

Exhibit A5: Arborist Report



Tree Plan for SW Ibach Street Subdivision

Date: August 22, 2025

Site Address: 10150 SW Ibach Street
Tualatin, OR 97062

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Summary

Residential development is proposed at the SW Ibach Street Subdivision site. The 1.76 acre site will be developed into a 27-lot subdivision. One hundred and sixty-six (166) trees over 8-inches in diameter were inventoried onsite. One 31-inch DSH Douglas-fir (*Pseudotsuga menziesii*) can be preserved if modifications can be made to the proposed grading plan and sidewalk layout or construction approach. One hundred and sixty-five (165) trees over 8-inches in diameter and onsite are proposed for removal.

Background

The property is zoned low density residential (RL). Proposed development includes clearing the land for development and construction of a new street, sidewalks, 27 buildable lots, and associated utilities (Attachment 1). The property is in Washington County. There are no applicable insect pest quarantines or control area orders related to this project.

Assignment

The scope of work requested of our firm was:

1. Inventory and assess existing private trees over 8-inch DSH at the project site.
2. In coordination with the project team, identify the trees to be retained and removed. This may involve working with project planners, engineers, contractors, and others to identify techniques to retain trees of significance.
3. Develop a tree protection plan for the trees to be retained in accordance with the City of Tualatin Code.

Tree Inventory

The inventory was completed on May 19, 2025. A total of 204 trees on or adjacent to the areas of proposed development were inventoried (Attachments 2 and 3). Of the 204 trees, 166 are over 8-inch DSH (diameter at standard height, 4.5 feet above ground level) and on the project site. The following information was collected for each tree: tree number, common name, scientific name, DSH, single-stem DSH, approximate crown radius, health condition, structural condition, property status, pertinent comments, and treatment (Attachment 3). The tree numbers on the tree removal and preservation plan in Attachment 2 correspond to the tree numbers in the inventory in Attachment 3.

Tree Preservation

Trees 8-inches in diameter and greater are subject to tree preservation and removal requirements outlined in Tualatin Development Code Section 33.110. A Tree Preservation Plan and Tree Assessment Report prepared by a certified arborist is required with the land use application. One hundred and sixty-five (165) trees 8-inches DSH or larger and onsite are proposed for removal. One tree, tree 10102 a 31-inch DSH Douglas-fir of good health and fair structure, is proposed for preservation.

A typical minimum root protection zone allows encroachments no closer than a radius from a tree of 0.5 feet per inch of DSH if no more than 25 percent of the root protection zone area (estimated at one foot radius per inch of DSH) is impacted. Figure 1 illustrates this concept. This

standard may need to be adjusted on a case-by-case basis due to tree health, species, root distribution, whether the tree will be impacted on multiple sides, the specific development proposed, and other factors.

Attachment 2 illustrates the proposed construction impacts in relation to the existing trees. Based on the construction impacts, 165 trees over 8-inch DSH are proposed for removal because they are either within the construction footprint or their root zones would be severely impacted by construction.

Tree 10102, 31-inch DSH Douglas-fir

Tree 10102 is in the southwest corner of the subdivision within Lot 13. The tree may be compatible with development if the following modifications can be made and approved prior to development:

- *Modify the retaining wall.* A retaining wall is proposed approximately 5 feet north of the south property line and approximately 8 feet south of the trunk. Reducing the wall by 23 feet would stop the retaining wall outside of the minimum root protection zone radius of 15.5 feet.
- *Modify grading.* The existing grade around tree 10102 is between 257 FT and 253 FT. The proposed grade is between 250 FT and 251 FT, with the ground behind the retaining wall at 255 FT. This amount of cut (2 to 6 feet) needs to be limited to outside the minimum root protection zone radius of 15.5 feet.
- *Modify the sidewalk and/or paving profile.* A 6-foot-wide sidewalk is proposed 11.5 feet west of tree 10102. If the sidewalk could be curb tight for approximately 52-feet, that would reduce the level of encroachment on the west side of the tree. If a curb tight sidewalk is not an option, then a modified paving profile is recommended (Figure 2).

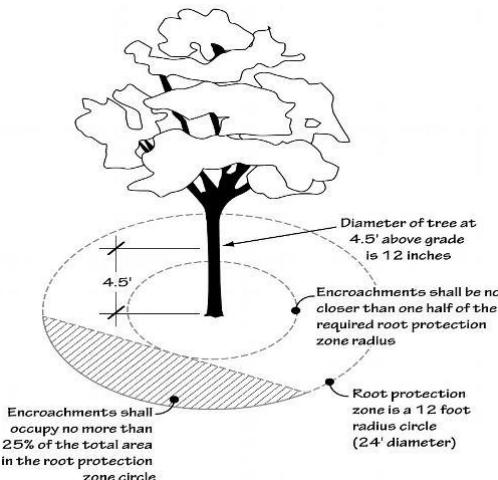


Figure 1 Typical minimum protection zone.

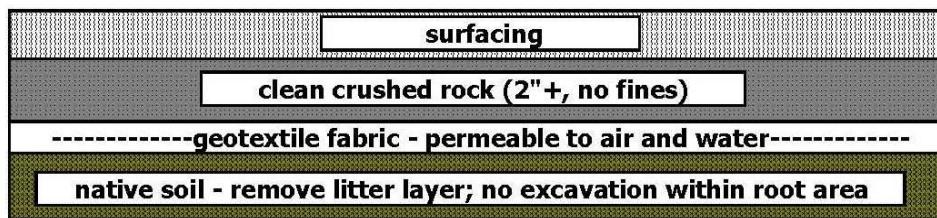


Figure 2 Sample profile for area within fenced tree protection zone. Depth of rock is dependent on grading.

If the above modifications cannot be made to the plan (either partially or completely), then the tree may not be compatible with development. The proposed modifications can reduce the impact on the tree, but it does not guarantee its survival. As currently proposed, the tree will be impacted on all sides and likely experience root loss from excavation or compaction. Post-construction treatments, such as pneumatic excavation to loosen compacted soil and applying compost and mulch may be recommended to mitigate construction impacts. Following the tree

protection plan and communicating with an arborist will be an important factor in reducing the overall impact on the tree.

Furthermore, the removal of three large-diameter trees north of tree 10102 (trees 10104, 10105, and 10107) will significantly change wind exposure for tree 10102. Specifically, tree 10102 will be more exposed to wind forces on the north side. Upon review of wind data from the Aurora State Airport (approximately 9 miles south of the site, Figure 3) and Portland Hillsboro Airport (approximately 20 miles northwest of the site, Figure 4),¹ the tree will experience sustained winds and wind gusts from the north, though winds from the south are also common.

Therefore, if tree 10102 is to be retained, it should be assessed for risk following tree removal, routinely during construction, and periodically post-construction.

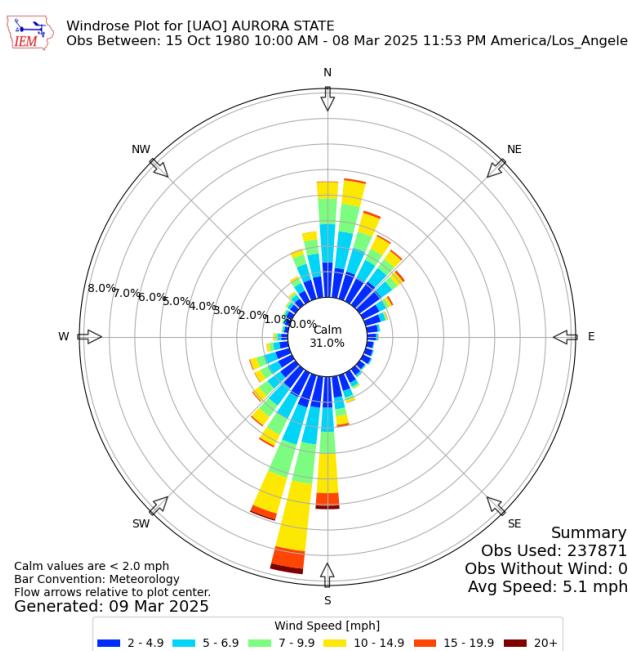


Figure 3 Windrose plot from Aurora State Airport, approximately 9 miles south of the site.

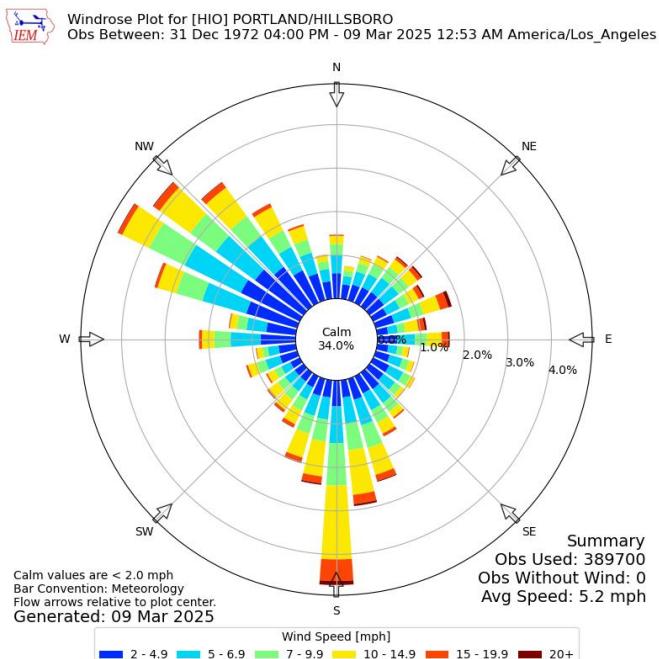


Figure 4 Windrose plot from Portland-Hillsboro Airport, approximately 20 miles northwest of the site.

¹ Windrose data was generated from the Iowa Environmental Mesonet, Aurora State Airport and Portland Hillsboro Airport, mesonet.agron.iastate.edu/sites/locate.php?network=OR_ASOS.

The following tree protection measures are recommended:

BEFORE CONSTRUCTION	<ol style="list-style-type: none">1. Install Tree Protection Fencing<ol style="list-style-type: none">a. Tree protection fencing shall be installed before any ground disturbing activities take place including demolition, clearing, grubbing or grading.<ol style="list-style-type: none">i. <i>Height</i>: Provide a minimum 6-foot-high metal fence (chain-link or chain-link panels).ii. <i>Posts & Spacing</i>: Place concrete footers or steel footers no more than 10-feet apart. Posts shall be a minimum 8-feet-tall and affixed to the ground to be immovable.iii. <i>Existing Grade</i>: Install fencing flush with the initial undisturbed grade of the protection zone.iv. <i>Locations</i>: Install fencing as shown in Attachment 2.v. <i>Signage</i>: Weatherproof tree protection signage shall be placed on tree protection fencing at intervals of every 30 feet or every third fence panel or section (Attachment 4).2. Erosion control Any required sediment fencing shall be routed outside the tree protection zones to protect the root systems of the tree to be retained. If erosion control is required within the tree protection zone, straw wattles shall be used if approved by the City of Tualatin.
DURING CONSTRUCTION	<ol style="list-style-type: none">3. Maintain Tree Protection Fencing Maintain protection fencing in good effective condition at the approved and inspected location. Fencing that is damaged during site work shall be repaired and placed in the approved location prior to resuming work in the area. Failure to maintain tree protection fencing in the approved locations may result in a code violation.4. Prevent Tree Protection Zone Impacts<ol style="list-style-type: none">a. The following activities are prohibited within a protection zone:<ol style="list-style-type: none">i. Dumping of harmful chemicals and materials, such as paints, thinners, cleaning solutions, petroleum products, concrete or dry wall excess, construction debris, or run-off;ii. Storage of materials such as building supplies, soil, rocks, or waste items;iii. Placement of portable toilets, drop-boxes, or similar temporary items;iv. Parking of vehicles or equipment; and,<p>Excavation, trenching, grading, root pruning, or similar activities unless directed by an arborist present on site.</p>5. Root Pruning The project arborist should be notified prior to the cutting of woody roots from trees that are to be retained to evaluate and oversee the proper cutting of roots with sharp cutting tools.6. Project Arborist Oversight<ol style="list-style-type: none">a. The tree protection plan proposes project arborist oversight for the following work:<ol style="list-style-type: none">i. Tree felling inside the tree protection fencing around tree 10102.ii. Excavation within a 31-foot radius of tree 10102.iii. Grading within 31-foot radius of tree 10102.<p>The project arborist will document findings for the owner.</p>7. Supplemental Watering If construction occurs during the summer months (June through September), supplemental watering is recommended (Attachment 5).8. Monitor Tree 10102 for Risk Tree 10102 should be assessed for risk using the ISA visual tree risk assessment process (level 2) after trees 10104, 10105 and 10107 are removed and throughout construction. At a minimum it should be assessed for risk every 9 months and after severe weather events, such as the January 2023 ice and windstorm. The level 2 tree risk assessment should be performed by an ISA Tree Risk Assessment Qualified arborist.

AFTER CONSTRUCTION	<p>9. Remove Tree Protection Fencing Tree protection fencing must remain in place until the final inspection.</p> <p>10. Monitoring Tree 10102 for Stress Trees are often stressed for several years post construction. If trees show signs of decline (thinning foliage, discolored foliage, stunted growth), engage with a qualified arborist to inspect the trees and recommend treatment.</p> <p>11. Monitor Tree 10102 for Risk Tree 10102 should continue to be assessed for risk after construction ends. I recommend reassessing the tree every 9 months and after severe weather events, such as the January 2023 ice and windstorm for three years post-construction and then annually thereafter for the next five years. The level 2 tree risk assessment should be performed by an ISA Tree Risk Assessment Qualified arborist.</p>
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Tree Removal

This section of the report provides findings for the Tree Assessment Report criteria in Section 33.110(4)(b) of the Tualatin Development Code. The code criteria are listed followed by my findings in *italics*.

(b) Tree Assessment Report. A tree assessment prepared by a certified arborist must include:

This report has been prepared by Christine Johnson, an ISA Board Certified Master Arborist. This criterion is met.

(i) An analysis as to whether trees proposed for preservation may be preserved in light of the development proposed, are healthy specimens, and do not pose an imminent hazard to persons or property if preserved;

The health and structural conditions of the trees to be preserved in the vicinity of the proposed development have been evaluated by our firm. A summary of the tree conditions is provided in the tree inventory in Attachment 3. The preserved tree is a healthy specimen and is not an imminent hazard to persons or property as of our assessment dates. The preserved tree will need to be protected during construction as detailed in the Tree Protection Recommendations Section of this report (above), so it remains healthy and viable for the foreseeable future. This criterion is met.

(ii) An analysis as to whether any trees proposed for removal could reasonably be preserved in light of the development proposed and health of the tree;

Our firm coordinated with the project design team at 3J Consulting to consider design options for preserving healthy trees. Based on the project design along with site constraints, stormwater requirements, utility and site access connections, parking requirements, and client needs, tree preservation has been maximized to the extent practicable. This criterion is met.

(iii) a statement addressing the approval criteria set forth in TDC 33.110(5);

The reason for the proposed tree removals is to construct proposed improvements based on Architectural Review approval (TDC Subsection 33.110(5)(iii)). This criterion is met.

(iv) the name, contact information, and signature of the arborist preparing the report; and

The name, contact information, and signature of the arborist that prepared this report is provided. This criterion is met.

(v) The tree assessment report must have been prepared and dated no more than one calendar year preceding the date the development or Tree Removal Permit application is deemed complete by the City.

This report has been prepared and provided less than one calendar year preceding the anticipated date the development application will be deemed complete. This criterion is met.

Conclusion

One hundred and sixty-six (166) trees over 8-inches in diameter are subject to tree preservation standards for the SW Ibach Street Subdivision project. One hundred and sixty-five (165) trees over 8-inches in diameter are proposed for removal to facilitate the new street, sidewalks, utilities, and prepare 27 lots for future construction. One tree, a 31-inch DSH Douglas-fir, may be compatible with tree preservation measures if grading and sidewalk modifications can be made and the tree adapts to the loss of neighboring trees to the north.

Please let me know if you have any questions about the information provided in this report.

Sincerely,

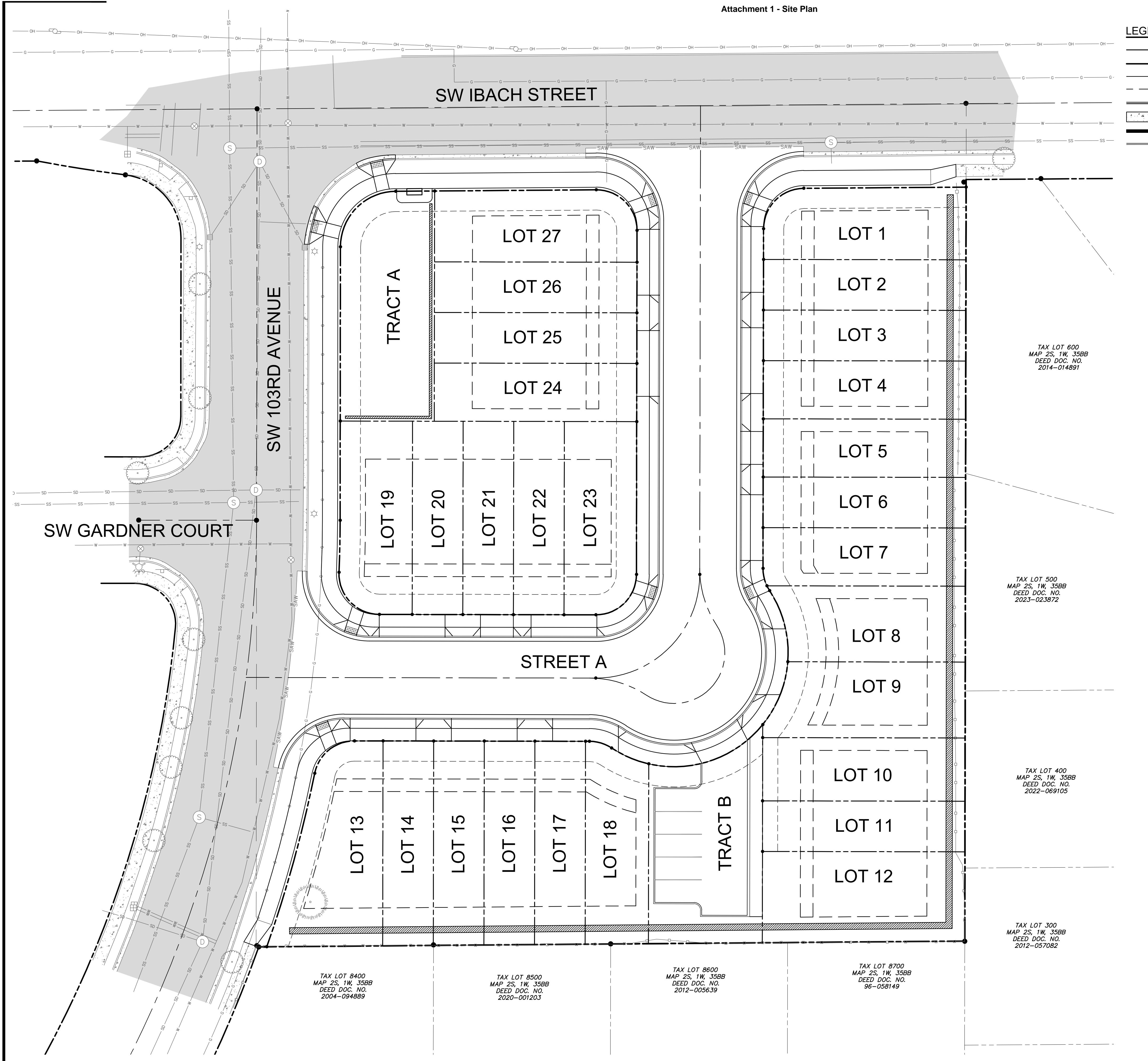


Christine Johnson

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ISA Tree Risk Assessment Qualified
ASCA Tree and Plant Appraisal Qualified
PNW ISA Wildfire Risk Reduction Qualification
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Enclosures: Attachment 1 – Site Plan
 Attachment 2 – Tree Removal and Preservation Plan
 Attachment 3 – Tree Inventory
 Attachment 4 – Tree Protection Signage
 Attachment 5 – ODF Watering Your Trees Factsheet
 Attachment 6 – Assumptions and Limiting Conditions

Attachment 1 - Site Plan



LEGEND

- PROPOSED LOT LINE
- PROPOSED RIGHT OF WAY
- PROPOSED CENTERLINE
- PROPOSED SETBACK LINE
- PROPOSED CURB AND GUTTER
- PROPOSED CONCRETE
- PROPOSED WALL
- PROPOSED STRIPING

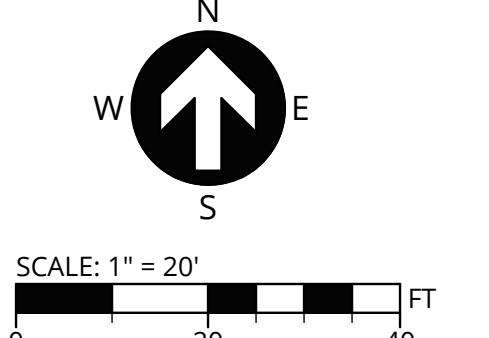
PUBLISH DATE
07/30/2025ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

SITE PLAN
SW IBACH ST
SUBDIVISION
 DEZ DEVELOPMENT LLC
 TUALATIN, OR

3J CONSULTING
 CIVIL ENGINEERING
 WATER RESOURCES
 COMMUNITY PLANNING

9600 SW NIMBUS AVE, SUITE 100, BEAVERTON, OR 97008

PROJECT INFORMATION
 3J PROJECT # 25008
 TAX LOT(S) 2S135BB02100
 LAND USE # TBD
 DESIGNED BY SRC, SKS
 CHECKED BY JJS

SHEET NUMBER
C200



Attachment 3 - Tree Inventory
10150 SW Ibach Street, Tualatin, OR 97062

Tree No	Common name	Scientific name	DSH ¹ (in)	Single Stem DSH ² (in)	C-Rad ³ (ft)	Health ⁴	Structure ⁴	Property Status	Comments	Treatment
10006	red maple	<i>Acer rubrum</i>	10	10	12	good	good	No		n/a
10055	red maple	<i>Acer rubrum</i>	11	11	12	good	good	No		n/a
10061	red maple	<i>Acer rubrum</i>	12	12	12	good	good	No		n/a
10069	red maple	<i>Acer rubrum</i>	14	14	12	good	good	No	diameter measured at 3.5'	n/a
10085	sweet cherry	<i>Prunus avium</i>	21	21	22	fair	fair	Yes	thin, asymmetrical crown, self-corrected phototropic lean	remove
10096	red alder	<i>Alnus rubra</i>	18	18	8	fair	fair	Yes	trunk cavities, thin	remove
10097	red alder	<i>Alnus rubra</i>	8	8	0	dead	dead	Yes		remove
10099	red alder	<i>Alnus rubra</i>	9	9	4	fair	poor	Yes	thin, high crown, asymmetrical crown	remove
10100	red alder	<i>Alnus rubra</i>	16	16	0	dead	dead	Yes		remove
10100.1	red alder	<i>Alnus rubra</i>	13	13	0	dead	dead	Yes	location approximated by arborist	remove
10102	Douglas-fir	<i>Pseudotsuga menziesii</i>	31	31	25	good	fair	Yes	asymmetrical crown, sweeping trunk	RETAIN
10104	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	18	12	fair	fair	Yes	thin, suppressed, asymmetrical crown, narrow crown, high crown	remove
10105	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	25	18	fair	fair	Yes	dead branches 0 to 2" diameter, asymmetrical crown, self-corrected phototropic lean	remove
10107	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	19	18	fair	fair	Yes	thin, narrow crown, trunk wound, closed trunk wound at 25'	remove
10110	bigleaf maple	<i>Acer macrophyllum</i>	21	21	20	good	fair	Yes	asymmetrical crown	remove
10111	sweet cherry	<i>Prunus avium</i>	21	21	20	fair	fair	Yes	codominant leaders, dead branches 0 to 2" diameter, trunk oddities	remove
10114	red alder	<i>Alnus rubra</i>	18, 16	24	25	good	fair	Yes	codominant leaders, asymmetrical crown, self-corrected phototropic lean	remove
10115	sweet cherry	<i>Prunus avium</i>	8	8	15	fair	fair	Yes	asymmetrical crown, suppressed, self-corrected phototropic lean	remove
10116	sweet cherry	<i>Prunus avium</i>	8	8	14	fair	fair	Yes	asymmetrical crown, self-corrected phototropic lean, suppressed	remove
10117	sweet cherry	<i>Prunus avium</i>	7	7	7	fair	fair	Yes	self-corrected phototropic lean, suppressed, high crown	n/a
10118	sweet cherry	<i>Prunus avium</i>	6	6	6	fair	fair	Yes	suppressed, self-corrected phototropic lean, high crown	n/a
10119	sweet cherry	<i>Prunus avium</i>	6	6	5	good	fair	Yes	high crown, narrow crown, self-corrected phototropic lean	n/a
10120	one seed hawthorn	<i>Crataegus monogyna</i>	11	11	15	fair	fair	Yes	epicormic branches, crossing leaders	remove
10122	bigleaf maple	<i>Acer macrophyllum</i>	9	9	15	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean	remove
10123	bigleaf maple	<i>Acer macrophyllum</i>	17	17	20	fair	fair	Yes	asymmetrical crown, high crown, trunk cavities, dead 9" leader, lacks trunk flare, cavity open but has good response	remove
10129	red maple	<i>Acer rubrum</i>	11	11	10	good	good	No		n/a
10185	eastern redbud	<i>Cercis canadensis</i>	3	3	8	fair	fair	No	thin	n/a
10220	red maple	<i>Acer rubrum</i>	11	11	10	good	good	No		n/a
10220.1	red maple	<i>Acer rubrum</i>	11	11	12	good	good	No	location approximated by arborist	n/a
10269	sweet cherry	<i>Prunus avium</i>	7	7	15	fair	fair	Yes	thin, high crown, self-corrected phototropic lean, suppressed	n/a
10270	sweet cherry	<i>Prunus avium</i>	10	10	16	good	fair	Yes	thin, asymmetrical crown, self-corrected phototropic lean	remove
10272	bigleaf maple	<i>Acer macrophyllum</i>	14, 12	18	18	good	fair	Yes	asymmetrical crown, codominant leaders with inclusion, dead branches 2 to 4" diameter	remove
10276	sweet cherry	<i>Prunus avium</i>	20	20	20	fair	fair	Yes	asymmetrical crown, suppressed, self-corrected phototropic lean	remove
10277	bigleaf maple	<i>Acer macrophyllum</i>	16	16	15	poor	very poor	Yes	suspected disease, dead and failed codominant leaders, brittle cinder fungus	remove
10279	red alder	<i>Alnus rubra</i>	8	8	7	good	fair	Yes	self-corrected phototropic lean, narrow crown	remove
10281	sweet cherry	<i>Prunus avium</i>	11	11	14	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean	remove
10286	bigleaf maple	<i>Acer macrophyllum</i>	9, 9, 8	15	16	good	fair	Yes	codominant leaders with inclusion, asymmetrical crown	remove



Attachment 3 - Tree Inventory
10150 SW Ibach Street, Tualatin, OR 97062

Tree No	Common name	Scientific name	DSH ¹ (in)	Single Stem DSH ² (in)	C-Rad ³ (ft)	Health ⁴	Structure ⁴	Property Status	Comments	Treatment
10309	bigleaf maple	<i>Acer macrophyllum</i>	36	36	20	poor	poor	Yes	diameter measured at 2', asymmetrical crown, codominant leaders with inclusion, trunk cavities, 12" diameter stem failed at base	remove
10310	bigleaf maple	<i>Acer macrophyllum</i>	12	12	10	dead	dead	Yes		remove
10312	sweet cherry	<i>Prunus avium</i>	12, 14	18	10	fair	fair	Yes	dead branches 0 to 2" diameter, thin, codominant leaders with inclusion	remove
10313	bigleaf maple	<i>Acer macrophyllum</i>	12, 9	15	15	fair	poor	Yes	codominant leaders with inclusion, trunk cavities, suspected disease, brittle cinder fungus	remove
10315	bigleaf maple	<i>Acer macrophyllum</i>	12	12	18	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean	remove
10316	sweet cherry	<i>Prunus avium</i>	13, 12	18	10	dead	dead	Yes		remove
10318	Douglas-fir	<i>Pseudotsuga menziesii</i>	27	27	25	good	fair	Yes	high crown	remove
10321	western hemlock	<i>Tsuga heterophylla</i>	14	14	10	dead	dead	Yes	failed	remove
10323	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	24	25	good	fair	Yes	high crown	remove
10326	Douglas-fir	<i>Pseudotsuga menziesii</i>	27	27	25	good	fair	Yes	high crown	remove
10328	scouler's willow	<i>Salix scouleriana</i>	13	13	10	fair	fair	yes	suppressed, self-corrected phototropic lean	remove
10397	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	8	10	good	good	in property line		remove
10525	red maple	<i>Acer rubrum</i>	11	11	8	good	good	No		n/a
10539	black cottonwood	<i>Populus trichocarpa</i>	8	8	8	fair	fair	Yes	asymmetrical crown, crooked trunk	remove
10541	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	14	15	good	good	Yes		remove
10542	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	7	8	good	fair	Yes	asymmetrical crown	n/a
10543	red alder	<i>Alnus rubra</i>	10	10	10	dead	dead	Yes		remove
10549	Scouler's willow	<i>Salix scouleriana</i>	9	9	10	good	fair	Yes	self-corrected phototropic lean	remove
10550	sweet cherry	<i>Prunus avium</i>	6	6	5	fair	fair	Yes	suppressed	n/a
10551	sweet cherry	<i>Prunus avium</i>	7	7	7	fair	fair	Yes	asymmetrical crown, suppressed, self-corrected phototropic lean	n/a
10552	bigleaf maple	<i>Acer macrophyllum</i>	14	14	15	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean	remove
10554	bigleaf maple	<i>Acer macrophyllum</i>	19, 16	25	35	good	fair	Yes	codominant leaders, asymmetrical crown	remove
10559	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	30	30	good	good	Yes		remove
10560	white poplar	<i>Populus alba</i>	12	12	8	poor	very poor	Yes	leaning trunk, high crown, thin, failed trees to either side	remove
10565	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	30	25	good	good	Yes		remove
10567	Douglas-fir	<i>Pseudotsuga menziesii</i>	27	27	25	good	good	Yes		remove
10567.1	bigleaf maple	<i>Acer macrophyllum</i>	14, 14	20	18	good	fair	Yes	codominant leaders with inclusion, location approximated by arborist	remove
10578	black cottonwood	<i>Populus trichocarpa</i>	24	24	20	good	good	Yes		remove
10583	Scouler's willow	<i>Salix scouleriana</i>	15	15	15	good	fair	Yes	codominant leaders, asymmetrical crown	remove
10584	blue spruce	<i>Picea pungens</i>	12	12	8	fair	fair	Yes	asymmetrical crown, dead branches 0 to 2" diameter, self-corrected phototropic lean	remove
10587	Scouler's willow	<i>Salix scouleriana</i>	13	13	15	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean	remove
10588	one seed hawthorn	<i>Crataegus monogyna</i>	8, 4, 4	10	10	fair	fair	Yes	multi-stem, dead branches 2 to 4" diameter, epicormic branches	remove
10588.1	one seed hawthorn	<i>Crataegus monogyna</i>	8, 2	8	4	fair	poor	Yes	thin, asymmetrical crown, suppressed, dead branches 0 to 2" diameter, multi-stem, location approximated by arborist	remove
10590	one seed hawthorn	<i>Crataegus monogyna</i>	7, 4, 2	8	4	fair	poor	Yes	multi-stem, asymmetrical crown, suppressed	remove
10591	Norway spruce	<i>Picea abies</i>	9	9	0	dead	dead	Yes		remove
10595	English walnut	<i>Juglans regia</i>	11	11	10	good	fair	Yes	dead branches 2 to 4" diameter, self-corrected phototropic lean	remove



Attachment 3 - Tree Inventory
10150 SW Ibach Street, Tualatin, OR 97062

Tree No	Common name	Scientific name	DSH ¹ (in)	Single Stem DSH ² (in)	C-Rad ³ (ft)	Health ⁴	Structure ⁴	Property Status	Comments	Treatment
10598	English walnut	<i>Juglans regia</i>	6, 4	7	7	fair	fair	Yes	asymmetrical crown, suppressed, codominant leaders, dead branches 0 to 2" diameter, thin	n/a
10601	Norway spruce	<i>Picea abies</i>	16	16	10	fair	fair	Yes	dead branches 0 to 2" diameter, codominant leaders, leaning trunk	remove
10603	European white birch	<i>Betula pendula</i>	8	8	5	poor	very poor	In property line	Snag at 10'	remove
10604	European white birch	<i>Betula pendula</i>	9	9	8	fair	fair	In property line	dying from the top down, asymmetrical crown, leaning trunk	remove
10606	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	14	12	good	fair	Yes	asymmetrical crown	remove
10608	Ponderosa pine	<i>Pinus ponderosa</i>	26	26	15	fair	fair	Yes	thin, discolored foliage, high crown	remove
10611	red alder	<i>Alnus rubra</i>	17	17	15	good	good	In property line		remove
10612	red alder	<i>Alnus rubra</i>	11	11	10	good	fair	Yes	leaning trunk, asymmetrical crown	remove
10614	European white birch	<i>Betula pendula</i>	8	8	1	dead	dead	Yes		remove
10615	European white birch	<i>Betula pendula</i>	10	10	10	fair	very poor	Yes	dying from the top down, storm damage	remove
10621	Ponderosa pine	<i>Pinus ponderosa</i>	13	13	8	very poor	very poor	Yes	high crown, thin, 10 % live crown	remove
10624	sweet cherry	<i>Prunus avium</i>	9, 7	11	8	poor	very poor	Yes	multi-stem, thin, asymmetrical crown, suppressed, high crown, narrow crown	remove
10625	sweet cherry	<i>Prunus avium</i>	6	6	3	poor	very poor	Yes	asymmetrical crown, suppressed, narrow crown, high crown	n/a
10626	sweet cherry	<i>Prunus avium</i>	6	6	5	poor	very poor	Yes	thin, asymmetrical crown, suppressed, high crown, narrow crown	n/a
10628	sweet cherry	<i>Prunus avium</i>	10	10	10	poor	poor	Yes	asymmetrical crown, suppressed, dead branches 0 to 2" diameter, thin	remove
10630	Ponderosa pine	<i>Pinus ponderosa</i>	19	19	10	very poor	very poor	Yes	thin, discolored foliage, leaning trunk, codominant leaders, 15% live crown	remove
10632	sweet cherry	<i>Prunus avium</i>	9	9	10	good	fair	Yes	self-corrected phototropic lean	remove
10635	European white birch	<i>Betula pendula</i>	8	8	8	fair	very poor	Yes	self-corrected phototropic lean, narrow crown, topped for utilities	remove
10637	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	14	12	good	fair	Yes	self-corrected phototropic lean	remove
10637.1	Ponderosa pine	<i>Pinus ponderosa</i>	19	19	16	good	fair	Yes	codominant leaders, high crown, location approximated by arborist	remove
10641	sweet cherry	<i>Prunus avium</i>	7	7	7	fair	fair	Yes	high crown, narrow crown	n/a
10642	sweet cherry	<i>Prunus avium</i>	6	6	6	fair	fair	Yes	thin, suppressed, self-corrected phototropic lean	n/a
10643	sweet cherry	<i>Prunus avium</i>	7	7	8	fair	fair	Yes	suppressed, high crown, narrow crown, choked by ivy	n/a
10645	sweet cherry	<i>Prunus avium</i>	8, 6	10	8	fair	fair	Yes	codominant leaders, suppressed, high crown, choked by ivy	remove
10646	sweet cherry	<i>Prunus avium</i>	7	7	5	fair	poor	Yes	suppressed, self-corrected phototropic lean, choked by ivy, narrow crown	n/a
10647	sweet cherry	<i>Prunus avium</i>	8	8	6	fair	poor	Yes	thin, suppressed, high crown, narrow crown, choked by ivy	remove
10648	sweet cherry	<i>Prunus avium</i>	8, 6	10	10	fair	fair	Yes	codominant leaders, suppressed, self-corrected phototropic lean, choked by ivy	remove
10649	sweet cherry	<i>Prunus avium</i>	11	11	10	poor	poor	Yes	suppressed, high crown, choked by ivy	remove
10650	sweet cherry	<i>Prunus avium</i>	7	7	6	very poor	very poor	Yes	thin, suppressed, choked by ivy	n/a
10651	sweet cherry	<i>Prunus avium</i>	8	8	5	poor	poor	Yes	thin, suppressed, high crown, choked by ivy	remove
10654	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	8	8	good	good	Yes		remove
10659	sweet cherry	<i>Prunus avium</i>	16, 12, 9	22	12	fair	fair	Yes	multi-stem, thin, choked by ivy	remove
10660	sweet cherry	<i>Prunus avium</i>	8	8	4	poor	poor	Yes	thin, suppressed, high crown, choked by ivy, narrow crown	remove
10661	sweet cherry	<i>Prunus avium</i>	13, 7	15	8	poor	poor	Yes	codominant leaders, suppressed, high crown, choked by ivy	remove
10662	sweet cherry	<i>Prunus avium</i>	10, 10, 9	17	4	very poor	very poor	Yes	choked by ivy, 5 % live crown	remove
10663	sweet cherry	<i>Prunus avium</i>	10	10	10	poor	poor	Yes	suppressed, self-corrected phototropic lean, choked by ivy, high crown	remove
10665	sweet cherry	<i>Prunus avium</i>	11, 10	15	8	poor	poor	Yes	codominant leaders, suppressed, choked by ivy, high crown	remove
10667	sweet cherry	<i>Prunus avium</i>	6	6	2	poor	very poor	Yes	suppressed, narrow crown, high crown, thin	n/a
10669	sweet cherry	<i>Prunus avium</i>	9	9	6	poor	very poor	Yes	trunk cavities, crooked trunk, suppressed, trunk cavity from 2 to 20'	remove
10670	bigleaf maple	<i>Acer macrophyllum</i>	15	15	15	good	fair	Yes	self-corrected phototropic lean, asymmetrical crown	remove



Attachment 3 - Tree Inventory
10150 SW Ibach Street, Tualatin, OR 97062

Tree No	Common name	Scientific name	DSH ¹ (in)	Single Stem DSH ² (in)	C-Rad ³ (ft)	Health ⁴	Structure ⁴	Property Status	Comments	Treatment
10673	bigleaf maple	<i>Acer macrophyllum</i>	6	6	12	good	fair	Yes	lost and regrew top, asymmetrical crown, choked by ivy	n/a
10674	bigleaf maple	<i>Acer macrophyllum</i>	7	7	15	good	fair	Yes	asymmetrical crown, choked by ivy	n/a
10675	bigleaf maple	<i>Acer macrophyllum</i>	8, 6	10	12	fair	fair	Yes	asymmetrical crown, suppressed, self-corrected phototropic lean, choked by ivy	remove
10676	bigleaf maple	<i>Acer macrophyllum</i>	10	10	15	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean, choked by ivy	remove
10683	sweet cherry	<i>Prunus avium</i>	9, 8	12	12	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean, codominant leaders	remove
10684	sweet cherry	<i>Prunus avium</i>	11	11	15	fair	fair	Yes	thin, crooked trunk	remove
10687	sweet cherry	<i>Prunus avium</i>	8	8	4	poor	poor	Yes	thin, high crown, narrow crown	remove
10689	sweet cherry	<i>Prunus avium</i>	11	11	8	fair	poor	Yes	high crown, narrow crown, lost and regrew top	remove
10690	sweet cherry	<i>Prunus avium</i>	9	9	6	poor	poor	Yes	thin, high crown, narrow crown	remove
10691	sweet cherry	<i>Prunus avium</i>	9	9	8	fair	poor	Yes	thin, narrow crown, high crown	remove
10692	sweet cherry	<i>Prunus avium</i>	7, 6	9	5	poor	very poor	Yes	multi-stem, thin, asymmetrical crown, high crown, narrow crown	remove
10693	sweet cherry	<i>Prunus avium</i>	10, 10	14	6	poor	very poor	Yes	multi-stem, asymmetrical crown, bowed trunk, high crown, narrow crown	remove
10694	English walnut	<i>Juglans regia</i>	15	15	15	good	fair	Yes	self-corrected phototropic lean, asymmetrical crown	remove
10695	sweet cherry	<i>Prunus avium</i>	7, 4	8	4	poor	poor	Yes	multi-stem, thin, suppressed, high crown	remove
10696	sweet cherry	<i>Prunus avium</i>	7, 6, 4	10	8	poor	very poor	Yes	multi-stem, dead branches 2 to 4" diameter, asymmetrical crown, suppressed	remove
10698	sweet cherry	<i>Prunus avium</i>	6, 6	8	4	poor	poor	Yes	asymmetrical crown, suppressed, high crown, multi-stem	remove
10699	sweet cherry	<i>Prunus avium</i>	6	6	3	poor	very poor	Yes	suppressed, high crown, narrow crown, thin	n/a
10700	sweet cherry	<i>Prunus avium</i>	7, 3	8	4	poor	poor	Yes	multi-stem, thin, suppressed, high crown, narrow crown	remove
10704	sweet cherry	<i>Prunus avium</i>	6	6	3	poor	very poor	Yes	asymmetrical crown, suppressed, high crown, narrow crown	n/a
10705	sweet cherry	<i>Prunus avium</i>	10	10	8	poor	poor	Yes	asymmetrical crown, suppressed, dead branches 0 to 2" diameter	remove
10706	sweet cherry	<i>Prunus avium</i>	10	10	3	poor	very poor	Yes	suppressed, high crown, narrow crown, bowed trunk	remove
10707	sweet cherry	<i>Prunus avium</i>	8	8	3	poor	very poor	Yes	thin, suppressed, narrow crown, high crown	remove
10709	western redcedar	<i>Thuja plicata</i>	19	19	18	fair	fair	Yes	thin, dead branches 0 to 2" diameter	remove
10715	Douglas-fir	<i>Pseudotsuga menziesii</i>	33	33	25	good	fair	Yes	codominant leaders with inclusion, dead branches 2 to 4" diameter	remove
10716	lodgepole pine	<i>Pinus contorta</i>	22	22	10	fair	poor	Yes	thin, dead branches 0 to 2" diameter, high crown, narrow crown, codominant leaders with inclusion, poor trunk taper	remove
10717	Norway spruce	<i>Picea abies</i>	28	28	15	poor	very poor	Yes	dead branches greater than 4" diameter, codominant leaders with inclusion, asymmetrical crown	remove
10720	Norway spruce	<i>Picea abies</i>	13	13	0	dead	dead	Yes		remove
10729	kousa dogwood	<i>Cornus kousa</i>	5, 4	6	3	poor	poor	Yes	multi-stem, asymmetrical crown, dead branches 0 to 2" diameter	n/a
10735	Norway spruce	<i>Picea abies</i>	10	10	0	dead	dead	Yes		remove
10744	sweet cherry	<i>Prunus avium</i>	20, 20	28	25	fair	poor	Yes	dead branches 0 to 2" diameter, codominant leaders with inclusion, trunk cavities	remove
10746	Scouler's willow	<i>Salix scouleriana</i>	8	8	8	fair	fair	Yes	thin, history of branch/leader failure, leaning trunk, trunk seam	remove
10747	Scouler's willow	<i>Salix scouleriana</i>	7	7	10	good	fair	Yes	sweeping trunk	n/a
10753	red alder	<i>Alnus rubra</i>	7	7	7	fair	fair	Yes	dead branches 0 to 2" diameter, thin, dying from the top down	n/a
10754	sweet cherry	<i>Prunus avium</i>	15, 14	21	12	fair	fair	Yes	multi-stem, thin, asymmetrical crown, dead branches 0 to 2" diameter	remove
10758	Norway spruce	<i>Picea abies</i>	14	14	0	dead	dead	Yes		remove
10759	sweet cherry	<i>Prunus avium</i>	16, 12	20	10	fair	poor	Yes	asymmetrical crown, thin, high crown, dead branches 0 to 2" diameter	remove
10764	lodgepole pine	<i>Pinus contorta</i>	12	12	4	fair	poor	Yes	codominant leaders with inclusion, dead branches 0 to 2" diameter, asymmetrical crown, discolored foliage	remove



Attachment 3 - Tree Inventory
10150 SW Ibach Street, Tualatin, OR 97062

Tree No	Common name	Scientific name	DSH ¹ (in)	Single Stem DSH ² (in)	C-Rad ³ (ft)	Health ⁴	Structure ⁴	Property Status	Comments	Treatment
10765	red alder	<i>Alnus rubra</i>	9, 5	10	12	good	fair	Yes	multi-stem, asymmetrical crown	remove
10767	grand fir	<i>Abies grandis</i>	17	17	12	good	fair	Yes	asymmetrical crown, dead branches 0 to 2" diameter	remove
10768	European mountain ash	<i>Sorbus alnifolia</i>	8	8	6	very poor	very poor	Yes	codominant leaders, dying from the top down	remove
10771	sweet cherry	<i>Prunus avium</i>	10	10	8	very poor	very poor	Yes	dead branches greater than 4" diameter, leaning trunk, missing bark, trunk cavities, 10% live crown	remove
10775	sweet cherry	<i>Prunus avium</i>	8	8	10	good	fair	Yes	self-corrected phototropic lean	remove
10776	sweet cherry	<i>Prunus avium</i>	6	6	8	good	fair	Yes	self-corrected phototropic lean	n/a
10777	sweet cherry	<i>Prunus avium</i>	7	7	10	good	fair	Yes	crooked trunk	n/a
10781	sweet cherry	<i>Prunus avium</i>	9	9	15	good	fair	Yes	self-corrected phototropic lean	remove
10782	sweet cherry	<i>Prunus avium</i>	14, 12	18	15	good	fair	Yes	self-corrected phototropic lean, codominant leaders with inclusion	remove
10783	sweet cherry	<i>Prunus avium</i>	20, 20, 18	34	20	good	fair	Yes	codominant leaders with inclusion, self-corrected phototropic lean, asymmetrical crown	remove
10793	sweet cherry	<i>Prunus avium</i>	12	12	15	good	fair	Yes	asymmetrical crown	remove
10794	sweet cherry	<i>Prunus avium</i>	16, 13	21	20	fair	fair	Yes	thin, asymmetrical crown, codominant leaders with inclusion, self-corrected phototropic lean	remove
10795	Douglas-fir	<i>Pseudotsuga menziesii</i>	35	35	25	good	fair	Yes	codominant leaders, lost and regrew top, codominant leaders at 30°, racoon nest	remove
10803	Douglas-fir	<i>Pseudotsuga menziesii</i>	26	26	25	good	fair	Yes	crooked trunk	remove
10809	Scouler's willow	<i>Salix scouleriana</i>	6	6	3	very poor	very poor	Yes	dead branches greater than 4" diameter, thin, codominant leaders, missing bark, dead codominant leader	n/a
10811	English holly	<i>Ilex aquifolium</i>	8, 6	10	8	poor	very poor	Yes	codominant leaders, suppressed, trunk wound	remove
10814	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	14	12	fair	fair	Yes	thin, dead branches 0 to 2" diameter, crooked trunk	remove
10815	white poplar	<i>Populus alba</i>	28, 20	34	25	fair	fair	Yes	multi-stem, dead branches greater than 4" d, failed stem still attached at base	remove
10817	sweet cherry	<i>Prunus avium</i>	22	22	20	fair	fair	Yes	codominant leaders with inclusion, asymmetrical crown, dead branches 0 to 2" diameter	remove
10819	Douglas-fir	<i>Pseudotsuga menziesii</i>	23	23	20	good	fair	Yes	asymmetrical crown, self-corrected phototropic lean	remove
10825	red alder	<i>Alnus rubra</i>	6	6	4	good	fair	Yes	crooked trunk, narrow crown	n/a
10844	English walnut	<i>Juglans regia</i>	8	8	12	good	fair	Yes	self-corrected phototropic lean, dead branches 0 to 2" diameter	remove
10845	black cottonwood	<i>Populus trichocarpa</i>	28	28	25	good	good	Yes		remove
10848	red alder	<i>Alnus rubra</i>	11, 10, 9	17	10	fair	fair	Yes	multi-stem, thin, narrow crown	remove
10850	sweet cherry	<i>Prunus avium</i>	17	17	10	fair	poor	Yes	dead branches 0 to 2" diameter, asymmetrical crown, narrow crown, high crown	remove
10857	sweet cherry	<i>Prunus avium</i>	15	15	10	fair	fair	Yes	asymmetrical crown, narrow crown, invasive ground cover	remove
10858	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	20	8	fair	fair	Yes	thin, asymmetrical crown, suppressed	remove
10859	sweet cherry	<i>Prunus avium</i>	17	17	10	fair	fair	Yes	dead branches 0 to 2" diameter, asymmetrical crown	remove
10862	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	18	16	fair	fair	Yes	crooked trunk, thin, dead branches 0 to 2" diameter	remove
10868	river birch	<i>Betula nigra</i>	9	9	6	fair	fair	Yes	asymmetrical crown, narrow crown, choked by ivy	remove
10869	one seed hawthorn	<i>Crataegus monogyna</i>	6	6	4	fair	fair	Yes	multi-stem, choked by ivy, asymmetrical crown, suppressed	n/a
10870	river birch	<i>Betula nigra</i>	11	11	4	poor	poor	Yes	thin, suppressed, high crown, narrow crown, choked by ivy	remove
10871	river birch	<i>Betula nigra</i>	13	13	8	fair	fair	Yes	choked by ivy, asymmetrical crown	remove
10878	Douglas-fir	<i>Pseudotsuga menziesii</i>	23	23	12	fair	fair	Yes	codominant leaders with inclusion, dead branches 0 to 2" diameter, asymmetrical crown	remove



Attachment 3 - Tree Inventory
10150 SW Ibach Street, Tualatin, OR 97062

Tree No	Common name	Scientific name	DSH ¹ (in)	Single Stem DSH ² (in)	C-Rad ³ (ft)	Health ⁴	Structure ⁴	Property Status	Comments	Treatment
10880	sweet cherry	<i>Prunus avium</i>	22	22	8	poor	poor	Yes	codominant leaders with inclusion, narrow crown, high crown, crooked trunk, dead branches 0 to 2" diameter	remove
10882	sweet cherry	<i>Prunus avium</i>	14	14	5	very poor	very poor	Yes	dead branches 0 to 2" diameter, thin, narrow crown, high crown, choked by ivy, epicormic branches	remove
10886	grand fir	<i>Abies grandis</i>	28	28	15	fair	fair	Yes	dead branches 0 to 2" diameter, thin	remove
10888	black cottonwood	<i>Populus trichocarpa</i>	24	24	20	fair	fair	Yes	choked by ivy, high crown, narrow crown	remove
10891	red alder	<i>Alnus rubra</i>	12, 10	16	0	dead	dead	Yes		remove
10891.1	red alder	<i>Alnus rubra</i>	18	18	10	poor	poor	Yes	dying from the top down, dead branches 2 to 4" diameter, thin, location approximated by arborist	remove
10892	red alder	<i>Alnus rubra</i>	17	17	8	fair	fair	Yes	self-corrected phototropic lean, dead branches 0 to 2" diameter, choked by ivy	remove
10893	grand fir	<i>Abies grandis</i>	12	12	5	good	fair	Yes	asymmetrical crown, suppressed, crooked trunk	remove
10895	red alder	<i>Alnus rubra</i>	15	15	3	very poor	very poor	Yes	dying from the top down, narrow crown, high crown, thin	remove
10896	red alder	<i>Alnus rubra</i>	18	18	0	dead	dead	Yes		remove
10898	eastern white pine	<i>Pinus strobus</i>	10	10	6	good	fair	Yes	crooked trunk, self-corrected phototropic lean, thin	remove
10900	red alder	<i>Alnus rubra</i>	13, 8, 4	16	12	poor	very poor	Yes	multi-stem, missing bark, dying from the top down, dead branches greater than 4" d, two of three stems dying from top down	remove
10918	river birch	<i>Betula nigra</i>	13	13	0	dead	dead	Yes		remove
10919	river birch	<i>Betula nigra</i>	19, 17	25	2	very poor	very poor	Yes	codominant leaders, dying from the top down, epicormic branches	remove
10921	red alder	<i>Alnus rubra</i>	17	17	10	poor	poor	Yes	self-corrected phototropic lean, trunk wound, trunk seam, asymmetrical crown	remove
10922	red alder	<i>Alnus rubra</i>	15, 10, 7	19	10	fair	fair	Yes	multi-stem, dead branches 0 to 2" diameter, asymmetrical crown, thin	remove
10925	river birch	<i>Betula nigra</i>	10	10	2	very poor	very poor	Yes	dying from the top down, epicormic branches, snag at 25'	remove
10926	sweet cherry	<i>Prunus avium</i>	10	10	10	dead	dead	Yes		remove
10932	apple	<i>Malus spp.</i>	6	6	6	good	fair	Yes	epicormic branches, suppressed, dead branches 0 to 2" diameter	n/a
10934	sweet cherry	<i>Prunus avium</i>	10, 7, 5	13	10	fair	fair	Yes	thin, dead branches 0 to 2" diameter, codominant leaders, self-corrected phototropic lean	remove

¹DSH is tree diameter measured at 4.5 feet above the ground level in inches, except as otherwise noted.

²Single DSH is the trunk diameter of a multi-stem tree converted to a single number according to the following formula: square root of the sum of the squared diameter of each trunk at 4.5 feet above mean ground level.

³C-Rad is crown radius measured in feet.

⁴Health and Structure are rated as good, fair, poor, very poor, to dead.

STOP!
DO NOT MOVE THIS FENCE.

TREE PROTECTION ZONE

Inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the project arborist.

For questions regarding tree protection please call the project arborist:
Todd Prager & Associates, LLC
todd@toddprager.com
971.295.4835



Watering Your Trees



Arborvitae (western redcedar or eastern whitecedar cultivars) prefer cool, shaded environments and is not drought tolerant. It does not like crowding but it is often planted in rows in dry, sun-exposed lawns and slowly dies unless irrigated. Drought weakens tree defenses, allowing beetles to move into these trees and finish them off.

Climate change has resulted in long droughts and heatwaves across the state. So our landscape trees could use a little help from irrigation. You can aid them by planting the right tree in the right site and removing grass and other plants nearby that compete for moisture (leave some understory plants to prevent soil drying from sun and wind). Watering a drought-stressed tree will not bring back yellowing leaves but does prevent the loss of other leaves and death of roots and water transport tissues. Common symptoms of drought in trees are:

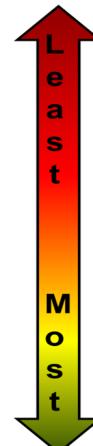
- Thinning canopies (premature leaf drop)
- Uneven crowns (asymmetrical)
- Scorched leaves
- Topkill (top of tree dies)
- Reduced growth (trunk diameter, needle length)
- Overabundant cones or seeds often paired with thin crowns to distinguish from a good seed year

How do trees respond to drought?

Water is collected by roots and moved throughout the tree along a network of tubes (vascular tissues) then released through holes in leaves (stomata) into the air. Hot, dry or windy conditions can increase water loss from leaves. Drought stress kills roots and collapses vascular tissues. It can take many years for trees to rebuild these tissues. During that time they have fewer of these tissues to actively collect and move water throughout the tree.

Trees combat drought by closing stomata to reduce water loss. However, this stops intake of carbon dioxide and thus photosynthesis, which starves the tree and is therefore only a short-term solution. Another strategy is to prematurely drop leaves to reduce the amount of tissues that both need and release moisture. This also reduces photosynthesis. Suppressing photosynthesis both reduces growth and resources allocated to defenses, which makes trees less resilient to other stressors, such as insects, diseases, mechanical damage, etc. For example, pitch is a primary mechanical and chemical barrier against tree-killing bark beetles. However, drought-stressed trees do not have enough moisture for both growth and defense. Because growth always takes priority, defenses are limited. Further, drought-stressed trees release chemicals that indicate when defenses are down, which attracts opportunistic bark beetles.

Most trees have no solution for when water runs short; they simply are not drought tolerant over the long term. Prolonged or repeated droughts often result in death, sometimes years later.



Drought tolerance

Western hemlock
True fir (including grand fir)
Western redcedar
Birch
Douglas-fir
Madrone
Incense cedar
Willamette Valley ponderosa pine
Eastern Oregon ponderosa pine
Oregon white oak



Watering guidance

- Encourage healthy root development from the start by preventing drought or heat stress in seedlings. During planting keep trees cool and roots moist.
- Irrigation in the first 2-3 years is most important for young tree establishment. After that a network of roots is often established enough to absorb natural moisture. Most trees native to Oregon have the majority of their water-absorbing roots in the upper 12-18 inches of soil.
- Hand-watering, drip irrigation, soaker hoses, or passive irrigation (e.g., Tree-Gator-type watering bags, or 5-gallon buckets with small holes at the base set around the root zone) are preferred watering methods.
- Water around the root base or within the drip line (i.e., the area directly below the tree canopy).
- Trees need long, slow and deep watering to encourage deeper root growth. They get less benefit from a large dump of water or frequent, shallow watering.
- The larger the tree, the more water is needed, although larger trees may have more extensive root systems to access moisture deeper in the ground.
- A sprinkler set to water a lawn is typically not enough to support nearby mature trees.
- Water during the cooler parts of the day (preferably mornings) and keep irrigation systems low to the ground to avoid evaporation in the air and wet leaves, which can encourage diseases.
- Add 3-4 inches of mulch (wood chip instead of bark) around the base of a tree to retain moisture. Be careful not to pile mulch against the trunk, which can encourage rot.
- Avoid runoff by reducing water pressure or creating water catchment berms around the root base.
- Identify soil type (sand, loam, clay, etc.) to estimate ability for water to penetrate and be retained. Sandy soils drain too quickly and clay soils become waterlogged if overwatered. Allow the upper 3 inches of soil to get moderately dry between waterings to prevent fungal growth.
- Know how much water a tree needs before you choose what to plant. Pick a species density appropriate to the site. Sprawling invasives, such as ivy, blackberry and Scotch broom compete with trees for soil moisture. Shallow-rooted, drought-tolerant native ground covers can protect soil from drying out.
- Trees planted in containers require more frequent irrigation because roots are limited to moisture within the pot, which can dry out faster due to its smaller volume.

Volume, frequency and duration

Concentrate watering during the warmest, driest months - generally May through September in most of Oregon. Estimates below may need to be adjusted for different soil types and depths, microclimates, tree size or species. Some native trees, such as Oregon white oak, most California oaks, and ponderosa pine should not be watered after their first couple of years. Below are irrigation rules of thumb to get you started. Adjust according to how your tree responds:

- 10-15 gallons a week for trees 3 years or younger
- 20-25 gallons a week for trees 4 - 10 years old
- Deep soakings once or twice a month for trees over 10 years old

Avoid

- Fertilizing. Fertilization will not “green up” dying foliage and is rarely necessary. It spurs growth, which then increases water needs.
- Sudden reduction of water amount or frequency. Opt for gradually phasing out irrigation to avoid shocking trees.
- Overwatering. Too much water can waterlog soil, drowning roots and killing them. Symptoms can be confused with those of drought or nutrient deficiencies, such as yellowing leaves that drop early, poor growth, thinning canopies or topkill.



Attachment 6 - Assumptions and Limiting Conditions

1. Any legal description provided to the consultant is assumed to be correct.
2. It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
3. Loss or alteration of any part of this delivered report invalidates the entire report.
4. Drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
5. The consultant's role is only to make recommendations. Inaction on the part of those receiving the report is not the responsibility of the consultant.
6. The client is advised to ensure compliance with applicable local, state, and federal laws and regulations that could relate to this project, i.e., Local and State Tree or Natural Resource Regulations, Local and State Development Regulations, Migratory Bird Treaty Act, Endangered Species Act, Clean Water Act, Americans with Disabilities Act, etc. The consultant may advise the client of issues regarding local, state, and federal laws that the consultant believes would be helpful to the client, but any such advice or comment is not a determination or interpretation of local, state, or federal law or regulation.
7. The information provided in this inspection report includes information and recommendations for the benefit of our client's decision making. The ultimate decision of whether to retain, remove, prune, inspect, or otherwise apply treatment recommendations to a tree is the sole responsibility of the tree owner, and not the responsibility of the project arborist. If there are any questions or concerns with the information presented in this report, please contact our firm so that we can address any issues as soon as possible.
8. The purpose of this report is to:
 - a. Provide tree removal findings and recommendations based on the proposed site and grading plan for the Ibach Subdivision project; and
 - b. Provide recommendations for adequately protecting the tree to be retained during construction.