A.B.C Consulting Arborists LLC

Accurate *Balanced* *Certified*

Totemwood Townhomes
Short Plat
Tree Protection Plan

February 11, 2022

PREPARED FOR:

Weiming Bain
RE: 18601 35th Ave NE
Arlington, WA. 98223

PREPARED BY:

A.B.C. Consulting Arborists LLC

Daniel Maple,
Registered Consulting Arborist #627
ISA Municipal Specialist # PN-7970AM
ISA Tree Risk Assessment Qualified (TRAQ)
ISA Board Certified Master Arborist #PN-7970BM

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CONSULTING ARBORIST

Daniel J. Maple / A.B.C. Consulting Arborists, LLC
Westside (425) 999-0867 Daniel@AbcArborist.Com Eastside (509) 953-0293

Certifications

ASCA Registered Consulting Arborist (RCA)	# 627
ASCA Tree & Plant Appraisal Qualified (TPAQ)	December 7, 2024
ISA Board Certified Master Arborist	PN-7970BM
ISA Certified Arborist Municipal Specialist	PN-7970BM
ISA Tree Risk Assessment Qualified (TRAQ)	May 13, 2025
ATFS Qualified Tree Farm Inspector	# 169449
Commercial Applicator	# 92432
Commercial UAV Airman Pilot	# 4135495

ASSIGNMENT

Provide a Tree & Landscape Protection Plan per A.B.C. contract and the City of Arlington specifications, for a Short Plat.

Limitations

This report is a limited to a Visual Assessment (VA) of the site and the trees. The report is based on preliminary data and may change as the layout is finalized. It is not a risk assessment or comprehensive health assessment; it is limited to the scope of the assignment.

METHODOLOGY

To evaluate the trees, as well as to prepare this report, I drew upon my 30+ years of experience in the field of arboriculture and my formal education. I followed the protocol of the International Society of Arboriculture (ISA) and I performed my assessment using and/or considering the following Best Management Practices:

ANSI A300 Part 2 – *Soil Management a.) Modification b.) Fertilization & c.) Drainage.*
ANSI A300 Part 5 – *Managing Trees During Site Planning, Site Development, and Construction.*
ANSI A300 Part 6 – *Planting and Transplanting.*
ANSI A300 Part 8 – *Root Management.*
ANSI A300 Part 9 – *Tree Risk Assessment* (Second Edition).
ISA BMP's – *Tree Inventories* (Second Edition 2013)

Best Management Practices were developed to aid in the interpretation of professional standards and guide work practices based upon current science and technology. Using this process, I performed my assessment, which included looking at the overall health of the trees as well as the site conditions.

SITE

Parcel: 31052100201000 / 1-acre site. No environmentally sensitive issues were found using Snohomish PDS Map Portal. Soils are mostly native, uncompacted, moderate in depth and well drained. No history of windthrow, decay, or disease pockets was noted.

TREE LOCATION AND ID

20.76.120 Retention-Protection-Significant Trees (a) Deciduous 8" / Evergreen 12" or greater DBH.

We inventoried 127 trees on the site, they were tagged with aluminum tags and numbered 1-127. Upon review 24 of the evergreen trees were less than 12-inch DBH, they were removed from the inventory, leaving 103 significant trees. Refer to *Attachment 1, Site Images* for the approx. location of the trees.

TREES

There were 103 significant trees inventoried, 8 were in the ROW leaving 95 significant trees on the site. 11 were not viable for retention leaving 84 trees. 77 conflict with improvements leaving 7 proposed for retention. Refer to *Attachment 3* for a summary of the tree data.

Non-viable/Hazard Trees

There were 11 trees that were dead, dying, decayed, or had other significant defects. They are not viable for retention and will be removed.

Conflict with Improvements

There were 77 significant trees that conflicted with the proposed short plat, they are to be removed[1].

Retained Trees[2]

There were 7 trees that were viable for retention.

IMPACTS FROM PROPOSED ACTIVITY

With the installation of the TPZ fencing prior to development activity and following the measures for tree protection in Attachment 4, impacts to the retained onsite and off-site trees should be minimal.

20.76.120 (D) TREE REPLACEMENT

Any significant trees removed because their retention would unreasonably burden a development shall be replaced with five-gallon-sized native species at a ratio of three to one. If the replacement trees are to be planted on building lots, the developer shall provide adequate protection from damage during construction, or planting shall occur after construction, in which case a planting plan and security shall be provided to ensure their planting.

Inventoried	Significant	Not Viable	Trees in ROW	Significant Viable	Conflict w Improvements	Replacement Trees (Conflict x 3)
127	103	-11	-8	84	-77	77 x 3 = 231

231 5-gallon native species are required to be planted.

Replanting

Landscape Plan will be provided by: Client.

[1] Excluding those in the ROW.
[2] Based on preliminary data. Actual retention will be based on final site layout.

TREE PROTECTION ZONE (TPZ)

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and possibly die. With proper preparation, often costing little or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

The TPZ is the optimal protection zone set to preserve trees during construction. The TPZ radius generally is 8-Inches to 18-Inches of protection for every 1-Inch of DBH, based on the trees size, vigor and construction tolerances (*ANSI A300 Part 5 BMP, Matheny, Clark, 1998*).

The TPZ can usually safely be reduced by 20% as long as it does not impact the CRZ. Greater than 20% reductions may be possible, pending review, written permission, and direct over site of the work, by the Consulting Arborist.

The trees to be saved, must be protected during construction by temporary 6' tall chain-link, or like fencing, located 10' beyond the edge of the trees farthest extending limbs on all sides (dripline). The individual tree protection zones (TPZ) are 10' past the driplines of the tree(s), unless otherwise delineated by A.B.C. Consulting Arborist LLC. See **Attachment 2** for tree specific TPZ.

No irrigation lines, trenches, or other utilities shall be installed within the TPZ, without detailed written instructions and the oversite of the Consulting Arborist, to reduce the impacts to the tree roots, and construction related stressors. Cuts or fills should impact no more than 20% of a tree's root system. If topsoil is added to the root zone of a protected tree, the depth should not exceed 2 inches of a sandy loam or loamy fine sand topsoil and should not cover more than 20% of the root system.

If roots are encountered outside the TPZ during construction, they shall be cut cleanly with a saw (not ripped or torn) and covered immediately with moist soil. Noxious vegetation within the critical root zone should be removed by hand. If a proposed save tree must be impacting by grading or fills, then the tree should be re-evaluated by A.B.C. Consulting Arborist LLC to determine if the tree can be saved with mitigating measures, or if the tree should be removed.

CRITICAL ROOT ZONES (CRZ)

The CRZ is the area where the roots vital for the trees survival are located, the CRZ is generally 2/3 to ½ of the TPZ, depending on the species, size, health and vigor. At no time or for any reason shall the roots within the CRZ be impacted. See **Attachment 2** for tree specific TPZ and CRZ.

See **Attachment 3** for complete tree protection instructions.

FENCING

6’ tall chain link or 4’ construction fencing shall be installed at the outer edge of the TPZs prior to commencement of site clearing and shall remain in place for the duration of the project. When possible, it is preferred that trees be fenced as a group, rather than individuals.
At no time shall any vehicle or equipment be allowed inside TPZ.
No placing or stock-piling of any material of any kind shall be allowed inside the TPZ/Fencing.
Removal of any vegetation within the TPZ shall be done by hand. Should any disturbance be required inside the TPZ to install utilities or any other needs during the construction period, they will require project specific instructions by the Consulting Arborist and approval by the city prior to undertaking any said activity in the TPZ.

Fencing Material:
1) 6’ tall chain link panels
2) 4’ construction fencing made of polyethylene laminar safety fencing or similar material approved by the city.

ROOT PROTECTION

Any roots encountered of 1” in diameter or greater, shall be cut with loppers, pruners, reciprocal saw or like device to provide a clean smooth cut. At no time, shall 1” or greater diameter roots be ripped or torn. *No roots over 2” shall be cut or removed without the City and/or Project Arborist approval and under the direct oversite of the Project Arborist.* Exposed roots shall be covered with wet burlap, or like item, to keep roots from drying out and shall be covered with soil as soon as reasonably possible.

Protect tree root systems from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by dewatering operations. Protect root systems from damage due to removal of adjacent trees.

SEE ATTACHMENT 4 For Complete Tree Protection Instructions.

Thank you for contacting A.B.C. Consulting Arborists LLC for your arboricultural needs.

Sincerely,

Daniel Maple, Consulting Arborist

Registered Consulting Arborist #627
ISA Municipal Specialist #PN-7970AM
ISA Tree Risk Assessment Qualified (TRAQ)
ISA Board Certified Master Arborist #PN-7970BM

ASSUMPTIONS & LIMITING CONDITIONS

1. A field examination of the site was made for this report (date referenced in report.) Care has been taken to obtain all information from reliable sources in a timely fashion. Therefor all data has been verified to the best of my knowledge, the certified/consulting arborist can neither guarantee or be held responsible for the accuracy of information provided by any outside sources.

2. Any and all information provided in this report covers only the tree's that were examined and reflects the condition of those tree(s) at the time of inspection. This inspection is limited to a visual method of the trees in question, excluding any core sampling, probing, dissection, aerial inspection, or excavation unless noted in writing and contingent upon the appropriate fee being authorized in writing. There is no guarantee nor warranty, expressed or implied that any deficiencies or problems of the mentioned trees may not arise in the future.

3. All drawings, sketches, and photographs submitted with this report, are intended as visual aids only, and are not exact to scale. They should not be construed as engineering or architectural report of surveys unless noted and specified.

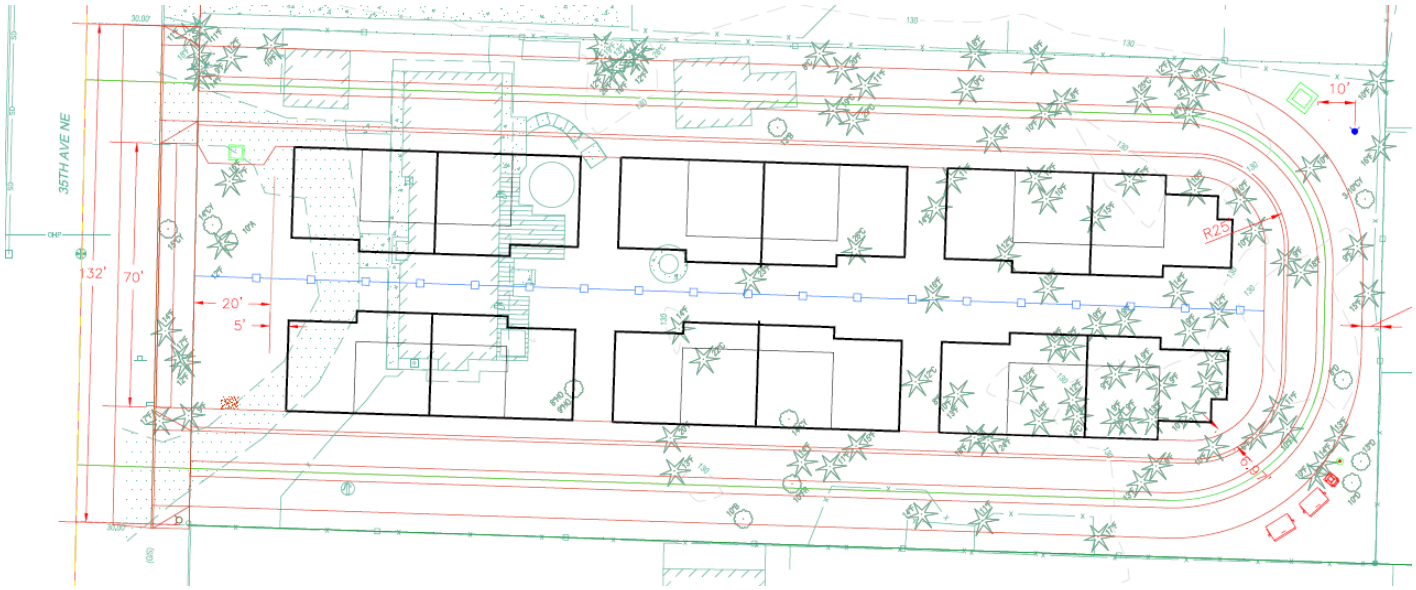
4. The certified arborist/consulting arborist is not required to give any testimony or to attend court for any reason considering this report unless subsequent contractual agreements are made.

5. Any alterations made to this report or loss automatically invalidates this report.

7. The report and values/opinions expressed, represent the opinion of the certified/consulting arborist, and the arborist fees are in no way contingent upon reporting any specified values, stipulated results, the occurrence of a subsequent event, nor upon finding to be reported.

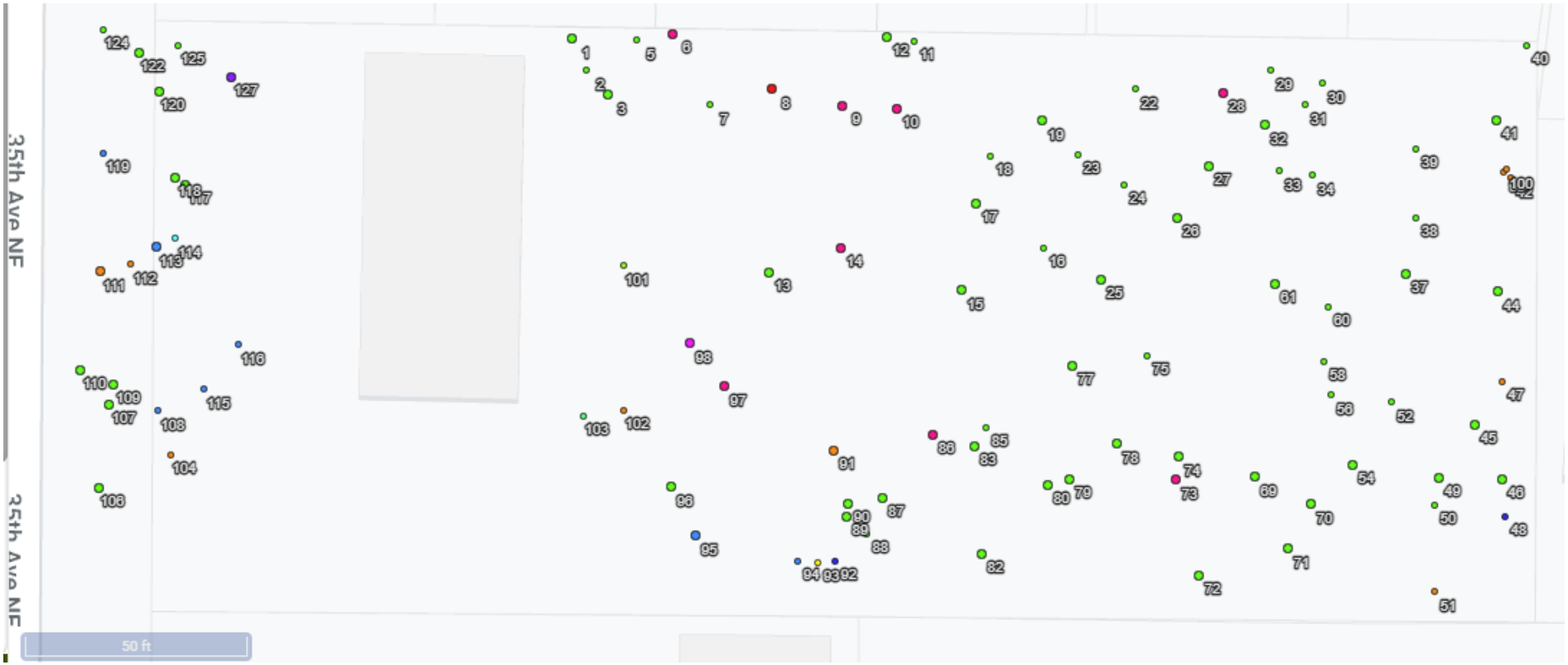
ATTACHMENTS

Conceptual Plan



ATTACHMENT 1 - SITE IMAGES

Significant Trees

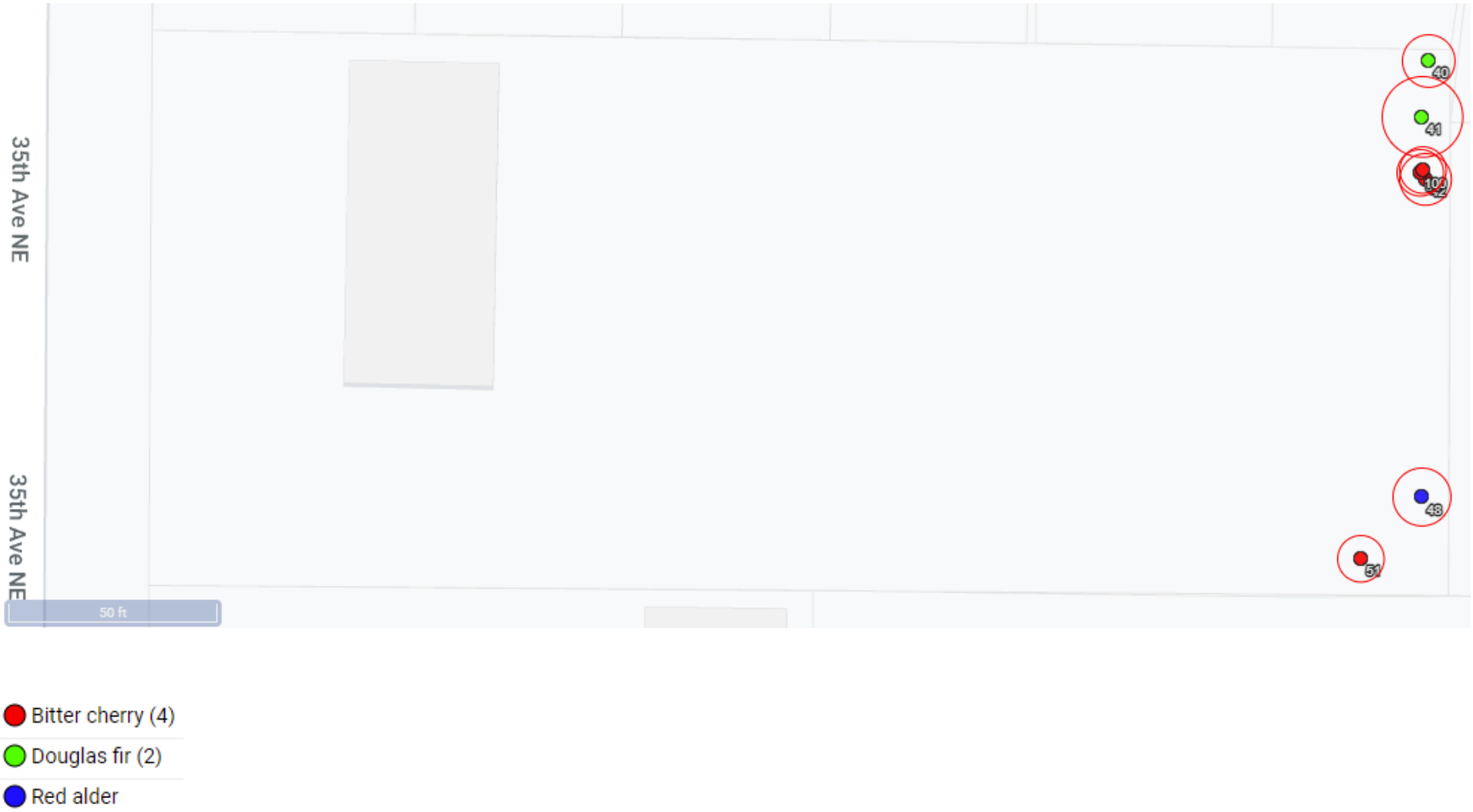


- Birch
- Bitter cherry (10)
- Black cottonwood
- Deciduous Small
- Douglas fir (69)
- English holly
- Pacific dogwood
- Quaking aspen (7)
- Red alder (2)
- Scouler's willow
- Western hemlock
- Western red cedar (8)

Retained Trees / TPZ

- Bitter cherry (4)
- Douglas fir (2)
- Red alder

Retained Trees / CRZ



Use the above maps along with the Retained Tree Summary and TPZ/CRZ Found in Attachment 2

ATTACHMENT 2 - TREE SUMMARY/TPZ/CRZ

Significant Trees

ID	Common	*Latin*	DBH	Health	Development	TPZ-Radius [ft]	CRZ - Radius [ft]
1	Douglas fir	*Pseudotsuga menziesii*	21.4	Good (80+)	R-Viable	21.4	10.7
2	Douglas fir	*Pseudotsuga menziesii*	12.6	Good (80+)	Conflict w/ plans	12.6	6.3
3	Douglas fir	*Pseudotsuga menziesii*	28.8	Good (80+)	Conflict w/ plans	28.8	14.4
5	Douglas fir	*Pseudotsuga menziesii*	14.7	Good (80+)	R-Viable	14.7	7.35
6	Western red cedar	*Thuja plicata*	31.4	Good (80+)	R-Viable	31.4	15.7
7	Douglas fir	*Pseudotsuga menziesii*	13.6	Fair (70+)	Conflict w/ plans	13.6	6.8
8	Birch	*Betula species*	16	Fair (70+)	Conflict w/ plans	16	8
9	Western red cedar	*Thuja plicata*	24.4	Good (80+)	Conflict w/ plans	24.4	12.2
10	Western red cedar	*Thuja plicata*	31	Good (80+)	Conflict w/ plans	31	15.5
11	Douglas fir	*Pseudotsuga menziesii*	13.7	Fair (70+)	R-Viable	13.7	6.85
12	Douglas fir	*Pseudotsuga menziesii*	21.9	Good (80+)	R-Viable	21.9	10.95
13	Douglas fir	*Pseudotsuga menziesii*	21.5	Excellent (90+)	Conflict w/ plans	21.5	10.75
14	Western red cedar	*Thuja plicata*	27	Fair (70+)	Conflict w/ plans	27	13.5
15	Douglas fir	*Pseudotsuga menziesii*	17.4	Fair (70+)	Conflict w/ plans	17.4	8.7
16	Douglas fir	*Pseudotsuga menziesii*	14	Good (80+)	Conflict w/ plans	14	7
17	Douglas fir	*Pseudotsuga menziesii*	16.4	Good (80+)	Conflict w/ plans	16.4	8.2
18	Douglas fir	*Pseudotsuga menziesii*	14	Fair (70+)	Conflict w/ plans	14	7
19	Douglas fir	*Pseudotsuga menziesii*	15	Fair (70+)	Conflict w/ plans	15	7.5
22	Douglas fir	*Pseudotsuga menziesii*	12.5	Fair (70+)	Conflict w/ plans	12.5	6.25
23	Douglas fir	*Pseudotsuga menziesii*	13	Good (80+)	Conflict w/ plans	13	6.5
24	Douglas fir	*Pseudotsuga menziesii*	12	Good (80+)	Conflict w/ plans	12	6
25	Douglas fir	*Pseudotsuga menziesii*	17.5		Conflict w/ plans	17.5	8.75
26	Douglas fir	*Pseudotsuga menziesii*	16.4	Good (80+)	Conflict w/ plans	16.4	8.2
27	Douglas fir	*Pseudotsuga menziesii*	19.8	Good (80+)	Conflict w/ plans	19.8	9.9
28	Western red cedar	*Thuja plicata*	28	Good (80+)	Conflict w/ plans	28	14
29	Douglas fir	*Pseudotsuga menziesii*	12.7	Fair (70+)	Not Viable	12.7	6.35
30	Douglas fir	*Pseudotsuga menziesii*	12.7	Fair (70+)	Not Viable	12.7	6.35
31	Douglas fir	*Pseudotsuga menziesii*	13.2	Fair (70+)	Conflict w/ plans	13.2	6.6
32	Douglas fir	*Pseudotsuga menziesii*	15.3	Good (80+)	Conflict w/ plans	15.3	7.65
33	Douglas fir	*Pseudotsuga menziesii*	13.3	Good (80+)	Conflict w/ plans	13.3	6.65
34	Douglas fir	*Pseudotsuga menziesii*	12.8	Good (80+)	Conflict w/ plans	12.8	6.4
37	Douglas fir	*Pseudotsuga menziesii*	19.5	Good (80+)	Conflict w/ plans	19.5	9.75
38	Douglas fir	*Pseudotsuga menziesii*	13	Dead (0)	Not Viable	13	6.5
39	Douglas fir	*Pseudotsuga menziesii*	12.3	Good (80+)	Conflict w/ plans	12.3	6.15
40	Douglas fir	*Pseudotsuga menziesii*	12.7	Good (80+)	R-Viable	12.7	6.35
41	Douglas fir	*Pseudotsuga menziesii*	19.5	Good (80+)	R-Viable	19.5	9.75
42	Bitter cherry	*Cerasus amarum*	10	Fair (70+)	R-Viable	12.5	6.25
44	Douglas fir	*Pseudotsuga menziesii*	18.1	Dead (0)	Not Viable	18.1	9.05
45	Douglas fir	*Pseudotsuga menziesii*	16.4	Fair (70+)	Conflict w/ plans	16.4	8.2

46	Douglas fir	*Pseudotsuga menziesii*	16	Good (80+)	R-Viable	16	8
47	Bitter cherry	*Cerasus amarum*	9	Fair (70+)	R-Viable	11.25	5.625
48	Red alder	*Alnus rubra*	11.2	Fair (70+)	R-Viable	14	7
49	Douglas fir	*Pseudotsuga menziesii*	17.5	Dead (0)	Not Viable	17.5	8.75
50	Douglas fir	*Pseudotsuga menziesii*	14	Poor (50+)	Not Viable	14	7
51	Bitter cherry	*Cerasus amarum*	9	Good (80+)	R-Viable	11.25	5.625
52	Douglas fir	*Pseudotsuga menziesii*	12.4		Conflict w/ plans	12.4	6.2
54	Douglas fir	*Pseudotsuga menziesii*	20	Good (80+)	Conflict w/ plans	20	10
56	Douglas fir	*Pseudotsuga menziesii*	12.4	Fair (70+)	Conflict w/ plans	12.4	6.2
58	Douglas fir	*Pseudotsuga menziesii*	13	Good (80+)	Conflict w/ plans	13	6.5
60	Douglas fir	*Pseudotsuga menziesii*	14.5	Good (80+)	Conflict w/ plans	14.5	7.25
61	Douglas fir	*Pseudotsuga menziesii*	15.6	Good (80+)	Conflict w/ plans	15.6	7.8
69	Douglas fir	*Pseudotsuga menziesii*	16.5	Good (80+)	Conflict w/ plans	16.5	8.25
70	Douglas fir	*Pseudotsuga menziesii*	36.88	Excellent (90+)	Conflict w/ plans	36.88	18.44
71	Douglas fir	*Pseudotsuga menziesii*	15	Good (80+)	Conflict w/ plans	15	7.5
72	Douglas fir	*Pseudotsuga menziesii*	19	Good (80+)	Conflict w/ plans	19	9.5
73	Western red cedar	*Thuja plicata*	15	Good (80+)	Conflict w/ plans	15	7.5
74	Douglas fir	*Pseudotsuga menziesii*	15	Good (80+)	Conflict w/ plans	15	7.5
75	Douglas fir	*Pseudotsuga menziesii*	13.3	Good (80+)	Conflict w/ plans	13.3	6.65
77	Douglas fir	*Pseudotsuga menziesii*	24.4	Good (80+)	Conflict w/ plans	24.4	12.2
78	Douglas fir	*Pseudotsuga menziesii*	16.2	Good (80+)	Conflict w/ plans	16.2	8.1
79	Douglas fir	*Pseudotsuga menziesii*	26	Good (80+)	Conflict w/ plans	26	13
80	Douglas fir	*Pseudotsuga menziesii*	19.5	Good (80+)	Conflict w/ plans	19.5	9.75
82	Douglas fir	*Pseudotsuga menziesii*	15.6	Fair (70+)	Conflict w/ plans	15.6	7.8
83	Douglas fir	*Pseudotsuga menziesii*	17.4	Good (80+)	Conflict w/ plans	17.4	8.7
85	Douglas fir	*Pseudotsuga menziesii*	13.3	Fair (70+)	Conflict w/ plans	13.3	6.65
86	Western red cedar	*Thuja plicata*	15	Good (80+)	Conflict w/ plans	15	7.5
87	Douglas fir	*Pseudotsuga menziesii*	17.5	Good (80+)	Conflict w/ plans	17.5	8.75
88	Douglas fir	*Pseudotsuga menziesii*	12.7	Good (80+)	Conflict w/ plans	12.7	6.35
89	Douglas fir	*Pseudotsuga menziesii*	16	Good (80+)	Conflict w/ plans	16	8
90	Douglas fir	*Pseudotsuga menziesii*	15	Good (80+)	Conflict w/ plans	15	7.5
91	Bitter cherry	*Cerasus amarum*	16.5	Good (80+)	Conflict w/ plans	20.625	10.3125
92	Red alder	*Alnus rubra*	10.8	Fair (70+)	Conflict w/ plans	13.5	6.75
93	Black cottonwood	*Populus trichocarpa*	8.3	Poor (50+)	Conflict w/ plans	6.225	3.1125
94	Quaking aspen	*Populus tremuloides*	11.4	Good (80+)	Conflict w/ plans	11.4	5.7
95	Quaking aspen	*Populus tremuloides*	15.4	Good (80+)	Conflict w/ plans	15.4	7.7
96	Douglas fir	*Pseudotsuga menziesii*	24.4	Excellent (90+)	Conflict w/ plans	24.4	12.2
97	Western red cedar	*Thuja plicata*	25.5	Fair (70+)	Conflict w/ plans	25.5	12.75
98	Western hemlock	*Tsuga heterophylla*	18	Fair (70+)	Not Viable	22.5	11.25
99	Bitter cherry	*Cerasus amarum*	9	Fair (70+)	R-Viable	11.25	5.625
100	Bitter cherry	*Cerasus amarum*	9	Fair (70+)	R-Viable	11.25	5.625
101	Deciduous Small	*Deciduous Small*	13.93	Fair (70+)	Conflict w/ plans	10.4475	5.22375

102	Bitter cherry	*Cerasus amarum*	8.4	Fair (70+)	Not Viable	10.5	5.25
103	English holly	*Ilex aquifolium*	13.09	Good (80+)	Conflict w/ plans	13.09	6.545
104	Bitter cherry	*Cerasus amarum*	11	Poor (50+)	Not Viable	13.75	6.875
106	Douglas fir	*Pseudotsuga menziesii*	16	Good (80+)	Offsite-Impacted	16	8
107	Douglas fir	*Pseudotsuga menziesii*	16	Poor (50+)	Offsite-Impacted	16	8
108	Quaking aspen	*Populus tremuloides*	9	Poor (50+)	Conflict w/ plans	9	4.5
109	Douglas fir	*Pseudotsuga menziesii*	21	Good (80+)	Offsite-Impacted	21	10.5
110	Douglas fir	*Pseudotsuga menziesii*	17.7	Fair (70+)	Offsite-Impacted	17.7	8.85
111	Bitter cherry	*Cerasus amarum*	16	Poor (50+)	Not Viable	20	10
112	Bitter cherry	*Cerasus amarum*	14.6	Fair (70+)	Offsite-Impacted	18.25	9.125
113	Quaking aspen	*Populus tremuloides*	16	Good (80+)	Conflict w/ plans	16	8
114	Pacific dogwood	*Cornus nuttallii*	10	Fair (70+)	Conflict w/ plans	7.5	3.75
115	Quaking aspen	*Populus tremuloides*	8.3	Good (80+)	Conflict w/ plans	8.3	4.15
116	Quaking aspen	*Populus tremuloides*	11.64	Good (80+)	Conflict w/ plans	11.64	5.82
117	Douglas fir	*Pseudotsuga menziesii*	19.3	Good (80+)	R-Viable	19.3	9.65
118	Douglas fir	*Pseudotsuga menziesii*	18	Good (80+)	R-Viable	18	9
119	Quaking aspen	*Populus tremuloides*	8.5	Good (80+)	Offsite- Assess	8.5	4.25
120	Douglas fir	*Pseudotsuga menziesii*	15.1	Good (80+)	R-Viable	15.1	7.55
122	Douglas fir	*Pseudotsuga menziesii*	20	Good (80+)	Offsite-Impacted	20	10
124	Douglas fir	*Pseudotsuga menziesii*	12	Fair (70+)	Offsite- Assess	12	6
125	Douglas fir	*Pseudotsuga menziesii*	12	Fair (70+)	R-Viable	12	6
127	Scouler willow	*Salix scouleriana*	15	Poor (50+)	Not Viable	11.25	5.625

Retained Trees / TPZ /CRZ

ID	Common	*Latin*	DBH	Health	Proposed	TPZ-Radius [ft]	CRZ - Radius [ft]	Fencing / Material
40	Douglas fir	*Pseudotsuga menziesii*	12.7	Good (80+)	R-Viable	12.7	6.35	4’ Construction /6’ Chain link
41	Douglas fir	*Pseudotsuga menziesii*	19.5	Good (80+)	R-Viable	19.5	9.75	4’ Construction /6’ Chain link
42	Bitter cherry	*Cerasus amarum*	10	Fair (70+)	R-Viable	12.5	6.25	4’ Construction /6’ Chain link
48	Red alder	*Alnus rubra*	11.2	Fair (70+)	R-Viable	14	7	4’ Construction /6’ Chain link
51	Bitter cherry	*Cerasus amarum*	9	Good (80+)	R-Viable	11.25	5.625	4’ Construction /6’ Chain link
99	Bitter cherry	*Cerasus amarum*	9	Fair (70+)	R-Viable	11.25	5.625	4’ Construction /6’ Chain link
100	Bitter cherry	*Cerasus amarum*	9	Fair (70+)	R-Viable	11.25	5.625	4’ Construction /6’ Chain link

1) The TPZ listed shall be the TPZ that is used.
2) The TPZ can be reduced to the CRZ, unless noted otherwise, as long as the TPZ is not reduced by more than 20%.
3) This may be further reduced on a case-by-case basis, upon review, approval, and under the direct over site of A.B.C. Consulting Arborists LLC.
4) The TPZ is in RADIUS FT. Fencing shall be installed (using the noted material) along the TPZ radius, prior to any construction activity.
5) Fencing material to be used:
   A. Chain link fencing panels 6’ tall
   B. 4’ Construction fencing shall be made of polyethylene laminar safety fencing or similar material approved by the city.
6) **SEE ATTACHMENT 3 For a Complete List of Instructions.**

ATTACHMENT 3 - TREE PROTECTION

The following minimum Tree Protection Measures can be copied and introduced into all relevant documents such as site plans, permit applications and conditions of approval, and bid documents so that everyone involved is aware of the requirements.

1. Tree Protection Fencing:

   a. Tree Protection Fences will need to be placed around each tree or group of trees to be retained.

      i. Tree Protection Fences are to be placed according to the attached drawing (bottom of attachment) at a distance of not less than 5' feet outside the dripline of the tree or group of trees to be saved, **or at the designated TPZ See Attachment 2 for individual TPZ's**
      ii. Tree Protection Fences must be inspected prior to the beginning of any demolition or construction work activities.
      iii. Nothing must be parked or stored within the Tree Protection Fences—no equipment, vehicles, soil, debris, or construction supplies of any sorts.

   b. Signs:

      i. The Tree Protection Fences need to be clearly marked with the following or similar text in four inch or larger letters. Signs shall be placed every 40'.

      TREE PROTECTION FENCE DO NOT ENTER!
      DO NOT PARK OR STORE MATERIALS WITHIN THE PROTECTION AREA

      Questions contact Daniel Maple of A.B.C. Consulting Arborists LLC.
      Cell: (509) 953-0293 **Email:** Daniel@AbcArborist.Com

Signs along the TPZ may be waived at the discretion of the City and/or its officials.

2. Cement Trucks/Washout:

   a. Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the Tree Protection Fences.
   b. No waste wash out, or contaminated water shall be allowed to flow into the Tree Protection Area.

3. Canopy Pruning:

   a. The canopies of some of the trees may need to be properly pruned to allow Sight lines (vehicular), access of equipment, materials, or building and construction clearance.
   b. If so, the pruning must be done by an International Society of Arboriculture, (ISA) Certified Arborist using current industry standard pruning techniques. (ANSI A300 Pruning Standards and ANSI Z131.1 Safety Standards as well as all OSHA, WISHA, and local standards must be followed.) and under the direction of the Project Arborist.
   c. Plant debris can be chipped and utilized on site for the mulch under the trees.

5. When excavation occurs near trees that are scheduled for retention, the following procedure must be followed to protect the long-term survivability of the tree:

    a. An International Society of Arboriculture, (ISA) Certified Arborist must be working with all equipment operators.
        i. The Certified Arborist should be outfitted with an Airspade™, shovel, hand pruners, a pair of loppers, a handsaw, and a power saw (a "saws all" type reciprocating saw is recommended).
    b. The hoe must be placed to "comb" the material directly away from the trunk as opposed to cutting across the roots.
        i. Combing is the gradual excavation of the ground cover plants and soil in depths that only extend as deep as the tines of the hoe.
    c. When any roots of one-inch diameter or greater, of the tree to be retained, is struck by the equipment, the Certified Arborist should stop the equipment operator.
    d. The Certified Arborist should then excavate around the tree root by Airspade™ (recommended) or by hand/shovel and cleanly cut the tree root.
        i. The Certified Arborist should then instruct the equipment operator to continue.

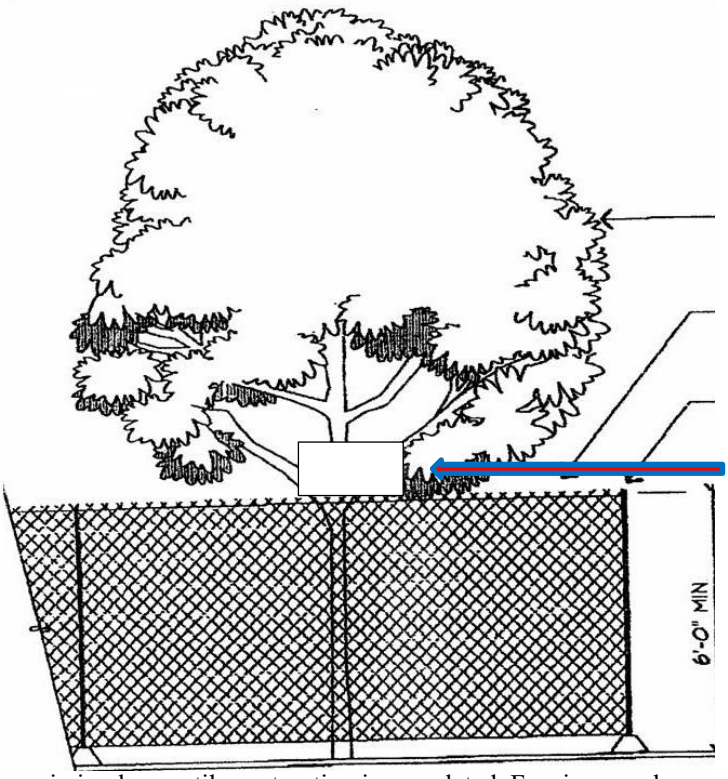
6. Putting Utilities Under the Root Zone:

    a. Boring under the root systems of trees (and other vegetation) shall be done under the supervision of an ISA Certified Arborist. This is to be accomplished by excavating a limited trench or pit on each side of the critical root zone of the tree and then hand digging or pushing the pipe through the soil under the tree. The closest pit walls shall be a minimum of 7 feet from the center of the tree and shall be sufficient depth to lay the pipe at the grade as shown on the plan and profile.
    b. Tunneling under the roots of trees shall be done under the supervision of an ISA Certified Arborist in an open trench by carefully excavating and hand digging around areas where large roots are exposed. No roots 1 inch in diameter or larger shall be cut.
    c. The contractor shall verify the vertical and horizontal location of existing utilities to avoid conflicts and maintain minimum clearances; adjustment shall be made to the grade of the new utility as required.

7. Watering:

Native trees and vegetation are naturally adapted to the local climate, supplemental watering is usually not needed for these plants, Non-native trees may require supplemental watering throughout the summer and early fall. The Project Arborist Shall periodically assess the trees, July-September, and make recommendations for supplemental watering as needed. The contractor shall be responsible for implementing the supplemental watering. Water to the sites has been shut off limiting the supplemental watering options. The Project Arborist will work with the contractor to provide reasonable recommendation for the deep root watering of the trees that need supplemental water. Methods may include the use of water bags, mulch, watering trucks or other approved methods.

    a. Water the tree to a depth of 18 to 20 inches. Once the water reaches the proper depth, turn off the hoses for four weeks and then water again. Water more often when temperatures increase— every three weeks when temperatures exceed 80 degrees and every two weeks when temperatures exceed 90 degrees. This drying out of the soil in between watering is important to prevent soil pathogens from attacking the trees.
    b. If using watering bags be sure they are installed per manufactures instructions. Check bags bi-weekly, fill with water as needed.



Farthest extending branch = Drip line
Existing Significant Tree

Continuous 6' min. chain link or like fencing. Fence post @ 10' Max O.C.

Install as shown on plans 5' min past Dripline, or per specific TPZ/CRZ instructions.

Signs installed every 20 to 25-feet
TREE PROTECTION FENCE DO NOT ENTER!
DO NOT PARK OR STORE MATERIALS WITHIN THE PROTECTION AREA

Include Arborist Contact Info.

Six-foot high temporary chain link (or like material) fencing shall be installed as shown on plans. Fencing shall be installed prior to construction activity and remain in place until construction is completed. Fencing panels are recommended. Fencing shall completely encircle the tree(s). Install fence posts using pier blocks. Avoid driving posts or stakes into major roots.

Make a clean straight cut, using loppers, reciprocal saw, or like tool, to remove damaged portion of root(s) over 1" inch diameter that are damaged during construction. **ALL** exposed roots shall be temporarily covered with damp burlap and covered with soil the same day, if possible, to prevent drying out. If not possible, the burlap must be kept moist at all times.

Work within the protection fencing shall be done manually. No stockpiling of materials, soil, debris, vehicular traffic, or storage of machinery or equipment shall be allowed within the limits of the fencing.

Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the tree protection fences, or in a manner that would allow the waste or wash out material to enter the TPZ.

If mulch is required. the area within the tree protection fencing shall be covered with wood chips, hog fuel, or similar materials, to a depth of 3 to 6 inches. The materials shall be placed prior to beginning construction and remain until the tree protection fencing is taken down. (see Attachment 5 Mulching)

Should the tree protection fencing need to be installed inside the TPZ to allow for construction activity, then the following shall be done.

1. For construction equipment, cover the area from the tree protection fencing to the outer edge of the TPZ with 8 to 10 inches of wood chips, hog fuel, or similar materials, to reduce compaction, cover area with 1" – 1.5" thick steel plates.
2. For foot traffic' cover the area from the tree protection fencing to the outer edge of the TPZ with 6 inches of wood chips, hog fuel, or similar materials, to reduce compaction, cover with ¾ inch to 1-inch plywood.
3. The steel plates, plywood and wood chips are to remain in place until all construction activity is completed. The steel plates, plywood and woodchips can then be removed and the tree protection fencing installed along the outer edge of the tree protection zone.

ATTACHMENT 4 - TREE LIST

Trees that generally perform well in the Pacific Northwest.

Native Trees	Height/Width (ft)** **CC** = 20-year sq. ft.	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Abies grandis Grand Fir	60/20 CC 350		●	●				●	●		Shady/partial sun-loving tree with glossy green needles. Does not transplant from the wild - nursery-grown only.
Acer macrophyllum Bigleaf Maple	50/30 CC 705	●		●	●		●	●			This large, fast-growing tree offers shade and important wildlife habitat. It has large, distinct leaves.
Alnus rubra Red Alder	50/20 CC 350	●			●	●	●				Feed and shelter birds with this fast-growing tree with brittle limbs and shallow, weak roots.
Arbutus menziesii Pacific madrone	35/30 CC 705	●		●	●		●	●			Only broadleaf evergreen native; difficulty in transplanting; establishes in rocky, poor soils; do not disturb if seedlings growing; gets canker
Cornus nuttallii Pacific Dogwood	50/20 CC 350	●		●	●		●	●			Susceptible to diseases, our native Dogwood provides great fall color; requires well-drained soils; beautiful flowers.
Crataegus suksdorfii douglasii Black Hawthorn	25/15 CC 180	●			●	●		●	●		This small, shrubby Hawthorn is loved by birds for food and shelter.
Fraxinus latifolia Oregon Ash	50/25 CC 500	●			●	●	●	●			Tolerates flooded wet soils for short periods.
Malus fusca Pacific Crabapple	30/20 CC 350	●			●	●	●	●			A favorite food source and nesting tree with small blooms and fruit.
Picea sitchensis Sitka Spruce	45/20 CC 350		●	●	●		●	●			Prefers moist soil to look healthiest. Varying shades of green with broad horizontal branches. Subject to Cooley spruce gall, caused by aphids.
Pinus contorta Shore Pine	40/20 CC 350		●	●			●	●		●	Grows in poor conditions where other species do not thrive. Highly desirable and easily available.
Pinus monticola Western White Pine	40/20 CC 350		●		●		●	●			Subject to Blister Rust Disease, this 5-needled Pine has blue-green foliage.
Populus trichocarpa Black Cottonwood	80/35 CC 960	●			●	●	●				Plant this fast growing, aggressively rooted tree 40 feet or more away from sidewalks, sewers, and structures. Limited use.
Prunus emarginata Bitter cherry	25/15 CC 180	●			●			●	●		Small white flowers bloom in spring. Limited quantities available from nurseries.

Native Trees	Height/Width (ft)** **CC** = 20-year sq. ft.	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	Shade	Readily Available	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Prunus virginiana Chokecherry	25/15 CC 180	●			●		●	●			Tiny white flowers; good fall color. More available than Bitter cherry.
Pseudotsuga menziesii Douglas Fir	65/25 CC 500		●		●		●	●		●	Our most common native tree. It can grow moderately to heights over 100'. Highly desirable and easily available.
Quercus garryana Oregon white oak	50/50 CC 2,000		●	●			●	●			Only native oak tree. Slow growing needs open space and well-drained soil; high wildlife value. Limited Growing Range Not Good for All Sites.
Rhamnus purshiana Cascara	30/15 CC 180	●			●		●	●			Birds enjoy the berries while the bark is used for medicinal purposes.
Salix lasiandra Pacific Willow	30/25 CC 500	●			●	●	●				Great tree for wildlife.
Salix scouleriana Scouler's Willow	30/25 CC 500	●			●		●				Great tree for wildlife. Scouler's Willow prefers dry to moist soil; not very wet.
Salix sitchensis Sitka Willow	30/25 CC 500	●			●	●	●				Great tree for wildlife
Thuja plicata Western Red Cedar	50/25 CC 500		●		●	●	●	●	●	●	For moist sunny and shaded areas, this is a useful native with graceful spreading branches. Highly desirable and easily available.
Tsuga mertensiana Mountain Hemlock	40/20 CC 350		●		●		●	●		●	Slow-growing and narrow. Prefers sun. Highly desirable and easily available.

Additionally. **Vine maple** / *Acer circinatum* 20/20 **CC** 350 **Filbert** / *Corylus cornuta var. californica* 15/15 **CC** 180

Deciduous Trees	Height/Width (ft)** CC = 20-year sq. ft.	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Acer palmatum Japanese Maple	25/25 CC 500			●	●		●		Low horizontal shape with excellent fall orange/red color. Many varieties.
Styrax japonicus Japanese Snowbell	25/25 CC 500	●		●	●		●		Fragrant flowers; often low-branched. Has a rounded form.
Tilia cordata Little-Leaf Linden	40/30 CC 705			●	●		●		Varieties have different shapes, most with yellow fall color. Leaves drop during dry Septembers.
Zelkova serrata Sawleaf Zelkova	40/38 cc 1,130			●			●		Variety Village Green has a nice vase shape and better orange/red fall color.
Cornus nuttallii Pacific Dogwood	50/20 CC 350	●		●	●		●	●	Susceptible to diseases, our native Dogwood provides great fall color; requires well-drained soils; beautiful flowers.
Crataegus suksdorfii douglasii *Black Hawthorn*	25/15 CC 180	●			●	●		●	This small, shrubby Hawthorn is loved by birds for food and shelter.
Fraxinus latifolia Oregon Ash	50/25 CC 500	●			●	●	●	●	Tolerates flooded wet soils for short periods.
Malus fusca Pacific Crabapple	30/20 CC 350	●			●	●	●	●	A favorite food source and nesting tree with small blooms and fruit.
Acer platanoides Norway Maple	Varies/25 CC 500		●	●	●		●		From narrow columnar varieties to globe and upright oval shaped, there are many form and color choices available.
Acer rubrum Red Maple	Varies/25 CC 500		●	●			●		Great fall color; tolerant of poorly drained soils. Forms narrow to oval vase shape.
Betula nigra River Birch	40/25 CC 500		●	●	●			●	This pyramidal tree has attractive yellow fall foliage.
Betula jacquemontii Jacquemontii Birch	40/30 CC 705		●	●					Bright white bark is featured on this tree.
Carpinus betulus 'Fastigiata European Hornbeam	35/25 CC 500		●	●	●		●		Once established, this tree tolerates drought well. Narrow form widens with age.
Quercus rubra Red Oak	50/45 CC 1,600			●			●		Fast-growing and wide, this tree needs space and deep, well-drained soils. Red fall color.

Deciduous Trees	Height/Width (ft)** **CC** = 20-year sq. ft.	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Cercidiphyllum japonicum Katsura Tree	40/40 CC 1,260			•	•		•		With graceful branding and heart-shaped leaves, this tree prefers rich moist (not wet) soil.
Cercis canadensis Eastern Redbud	35/25 CC 500	•		•	•		•		This small horizontal-branched tree has purple-pink flowers and yellow fall foliage.
Cornus kousa Japanese Dogwood	20/20 CC 350			•	•		•		Best in well-drained soils, this dogwood grows horizontally and has large white flowers.
Cornus mas Cornelian Cherry	25/20 CC 350			•	•		•		A little taller and oval shaped, this yellow flowering dogwood is adaptable to all soils.
Crataegus x lavallei Lavalle Hawthorne	28/20 CC 350	•		•	•		•		Has an irregular vase shape, dark green leaves, and orange fruit that hold on during early winter.
Crataegus phaenopyrum Washington Thorn	25/20 CC 350	•		•			•		A popular tree because of its white blooms, red fruit, and orange/red fall color.
Fraxinus pennsylvanica Seedless Ash	Varies/25 CC 350	•	•	•			•		Forms vary from narrow (Summit Ash) to broadly oval (Marshall Seedless Ash). Good yellow fall color.
Ginkgo biloba Maiden Hair Tree	40/15 CC 180	•		•			•		The Princeton Sentry variety is best as it is seedless and has better form.
Gleditsia triacanthos Honey Locust	45/35 CC 960	•		•	•		•		Shademaster variety has a vase shape and open upright branching; very small leaflets; yellow in fall.
Liquidambar styraciflua Sweet Gum	55/45 CC 1,600		•	•	•				Great fall color with red, orange, and purple leaves that hold until December. Palo Alto variety is preferred.
Liriodendron tulipifera Tulip Tree	60/30 CC 705			•			•		Very different from the Magnolias, this Tulip Tree has smaller yellow flowers.
Malus spp. Flowering Crabapple	20/20 CC 180	•	•	•	•		•		Crabapples are now grown for their resistance to disease and improved form. Among several good varieties are Robinson and Snowdrift.
Prunus spp. Flowering Cherry	Varies/25 CC 500			•	•		•		Sargent and Mount Fuji cherries are tougher and more disease resistant. Narrow to rounded forms; most have aggessive roots
Stewartia pseudocamellia Japanese Stewartia	30/20 CC 350	•		•	•		•		Unusual attractive peeling bark, white flowers, and yellow/red/purple fall colors make this a good garden tree.

Evergreen Trees	Height/Width (ft)** CC = 20-year sq. ft.	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Arbutus menziesii Madrone	50/30 CC 705	•		•				•	Difficult to transplant. Very susceptible to overwatering. Hard to find. Prefers sandy, dry, and sunny locations.
Calocedrus decurrens Incense Cedar	40/15 CC 180	•		•					Narrow and columnar. Very drought tolerant; native to Oregon.
Cedrus deodara Deodar Cedar	50/45 CC 1,600	•		•			•		A true "Cedar" with needles. Compare with Libani and Atlas Cedars. Trees vary from wide to very wide and need lots of room.
Chamaecyparis obtusa Hinoki Cypress	25/15 CC 180		•	•			•		Small and slow-growing. Attractive layered branching.
Chamaecyparis lawsoniana Port Orford Cypress	60/25 CC 500			•	•		•		Native to Oregon; looks similar to Western Red Cedar. Subject to root fungus problems.
Chamaecyparis nootkatensis Alaskan Yellow Cedar	60/25 CC 500			•	•		•		Narrow, graceful; often pendulous and irregular form
Cupressocyparis X. leylandii Leyland False Cypress	45/20 CC 350	•		•			•		Subject to phytothera root rot. Fast growing; dull green color.
Juniperus virginiana Eastern Red Cedar	40/20 CC 350	•		•			•		Although named Red Cedar, it is actually a narrow Juniper.
Magnolia grandiflora St. Mary's Southern Magnolia	40/25 CC 500			•			•		Small and narrow. Large glossy leaves and fragrant flowers.
Pinus nigra Austrian Black Pine	40/20 CC 350	•		•			•		Massive and dark. Susceptible to the Pine Shoot Moth.
Pinus sylvestris Scotch Pine	50/25 CC 500			•			•		The world's most common Pine. Orange to red-tinged bark.
Pinus thunbergiana Japanese Black Pine	40/25 CC 500			•			•		Graceful, informal shape.
Pseudotsuga menziesii Douglas Fir	80+/25 CC 500			•	•			•	Our most common native tree. It can grow rapidly to heights over 100'.
Sequoia sempervirens Coast Redwood	100+/40 CC 1,260			•	•		•		Requires moist soil in a large grove area; not for use as a solitary tree.

Evergreen Trees	Height/Width (ft)** **CC** = 20-year sq. ft.	Deciduous	Evergreen	Dry Soils	Moist Soils	Very Wet Soils	Sun	Partial Sun	* Consult a wetland professional before planting or disturbing vegetation in a wetland. ** Approximate size in 20 years. Actual size will vary.
Sequoiadendron gigantea Giant Sequoia	100+/45 CC 1,600			●					With ample room, this tree will form a giant cone pyramid.
Thuja plicata Western Red Cedar	80+/25 CC 500				●			●	The largest member of the Cypress family. Great for screening; grows 80- 200 feet in height and retains its lower branches. Prefers moist soils.
Tsuga heterophylla Western Hemlock	60+/20 CC 350				●	●		●	This native is harder to use than Douglas Fir or Western Red Cedar. Intolerant of full sun.
Tsuga mertensiana Mountain Hemlock	30/15 CC 180			●	●		●	●	Slow-growing and narrow. Prefers sun.
Umbellularia californica Bay Laurel	30/25 CC 500	●			●	●			Native to Oregon and California. Leaves from this tree are used in cooking.

Additionally, / Deciduous

Vine maple / *Acer circinatum* 20/20 **CC** 350

Filbert / *Corylus cornuta var. californica* 15/15 **CC** 180

ATTACHMENT 5 - MULCHING

Mulching is one of the easiest and most effective ways to improve urban soil quality entry health. Mulching is the application materials to the soil surface to improve or protect the tree and/or soil. Most materials can be organic or inorganic. When selecting mulch, organic materials are usually preferred over inorganic materials. Organic mulches moderate soil temperatures reduce soil compaction and erosion and increase soil organic matter; thereby stimulating microbial activity, soil aggregation, and nutrient availability. Inorganic mulches may be fire resistant, do not decompose, reflect, or transfer heat more readily into the soil, and tend to be more stable when exposed to high wind or flooding.

Table 2) Potential uses and limitations of typical mulches for urban trees.

Mulch	**Uses**									**Limitations**					
	Prevent compaction	Prevent erosion	Limit evaporation	Deter past	Control weeds	Promote aggregation	Increase organic matter	Increase nutrients	Expensive or limited availability	Crusting or matting	Unstable	Anaerobic soils	Salts or contaminants	Potential N immobilization	Temporary or unknown effects
Grass clippings		X				X	X	X		X	X				X
Fresh leaves		X				X	X	X			X				X
Needles		X	X			X	X	X							
Hay/straw		X	X			X	X	X						X	
*Arborist woodchips	X	X	X		X	X	X	X						X	
Bark	X	X	X	X	X	X	X	X						X	
Eucalyptus		X	X	X		X	X	X	X						
Cypress		X	X	X		X	X	X	X						
Pecan shells		X	X			X	X	X	X						
Leaf mold		X	X			X	X	X		X					
Compost		X	X			X	X	X					X		
Fabrics		X			X				X			X			
Recycled rubber	X	X		X	X				X				X		
Stone/gravel	X	X			X				X						
Black plastic		X	X		X				X			X			

*Arborist woodchips are less costly and hold up better, they are the preferred mulch, in moderate to high traffic areas.

Mulching guidelines for urban landscapes

1. Depth of mulch application is dependent upon mulch texture, density, material decomposition rate, and climate. Wooden chip mulch should be applied and maintained at depths of 3-6 inches for trees. Materials that are finer, denser, and slower to decompose should be applied at lesser depths. thicker mulch layers should be applied in arid regions to retain more water in the soil.

2. Apply a sufficiently thick layer of mulch, usually 2-4 inches, to kill existing weeds and prevent new weed seeds from germinating or reaching the soil surface. If thinner layers are applied, kill or remove weeds prior to installing mulch.

3. Do not place impervious plastic sheeting or fabric barriers under mulch. Impervious barriers stop water movement and limit incorporation of organic matter into the soil.

4. The mulch area should cover as much of the tree root zone as possible, from near the trunk to the dripline, is considered ideal.

5. For recent transplants, mulch beyond the root ball. The minimum recommended radius is 3 feet. Maintain mulch for at least three years to facilitate root growth and protect trees from mechanical damage.

6. For larger existing trees, the minimum radius for mulch is at least three times the trunk diameter.

7. Mulch applied as a continuous bed around multiple trees is more effective than single rings around individual trees.

8. Average chip size of most organic mulches should be 1-2 inch.

9. Avoid woodchips from trees that are known to have allelopathic affects (e.g., *Juglans nigra*) and from individual trees that may have soil transmittable diseases (e.g., Verticillium wilt).

On wet sites, soil drying can be promoted by removing organic mulches. Be aware of some other potential negative impacts of mulches, including: toxicity (allelopathy and “sour” anaerobic mulches with pH of <2.5), slime molds (unsightly, but mostly harmless), matting (hydrophobic layers from fungal mats and mulches), flammability, and some fungus problems (e.g., Sphaerobolus, Mutinuscaninu, and M. elegans).

ATTACHMENT 6 - ASSUMPTIONS & LIMITING CONDITIONS

1. A field examination of the site was made for this report (date referenced in report). Reasonable care has been taken to obtain information from reliable sources, however, the certified/consulting arborist cannot guarantee the accuracy or validity of information provided by any outside sources.

2. Information provided in this report covers only tree's that were indicated for examination in the assignment and reflects the apparent condition of those tree(s) at the time of inspection. This inspection is limited to a visual method of the trees in question, excluding any core sampling, probing, dissection, aerial inspection, or excavation unless noted in writing and is contingent upon the appropriate fee for such services having been authorized in writing. There is no guarantee nor warranty, expressed or implied that any problems with any trees may not arise in the future.

3. All drawings, sketches, and photographs submitted with this report, are intended as visual aids only, and are not exact to scale. They should not be construed as engineering or architectural report or surveys unless noted and specified.

4. The certified/consulting arborist is not required to give any testimony or to attend meetings or dispute resolution proceedings relating this report unless subsequent contractual arrangements and fee agreements are made.

5. Any alterations made to this report automatically invalidates this report.

7. The report and values/opinions expressed, represent the work of the certified/consulting arborist, and the arborist's fees are in no way contingent upon the reporting of any specified values, stipulated results, or occurrence of a subsequent event.

ATTACHMENT 7 - REFERENCES

1. Dirr, Michael A. *Manual of Woody Landscape Plants, Their Identification, Ornamental Characteristics, Culture, Propagation, and Uses*. Champaign: Stipes Publishing Company, 1990.

2. Dunster, Dr. Julian A., R.P.F., M.C.I.P. *Documenting Evidence, Practical Guidance for Arborists*, First Choice Books, Victoria, BC, Canada. 2014.

3. Harris, Richard W, James Clark, and Nelda Matheny. *Arboriculture, Integrated Management of Landscape Trees, Shrubs, and Vines*. 4th ed. Upper Saddle River: Prentice Hall, 2004.

4. Johnson, Warren T. and Lyon, Howard H. *Insects That Feed on Trees and Shrubs*. Ithaca: Comstock Publishing Associates, 1991.

5. Matheny, Nelda P. and Clark, James R. *Evaluation of Hazard Trees*. 2nd ed. Savoy: The International Society of Arboriculture Press, 1994.

6. Matheny, Nelda P. and Clark, James R. *Trees & Development, A Technical Guide to Preservation of Trees During Land Development*. Savoy: The International Society of Arboriculture Press, 1998.

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

8. Pacific Northwest Chapter-ISA. *Tree Risk Assessment in Urban Areas and the Urban/Rural Interface.* Course Manual. Release 1.5. PNW-ISA: Silverton, Oregon, 2011.

9. Scharpf, Robert F. *Diseases of Pacific Coast Conifers*. Albany, California: USDA Forest Service, Agriculture Handbook 521, rev. June 1993.

10. Smiley, E. Thomas, Watson, Gary, and Larry Costello, *Root Management, ANSI A300 Part 8: Tree, Shrub, and Other Woody Plant Management—Standard Practices (Root Management).* The International Society of Arboriculture Press. Champaign. IL. 2012.

11. Smiley, E. Thomas, Nelda Matheny, and Sharon Lilly, *Managing Trees During Construction, ANSI A300 Part 5: Tree, Shrub, and Other Woody Plant Management—Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, And Construction).* The International Society of Arboriculture Press. Champaign. IL. 2012.

12. Watson, Gary W., and Neely, Dan, eds. *Trees & Building Sites*. Savoy: The International Society of Arboriculture Press, 1995.