,why is this shown as impacted?

Table of Trees
15700 Dayton Ave N
Shoreline, WA 98133

Arborist: JP + KH
Date of Inventory: 01.02.2020
Table Prepared: 01.14.2020

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
176	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.5		Good	Good	9.6	Dayton Ave N	Remove	Impacted	Retain	Some branches trying to assume dominance
177	<i>Pseudotsuga menziesii</i>	Douglas-fir	10.5		Good	Good	9.4	Dayton Ave N	Impacted	Retain	Retain	Suppressed
178	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.8		Good	Good	11.7	Dayton Ave N	Impacted	Retain	Retain	
179	<i>Pseudotsuga menziesii</i>	Douglas-fir	18.2		Good	Good	14.8	Dayton Ave N	Impacted	Impacted	Retain	Pitch on trunk , canopy to east
180	<i>Thuja plicata</i>	Western redcedar	7.0	9,5	Fair	Good	9.3	Dayton Ave N	Impacted	Retain	Retain	Codominant at base, thin top
181	<i>Thuja plicata</i>	Western redcedar	7.8		Fair	Good	7.3	Dayton Ave N	Impacted	Retain	Retain	Thin top
182	<i>Thuja plicata</i>	Western redcedar	4.0	5,4,3	Fair	Good	8.2	Dayton Ave N	Remove	Retain	Retain	Lots of dieback
183	<i>Thuja plicata</i>	Western redcedar	5.5	5,6	Good	Fair	7.2	Dayton Ave N	Remove	Retain	Retain	Narrow unions
184	<i>Pseudotsuga menziesii</i>	Douglas-fir	10.0	10.7,9.3	Good	Good	11.4	Dayton Ave N	Retain	Retain	Retain	Codominant at base, narrow union, suppressed
185	<i>Pseudotsuga menziesii</i>	Douglas-fir	14.2		Good	Good	12.6	Dayton Ave N	Retain	Retain	Retain	Broken top, corrected
186	<i>Pseudotsuga menziesii</i>	Douglas-fir	13.0		Good	Good	11.5	Dayton Ave N	Retain	Retain	Retain	
187	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.6	10.8,13,11	Good	Good	15.5	Dayton Ave N	Retain	Retain	Retain	Multistem at base

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
188	<i>Picea abies</i>	Norway spruce	11.0		Poor	Fair	9.5	Dayton Ave N	Remove	Retain	Retain	Broken top, low vigor, measured at narrowest point below union
189	<i>Picea abies</i>	Norway spruce	10.0	10,10	Fair	Fair	14.4	Dayton Ave N	Remove	Retain	Retain	Broken top, new leaders, ivy at base, codominant
190	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.5		Good	Good	12.7	Dayton Ave N	Remove	Impacted	Retain	Codominant at 15 ft, ok union, surface roots,
191	<i>Picea abies</i>	Norway spruce	5.7	8,5,4	Fair	Fair	8.2	Dayton Ave N	Remove	Retain	Retain	Measured at narrowest point below union
192	<i>Pseudotsuga menziesii</i>	Douglas-fir	9.5		Good	Good	12.4	Dayton Ave N	Remove	Retain	Retain	Ivy on trunk
193	<i>Picea abies</i>	Norway spruce	10.2		Poor	Fair	10.4	Dayton Ave N	Remove	Retain	Retain	Broken top, new leaders, narrow
194	<i>Picea abies</i>	Norway spruce	5.5	6,5	Good	Fair	10.2	Dayton Ave N	Remove	Retain	Retain	Broken top, new leaders, narrow
195	<i>Picea abies</i>	Norway spruce	7.5	5,10	Good	Fair	15.3	Dayton Ave N	Remove	Retain	Retain	Broken top, new leaders, narrow, ivy on trunk
196	<i>Picea abies</i>	Norway spruce	20.0		Good	Fair	18.8	Dayton Ave N	Remove	Impacted	Retain	Broken top, new leaders, narrow unions, ivy on trunk
197	<i>Pseudotsuga menziesii</i>	Douglas-fir	7.5		Good	Good	10.3	Dayton Ave N	Remove	Retain	Retain	Suppressed
198	<i>Thuja plicata</i>	Western redcedar	6.8		Good	Fair	11.3	Dayton Ave N	Remove	Retain	Retain	Broken top, suppressed
199	<i>Picea abies</i>	Norway spruce	8.4		Good	Fair	10.4	Dayton Ave N	Remove	Retain	Retain	Broken top, suppressed

If amenity zone is sloped at 3:1 could the tree be retained in scenario 1?

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
200	<i>Picea abies</i>	Norway spruce	5.0		Good	Fair	8.2	Dayton Ave N	Remove	Retain	Retain	Broken top, suppressed
201	<i>Thuja plicata</i>	Western redcedar	5.0	4.5,5.5	Good	Good	8.2	Dayton Ave N	Impacted	Retain	Retain	Measured at narrowest point below union
202	<i>Picea abies</i>	Norway spruce	6.9		Good	Fair	7.3	Dayton Ave N	Impacted	Retain	Retain	Topped
203	<i>Thuja plicata</i>	Western redcedar	5.4	5.1,5.7	Fair	Fair	8.2	Dayton Ave N	Impacted	Retain	Retain	Topped
204	<i>Thuja plicata</i>	Western redcedar	5.2	5.8, 4.9, 5	Good	Fair	7.2	Dayton Ave N	Retain	Retain	Retain	Topped
205	<i>Thuja plicata</i>	Western redcedar	5.4		Good	Fair	7.7	Dayton Ave N	Retain	Retain	Retain	Topped
206	<i>Thuja plicata</i>	Western redcedar	9.8		Good	Fair	7.4	Dayton Ave N	Retain	Retain	Retain	Topped
207	<i>Pseudotsuga menziesii</i>	Douglas-fir	4.0		Good	Good	5.2	Dayton Ave N	Impacted	Retain	Retain	Low live crown ratio, suppressed
208	<i>Pseudotsuga menziesii</i>	Douglas-fir	5.8	6.5,5	Good	Good	12.2	Dayton Ave N	Impacted	Retain	Retain	Low live crown ratio, codom, suppressed
209	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.4		Good	Good	17.1	Dayton Ave N	Retain	Retain	Retain	Surface roots, phototropic south, trunk sprouts
210	<i>Pseudotsuga menziesii</i>	Douglas-fir	19.2		Good	Good	17.8	Dayton Ave N	Impacted	Impacted	Impacted	
211	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.6		Good	Good	18.7	Dayton Ave N	Remove	Remove	Remove	Canopy overhangs sidewalk, surface roots, add mulch, retention feasible

Could these all be saved with permeable pavement or another measure? Sidewalk is higher than existing grades.

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH (inches)	Health	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
212	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.1				13.3	Dayton Ave N	Remove	Remove	Remove	Major surface roots, air excavation line to explore
213	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.5		Good	Good	11.7	Dayton Ave N	Remove	Remove	Remove	Buried trunk, roots within work zone, retention unlikely
214	<i>Pseudotsuga menziesii</i>	Douglas-fir	23.5		Good	Good	18.5	Dayton Ave N	Remove	Remove	Remove	Surface roots, dominant tree, 2 roots toward SW, retention difficult, reduce SW to 6 ft
215	<i>Pinus contorta var. contorta</i>	Shore pine	13.3		Good	Good	12.6	Dayton Ave N	Retain	Retain	Retain	Low branches dieback, possible fair health, no major surface roots, retention feasible
216	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.2		Good	Good	18.3	Dayton Ave N	Retain	Retain	Retain	Surface roots spanning to SW, retention ok with root management
217	<i>Pseudotsuga menziesii</i>	Douglas-fir	32.3		Good	Fair	19.8	Dayton Ave N	Remove	Remove	Remove	Large codominant at base with narrow angle, diameter at narrowest point below union, large surface roots, retention difficult if cuts made
218	<i>Pinus contorta var. contorta</i>	Shore pine	17.2		Good	Good	12.7	Dayton Ave N	Remove	Remove	Remove	Lower branch dieback, lower retention value, close to SW, no visible roots
219	<i>Pinus contorta var. contorta</i>	Shore pine	14.4		Good	Good	11.6	Dayton Ave N	Retain	Retain	Retain	Slight lean to SW corrected, low live crown ratio
220	<i>Pseudotsuga menziesii</i>	Douglas-fir	24.5		Good	Good	18.0	Dayton Ave N	Remove	Remove	Remove	Surface roots, leaning over parking lot, growing on rockery, careful root management needed, pitching north side
221	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.9		Good	Good	15.0	Dayton Ave N	Remove	Remove	Remove	Surface roots, high low crown ratio, assess retention, leave fence?
222	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.8		Good	Good	13.7	Dayton Ave N	Retain	Retain	Retain	Surface roots, trunk sprouts, assess retention, phototropic to east, leave fence ?

Could these all be saved with permeable pavement? Sidewalk is higher than existing grades.

Tree ID	Scientific Name	Common Name	DSH (inches)	DBH (inches)	Condition	Height (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
223	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.6		Good	14.2	Dayton Ave N	Remove	Remove	Remove	Surface roots, assess retention, leave fence ?
224	<i>Pseudotsuga menziesii</i>	Douglas-fir	19.1		Good	18.8	Dayton Ave N	Impacted	Impacted	Impacted	Surface roots, assess retention, leave fence ?
225	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.6		Good	15.2	Dayton Ave N	Remove	Remove	Remove	Surface roots, assess retention, leave fence ?
226	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.6		Good	14.2	Dayton Ave N	Impacted	Impacted	Impacted	Surface roots, assess retention, leave fence ?
227	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.0	14, 8	Good	15.0	Dayton Ave N	Remove	Remove	Remove	Surface roots, assess retention, codominant at base, leave fence ?
228	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.9		Good	16.7	Dayton Ave N	Impacted	Impacted	Impacted	Surface roots, assess retention, leave fence ?
229	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.1		Good	14.2	Dayton Ave N	Remove	Remove	Remove	Surface roots, assess retention, kink in trunk, leave fence ?
230	<i>Pseudotsuga menziesii</i>	Douglas-fir	17.7		Good	12.7	Dayton Ave N	Impacted	Impacted	Impacted	Surface roots, assess retention, leave fence ?
231	<i>Pseudotsuga menziesii</i>	Douglas-fir	18.6		Good	14.8	Dayton Ave N	Remove	Remove	Remove	Surface roots, assess retention, leave fence ?
232	<i>Pseudotsuga menziesii</i>	Douglas-fir	27.5		Good	20.1	Dayton Ave N	Remove	Remove	Remove	Very close to SW, retention not likely feasible, high retention value, dominant tree
233	<i>Pinus monticola</i>	Western white pine	16.3		Good	12.7	Dayton Ave N	Impacted	Impacted	Impacted	Lower branch dieback, retention may not be feasible
234	<i>Acer palmatum</i>	Japanese maple	10.1		Good	13.9		Impacted	-	-	Diameter narrowest point below union, small defect at base, clearance pruning for work

Could these all be saved with permeable pavement or another measure? Sidewalk is higher than existing grades.

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
235	<i>Acer palmatum</i>	Japanese maple	5.1	4.5, 5, 5.8, 5.4, 5.8, 4.2, 4.6	Good	Good	15.2		Remove	-	-	Possible dieback, clearance pruning needed
236	<i>Tsuga heterophylla</i>	Western hemlock	11.9		Poor	Fair	10.5		Remove	-	-	Top broken, 50 percent dead, option to shorten more, no major risk
237	<i>Acer palmatum</i>	Japanese maple	2.9	3.2, 2.8, 3, 2.5	Fair	Fair	13.1		Remove	-	-	Bark sloughing eastern stem, suppressed
238	<i>Thuja plicata</i>	Western redcedar	9.7	11.9, 8.5, 6.6, 11.8	Good	Good	13.4		Remove	-	-	
239	<i>Pseudotsuga menziesii</i>	Douglas-fir	25.8		Good	Good	19.1		Remove	-	-	Pitching, dominant tree, high retention value, next to bus stop
240	<i>Pseudotsuga menziesii</i>	Douglas-fir	24.1		Good	Good	20.0		Remove	-	-	Surface roots, thin canopy
241	<i>Thuja plicata</i>	Western redcedar	5.0		Fair	Good	9.2		Remove	-	-	Top dead, low retention value
242	<i>Pinus monticola</i>	Western white pine	6.8		Fair	Good	7.8		Remove	-	-	Thin canopy
243	<i>Pseudotsuga menziesii</i>	Douglas-fir	4.4		Good	Good	6.2		Remove	-	-	Young tree, retention feasible
244	<i>Pinus contorta</i>	Shore pine	9.7		Good	Good	7.4		Remove	-	-	Slight dieback
245	<i>Pseudotsuga menziesii</i>	Douglas-fir	24.0		Good	Good	19.0		Remove	-	-	Ivy, raised rockery, adjacent utilities
246	<i>Pseudotsuga menziesii</i>	Douglas-fir	8.5		Good	Good	12.4		Remove	-	-	Suppressed
247	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.8	17.3, 14.2	Good	Good	16.7		Impacted	-	-	Located on other side of fence
248	<i>Pseudotsuga menziesii</i>	Douglas-fir	8.5		Good	Good	8.4		Impacted	-	-	Located on other side of fence, suppressed
249	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.2		Good	Good	14.7		Impacted	-	-	Located on other side of fence, ivy
250	<i>Populus trichocarpa</i>	Black cottonwood	26.5	28, 25	Good	Fair	23.1		Remove	-	-	Located on other side of fence, ivy, weak attachments, lower retention value
251	<i>Populus trichocarpa</i>	Black cottonwood	20.2		Good	Fair	17.8		Remove	-	-	In ROW, lean north, ivy, impacts potentially high, remove
252	<i>Populus trichocarpa</i>	Black cottonwood	12.0		Good	Fair	15.5		Remove	-	-	In ROW, lean east, heavy ivy, impacts potentially high, remove

Could this be saved by using a steeper amenity zone slope or some other measure?

Why are these impacted/ remove? No grading near critical root area

252 is not in the ROW.

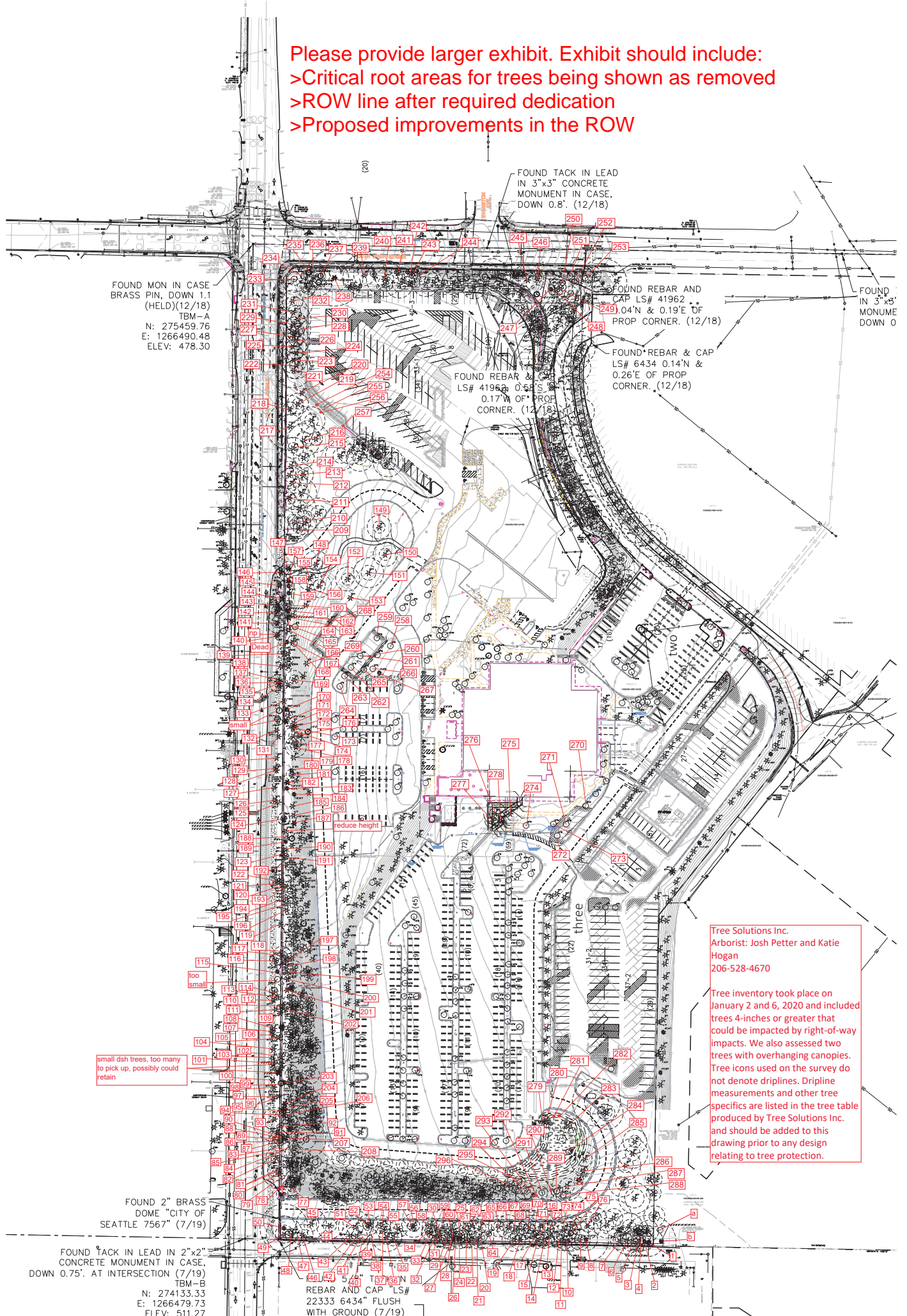
Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
253	Populus trichocarpa	Black cottonwood	14.2		Good	Fair	22.6		Remove	—	—	In ROW, lean east, heavy ivy, impacts potentially high, remove
254	<i>Thuja plicata</i>	Western redcedar	17.2		Fair	Fair	17.2		Remove	—	—	Declining top, growing into rockery, remove
255	<i>Pinus contorta</i> var. <i>contorta</i>	Shore pine	8.1		Good	Good	0.3		Remove	—	—	Canopy phototropic north, remove
256	<i>Thuja plicata</i>	Western redcedar	16.3	25.6, 6.9	Good	Good	18.7		Remove	—	—	Retention unlikely
257	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.3		Good	Good	11.5		Remove	—	—	Growing on rockery, remove
258	<i>Platanus x acerifolia</i>	London planetree	10.5		Good	Good	18.9		Impacted	—	—	Surface roots
259	<i>Platanus x acerifolia</i>	London planetree	9.7		Good	Good	13.9		Remove	—	—	Surface roots, remove
260	<i>Platanus x acerifolia</i>	London planetree	10.5		Good	Good	13.9		Remove	—	—	Surface roots
261	<i>Platanus x acerifolia</i>	London planetree	9.3		Good	Good	14.9		Remove	—	—	Surface roots, remove
262	<i>Platanus x acerifolia</i>	London planetree	9.0		Good	Good	14.4		Remove	—	—	Remove
263	<i>Prunus serrulata</i>	Flowering cherry	10.0	7.5,12.5	Good	Good	12.9		Remove	—	—	Surface roots, remove
264	<i>Prunus serrulata</i>	Flowering cherry	7.6		Good	Good	8.8		Retain	—	—	Retain
265	<i>Calocedrus decurrens</i>	Incense cedar	16.0		Good	Good	11.2		Remove	—	—	Surface roots, included bark
266	<i>Calocedrus decurrens</i>	Incense cedar	12.7		Good	Good	11.5		Impacted	—	—	Surface roots
267	<i>Calocedrus decurrens</i>	Incense cedar	7.9	7.9, 7.8	Good	Good	6.3		Remove	—	—	Corrected lean
268	<i>Pinus contorta</i> var. <i>contorta</i>	Shore pine	26.0		Good	Good	18.1		Remove	—	—	Pitch tubes, remove
269	<i>Pseudotsuga menziesii</i>	Douglas-fir	19.3		Good	Good	19.8		Retain	—	—	Retain and protect
270	<i>Platanus x acerifolia</i>	London planetree	17.3		Good	Good	19.2		Remove	—	—	Remove for parking
271	<i>Platanus x acerifolia</i>	London planetree	17.7		Good	Good	17.2		Remove	—	—	Branch tearout wounds, remove

253 is not in the ROW

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
272	<i>Platanus x acerifolia</i>	London planetree	13.1	14.2,12	Good	Good	12.5		Remove	—	—	Remove
273	<i>Platanus x acerifolia</i>	London planetree	21.7	17.3, 26	Good	Good	15.9		Remove	—	—	Remove pending grading
274	<i>Platanus x acerifolia</i>	London planetree	20.9		Good	Good	23.4		Impacted	—	—	Careful protection if existing SW removed
275	<i>Pinus nigra</i>	Austrian black pine	23.8		Good	Good	16.5		Remove	—	—	Corrected lean, compacted soils
276	<i>Pinus nigra</i>	Austrian black pine	18.5		Good	Good	18.3		Remove	—	—	Sparse canopy
277	<i>Pinus nigra</i>	Austrian black pine	11.8		Good	Fair	14.0		Remove	—	—	Codominant at 25 ft
278	<i>Pinus nigra</i>	Austrian black pine	18.6		Good	Good	23.3		Remove	—	—	All pines likely need to be removed for current location of the path, adjust SW location
279	<i>Pseudotsuga menziesii</i>	Douglas-fir	15.6		Good	Good	15.7		Remove	—	—	Remove
280	<i>Pseudotsuga menziesii</i>	Douglas-fir	10.8		Good	Good	10.5		Remove	—	—	Remove
281	<i>Thuja plicata</i>	Western redcedar	7.5		Good	Good	8.3		Remove	—	—	Remove
282	<i>Thuja plicata</i>	Western redcedar	7.0		Good	Good	8.8		Remove	—	—	Remove
283	<i>Pinus monticola</i>	Western white pine	15.0		Good	Good	14.6		Remove	—	—	Remove
284	<i>Sequoiadendron giganteum</i>	Giant sequoia	4.1		Good	Good	4.2		Remove	—	—	Transplant
285	<i>Pseudotsuga menziesii</i>	Douglas-fir	22.1		Good	Good	22.4		Remove	—	—	Assess retention based on cuts
286	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.8		Good	Good	10.0		Retain	—	—	Assess retention based on cuts
287	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.8		Good	Good	18.9		Impacted	—	—	Assess retention based on cuts, high retention value
288	<i>Alnus rubra</i>	Red alder	10.4		Good	Good	14.4		Retain	—	—	Assess retention based on cuts
289	<i>Alnus rubra</i>	Red alder	8.2		Good	Good	11.3		Retain	—	—	Assess retention based on cuts
290	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.8	6.6,7	Good	Good	6.3		Retain	—	—	Young, stay out of drip
291	<i>Alnus rubra</i>	Red alder	17.3		Fair	Fair	20.7		Retain	—	—	Assess retention based on cuts

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)	Location	Proposed Action	Scenario 1 and 2	Scenario 3	Notes
292	<i>Alnus rubra</i>	Red alder	11.5	11.2,11.8	Fair	Fair	15.5		Retain			Assess retention based on cuts
293	<i>Pseudotsuga menziesii</i>	Douglas-fir	6.1		Good	Good	5.3		Retain			Retain
294	<i>Alnus rubra</i>	Red alder	10.1		Fair	Fair	14.4		Retain			Assess retention based on cuts
295	<i>Alnus rubra</i>	Red alder	16.1		Good	Good	20.7		Remove			Assess retention based on cuts
296	<i>Pseudotsuga menziesii</i>	Douglas-fir	10.0		Good	Good	13.9		Retain			Assess retention based on cuts
Offsite Trees With Overhanging Canopies												
a	<i>Betula pendula</i>	European white birch	12.0		Good	Fair	25.5	Stand/"BLANK"	Remove/Retain/Impacted			Phototropic to the east, most canopy to east, ivy on trunk, surface roots
b	<i>X Cuprocypris leylandii</i>	Leyland cypress	10.6	15,8,8,10,12,	Good	Good	10.4	Stand/"BLANK"	Remove/Retain/Impacted			Ivy at base, road under dripline, steep slope

Please provide larger exhibit. Exhibit should include:
>Critical root areas for trees being shown as removed
>ROW line after required dedication
>Proposed improvements in the ROW



Tree Solutions Inc.
Arborist: Josh Petter and Katie Hogan
206-528-4670

Tree inventory took place on January 2 and 6, 2020 and included trees 4-inches or greater that could be impacted by right-of-way impacts. We also assessed two trees with overhanging canopies. Tree icons used on the survey do not denote driplines. Dripline measurements and other tree specifics are listed in the tree table produced by Tree Solutions Inc. and should be added to this drawing prior to any design relating to tree protection.