



## Todd Prager & Associates<sub>LLC</sub>

### MEMORANDUM

**DATE:** April 12, 2023

**TO:** Lee Novak (Vista Residential)

**FROM:** Christine Johnson, ISA Certified Arborist® PN-8730A  
Todd Prager, RCA #597, ISA Board Certified Arborist®

**RE:** Tree Inventory and Preliminary Assessment for Road Improvements associated with the Norwood Multi-Family Project in Tualatin

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### Summary

Planning for the Norwood Multi-Family Project in Tualatin is underway. An existing buffer of mature Douglas-fir (*Pseudotsuga menziesii*) will be impacted by the proposed road improvements associated with development. Our firm was asked to inventory a 60-foot-wide strip south of Norwood Road and provide preliminary tree preservation recommendations. One hundred and ninety-nine (199) trees were inventoried. Successful tree preservation will require retention and protection of exterior trees, tree protection fencing, routing of utilities outside or boring underneath the tree protection zone when possible, and routine tree risk assessments if certain trees are removed. The site plan was altered in order to maximize tree preservation of the existing tree grove south of Norwood Road.

### Background

The Norwood Multi-family Project is located southeast of the intersection of Boones Ferry Road and Norwood Road. An 8-foot-wide public utility easement (PUE) is proposed south of Norwood Road. Sidewalks exist along Norwood Road adjacent to the eastern portion of tax lot 106. No sidewalk is present along Norwood Road adjacent to tax lot 108 and the western portion of tax lot 106.

### Assignment

The assignment asked of our firm was as follows:

1. Inventory an existing buffer of trees within a 60-foot-wide strip south of Norwood Road on tax lots 106 and 108.
2. Provide initial tree preservation recommendations to the project team.

### Observations

Our firm visited the site on March 17 and March 20, 2023, and inventoried 199 trees within the designated area from Norwood Road to 60 feet south of Norwood Road. The existing conditions map with tree locations is provided in Attachment 1 and the preliminary grading exhibit with tree locations is provided in Attachment 2. The following information was recorded for each tree:

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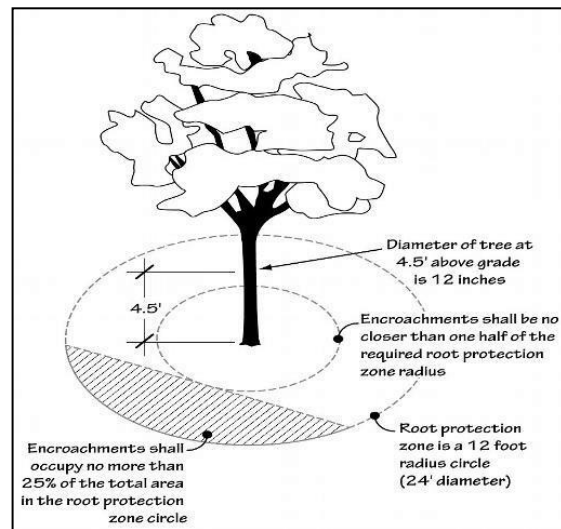
tree number, common name, scientific name, DBH (diameter at breast height, 4.5 feet above ground level), average canopy radius, health condition, structural condition, and pertinent comments. (Attachment 3) Tree numbers in the inventory in Attachment 3 correspond to tree numbers shown on Attachments 1 and 2. Photographs of the trees adjacent to tax lot 106 are provided in Attachment 4.

## Discussion and Recommendations

The buffer of Douglas-fir trees are growing relatively close to one another. Exterior trees are healthy and have either good or fair structure (i.e., one sided crown, self-corrected phototropic lean). Interior trees are generally less healthy (i.e., thin foliage) and have fair to very poor structure (i.e, suppressed, narrow crowns, high crowns). This is typical of a buffer or grove of trees. That said, it will be extremely important to preserve exterior trees since their removal would negatively impact the health and stability of interior trees.

To preserve a 60-foot-wide buffer from Norwood Road going south from construction impacts, the following tree preservation measures are recommended:

- 1. Buildings, hardscape, and grade changes.** Proposed buildings, hardscape, and grade changes will need to be located to allow for adequate root protection. A typical minimum root protection zone allows encroachments no closer than a radius from a tree of 0.5 feet per inch of DBH if no more than 25 percent of the root protection zone area (estimated at one foot radius per inch of DBH) 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. A recommended limit of disturbance is provided on a preliminary site plan in Attachment 2. The recommended limit of disturbance designates where no construction, grading, or utilities should occur. If utilities must be constructed inside the limits of construction, alternative methods of construction will be recommended (i.e., horizontal directional drilling, pneumatic excavation, hydro excavation).



**Figure 1** Typical minimum protection zone.

- 2. Proposed road improvements.** If the existing access drive and sidewalk are reused for tax lot 106, then this will allow for tree preservation along that portion of the Norwood Road frontage. If a sidewalk and other improvements are required along the unimproved Norwood Road right of way adjacent to tax lots 106 and 108, trees will likely need to be removed along that frontage unless design changes are made to avoid the trees such as routing the sidewalk to the south of trees 50695, 50696, 50697 and 20698 through 20707. Coordination with the project arborist will be required during the design of right of way improvements if trees are to be retained along tax lots 106, 108, and the western portion of tax lot 106.

3. **Tree protection fencing.** Tree protection fencing with tree protection signage should enclose protected trees on all sides at the limits of disturbance.
4. **Underground electricity.** Overhead power lines exist along the south side of Norwood Road. These will be rerouted underground. The preferred location of this work is under the sidewalk or within the 7-foot-wide dedication and not within the PUE. Boring is the preferred method of installation.
5. **Routing of utilities.** An 8-foot-wide PUE is planned within the northern portion of the 60-foot-wide tree grove. If possible, additional utilities should be routed outside the recommended limit of disturbance or bored at least four feet below grade where there are existing trees to be retained. If alternative routes are unavailable or impractical, pneumatic excavation or hydro exaction under arborist supervision within the buffer may be compatible with tree preservation.
6. **Routine tree risk assessments.** If exterior trees are removed, or a new “edge” is created, routine risk assessments may be recommended.

## Conclusion

Adjustments to the preliminary design for the Norwood Multi-Family project have maximized tree preservation near Norwood Road. Preserving the 60-foot-wide buffer of Douglas-fir south of Norwood Road is compatible with the proposed road improvements and site plan at this stage of the planning process. Efforts should be made to adequately protect grove exterior trees which will in-turn protect interior trees. Close coordination with the project arborist team will be necessary as the project design is refined to ensure the trees to be retained are adequately protected.

Please contact our firm if there are any questions about the information provided in this report.

Sincerely,

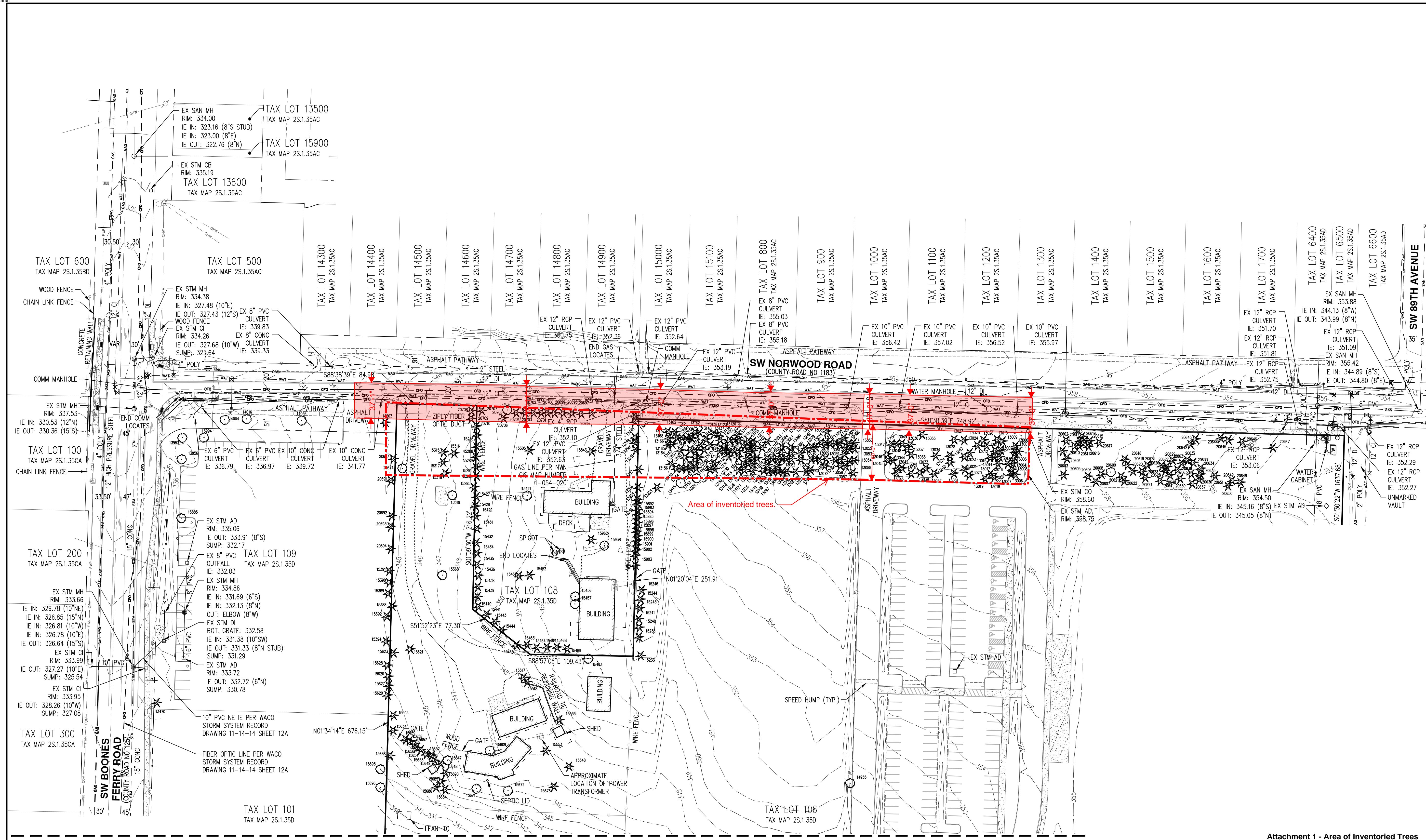


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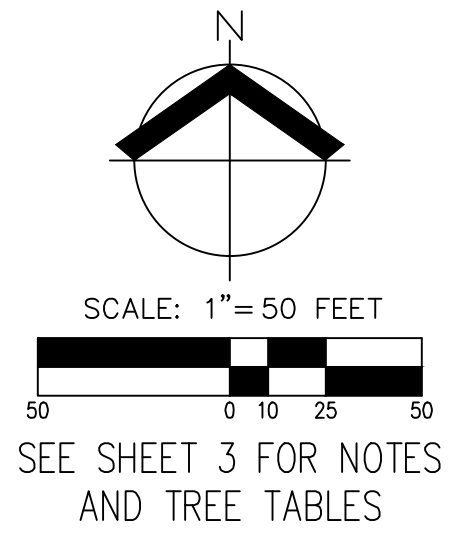
Todd Prager  
*ASCA Registered Consulting Arborist #597*  
*ISA Board Certified Master Arborist®*, WE-6723B  
*ISA Qualified Tree Risk Assessor*  
*AICP, American Planning Association*  
*todd@toddprager.com | 971.295.4835*

Enclosures: Attachment 1 – Area of Inventoried Trees  
Attachment 2 – Preliminary Arborist Exhibit with Limits of Disturbance  
Attachment 3 – Tree Inventory  
Attachment 4 – Photographs of the Trees and Site  
Attachment 5 – Assumptions and Limiting Conditions



MATCH LINE: SEE SHEET 2

Attachment 1 - Area of Inventoried Trees



# Preliminary

04/12/2023

Alternative sidewalk route to retain tree frontage.

Recommended limit of disturbance to the north is the existing sidewalk. No construction, paving, grading or right of way improvements beyond this point.

Existing curb to be removed and replaced with 6-inch curb. No root cracked curbs or lifted pavement were observed.

Recommended corridor to bore underground utilities between the sidewalk and 7-foot-wide dedication.

Recommended limit of disturbance. No construction, paving, grading or right of way improvements beyond this point.

Proposed 5-foot-wide curb light sidewalk west of 24-foot-wide drive aisle.

Recommended limit of disturbance. No construction, paving, grading or right of way improvements beyond this point.

Existing curb and pavement to the south to be removed and converted to landscape.

SW BOONES FERRY ROAD

SW NORWOOD ROAD

TAX LOT 109  
TAX MAP 2S.1.35D

8.0' PUBLIC UTILITY EASEMENT

7.0' DEDICATION

53.0' TREE BUFFER








14.1' MIN SETBACK TO TREE BUFFER

TAX LOT 101  
TAX MAP 2S.1.35D

TAX LOT 102  
TAX MAP 2S.1.35D

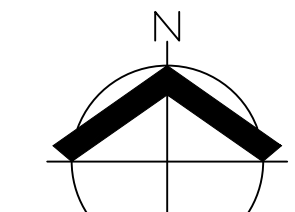
TAX LOT 106  
TAX MAP 2S.1.35D

### TREE LEGEND

-  Tree proposed for removal
-  Recommended limits of disturbance
-  Alternative sidewalk route
-  8' Public Utility Easement
-  7' Dedication
-  Existing impervious area to be converted to landscape
-  Proposed corridor for underground utilities

Note: This preliminary exhibit only addresses trees affected by road improvements along SW Norwood Road and does not address all trees on the site.

### Attachment 2 - Preliminary Arborist Exhibit



SCALE: 1" = 40 FEET  
ORIGINAL PAGE SIZE: 22" x 34"

## PRELIMINARY ARBORIST EXHIBIT NORWOOD MULTI-FAMILY VISTA RESIDENTIAL TUALATIN, OREGON

**AKS**  
AKS ENGINEERING & FORESTRY, LLC  
12865 SW HERMAN RD., STE 100  
TUALATIN, OR 97062  
503.563.6151  
WWW.AKS-ENG.COM

ENGINEERING · SURVEYING · NATURAL RESOURCES  
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

JOB NUMBER:	8723
DATE:	04/11/2023
DESIGNED BY:	AMC
DRAWN BY:	AMC
CHECKED BY:	

AKS DRAWING FILE: 8723\_202303030 ARBORIST EXHIBIT.DWG | LAYOUT: LAYOUT1



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**Attachment 3 - Tree Inventory**  
Norwood Multi-Family Project - Tualatin, OR  
3/17/2023 3/21/2023

Tree	Common Name	Scientific name	DBH <sup>1</sup>	C-Radius <sup>2</sup>	Condition <sup>3</sup>	Structure <sup>3</sup>	Comments
13000	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	10	good	fair	one sided
13001	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	7	fair	fair	suppressed, one sided, self-corrected lean
13002	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	15	good	fair	suppressed, one sided
13003	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	4	poor	poor	thin, suppressed, narrow crown, one sided
13004	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	8	good	fair	one sided
13005	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	4	fair	fair	thin, suppressed
13006	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	12	good	fair	one sided
13007	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	6	good	fair	one sided
13008	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	4	poor	poor	thin, suppressed, codominant leaders, high crown
13009	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	8	good	fair	one sided
13010	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	8	good	fair	one sided
13011	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	4	fair	poor	thin, high crown, narrow crown
13012	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	4	fair	poor	thin, high crown, narrow crown
13013	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	3	poor	poor	thin, suppressed, high crown, narrow crown
13014	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	0	dead	dead	
13015	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	8	good	fair	high crown
13016	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	5	poor	poor	thin, suppressed, high crown, one sided
13017	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	5	fair	fair	thin, high crown, sweeping trunk
13018	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	12	good	fair	one sided, sweeping trunk
13019	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	8	good	fair	one sided, lost and regrew top
13020	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	8	good	fair	one sided
13021	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	6	fair	fair	thin, high crown, narrow crown
13022	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	8	fair	fair	thin, codominant leaders, high crown
13023	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	5	fair	fair	thin, high crown, narrow crown
13024	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	8	good	good	
13025	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	7	good	fair	one sided
13026	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	6	fair	fair	suppressed, high crown
13027	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	10	good	fair	one sided
13028	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	12	good	fair	one sided
13029	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	5	good	fair	high crown, narrow crown
13030	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	6	good	fair	one sided
13031	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	10	good	fair	one sided
13032	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	6	fair	fair	thin, one sided
13033	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	6	fair	fair	suppressed, high crown, narrow crown
13034	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	6	good	fair	high crown, narrow crown
13035	Douglas-fir	<i>Pseudotsuga menziesii</i>	26	15	good	good	



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Norwood Multi-Family Project - Tualatin, OR  
3/17/2023 3/21/2023

Tree	Common Name	Scientific name	DBH <sup>1</sup>	C-Radius <sup>2</sup>	Condition <sup>3</sup>	Structure <sup>3</sup>	Comments
13036	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	8	fair	fair	suppressed, high crown
13037	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	5	fair	fair	suppressed, high crown
13039	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	10	good	fair	one sided
13040	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	10	good	fair	one sided
13041	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	4	poor	poor	thin, suppressed, narrow crown
13042	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	0	dead	dead	
13043	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	12	good	fair	one sided
13044	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	5	fair	fair	thin, discolored foliage, high crown, narrow crown
13045	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	6	fair	poor	thin, discolored foliage, trunk decay, high crown
13046	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	6	fair	fair	epicormic branches, narrow crown, self corrected phototropic lean
13047	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	12	good	fair	one sided
13048	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	5	good	fair	high crown, phototropic sweeping trunk
13049	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	6	fair	fair	thin, one sided
13050	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	10	good	fair	one sided
13051	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	3	very poor	very poor	suppressed, 90% dead
13052	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	3	poor	fair	thin, suppressed, high crown, narrow crown
13053	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	4	fair	fair	suppressed
13054	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	7	good	fair	one sided, upper crown phototropic
13055	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	7	poor	poor	suppressed, high crown, narrow crown
13056	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	8	good	good	
13057	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	12	good	fair	one sided
13058	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	5	fair	fair	suppressed, one sided
13059	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	8	good	fair	high crown, narrow crown
13060	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	4	fair	fair	thin, narrow crown, one sided
13061	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	3	poor	very poor	suppressed, codominant leaders
13062	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	5	fair	poor	suppressed, high crown
13063	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	3	fair	poor	suppressed, high crown
13064	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	6	fair	poor	thin, suppressed, high crown
13065	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	10	good	good	
13066	Douglas-fir	<i>Pseudotsuga menziesii</i>	22	15	good	good	
13067	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	4	poor	poor	thin, suppressed, high crown, narrow crown
13068	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	4	poor	poor	suppressed, high crown, narrow crown
13069	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	7	good	fair	one sided
13070	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	4	poor	poor	thin, suppressed, high crown
13071	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	7	fair	fair	suppressed, high crown
13072	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	10	good	fair	one sided



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**Attachment 3 - Tree Inventory**  
Norwood Multi-Family Project - Tualatin, OR  
3/17/2023 3/21/2023

Tree	Common Name	Scientific name	DBH <sup>1</sup>	C-Radius <sup>2</sup>	Condition <sup>3</sup>	Structure <sup>3</sup>	Comments
13073	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	10	good	fair	one sided
13074	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	10	good	fair	one sided
13075	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	8	fair	fair	thin, high crown
13076	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	8	fair	fair	high crown
13077	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	8	good	fair	high crown
13078	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	2	fair	poor	thin, suppressed, narrow crown
13079	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	12	good	good	
13080	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	5	fair	poor	suppressed, high crown
13081	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	4	poor	poor	thin, suppressed, narrow crown
13082	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	12	good	fair	one sided, sweeping trunk
13083	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	10	fair	fair	thin, one sided
13084	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	10	good	fair	one sided
13085	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	2	poor	poor	thin, suppressed, narrow crown, sweeping trunk
13086	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	0	dead	dead	
13087	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	2	poor	very poor	suppressed, one sided, 90% dead
13088	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	3	poor	poor	suppressed, high crown, narrow crown
13089	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	6	fair	fair	high crown
13090	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	0	dead	dead	
13091	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	14	good	good	
13092	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	16	good	good	
13093	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	4	poor	poor	suppressed, high crown, one sided
13094	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	3	poor	poor	suppressed, discolored foliage, high crown, narrow crown
13095	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	5	fair	fair	suppressed, high crown
13096	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	7	fair	fair	thin, one sided
13097	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	10	good	fair	one sided
13099	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	0	dead	dead	
13100	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	5	fair	poor	high crown
13103	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	15	good	fair	one sided
13104	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	12	fair	poor	one sided, lost top at 25'
13105	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	5	fair	fair	suppressed, high crown, narrow crown
13106	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	2	very poor	very poor	90% dead
13107	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	3	poor	poor	thin, suppressed
13108	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	0	dead	dead	
13109	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	3	poor	poor	suppressed, high crown
13110	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	2	very poor	very poor	90% dead
13111	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	10	good	fair	one sided





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**Attachment 3 - Tree Inventory**  
Norwood Multi-Family Project - Tualatin, OR  
3/17/2023 3/21/2023

Tree	Common Name	Scientific name	DBH <sup>1</sup>	C-Radius <sup>2</sup>	Condition <sup>3</sup>	Structure <sup>3</sup>	Comments
13112	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	13	good	fair	one sided
13113	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	15	good	good	
13114	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	3	poor	very poor	suppressed, epicormic branches, one sided
13115	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	4	poor	poor	suppressed, epicormic branches, one sided
13116	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	5	fair	fair	suppressed, high crown, narrow crown
13117	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	0	dead	dead	
13118	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	4	fair	poor	high crown, narrow crown
13119	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	5	fair	fair	high crown, narrow crown
13120	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	5	good	fair	suppressed, one sided, lost and regrew multiple tops
13121	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	12	good	good	
13122	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	8	good	fair	one sided
13123	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	5	fair	poor	suppressed, high crown
13125	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	4	poor	poor	suppressed, high crown, narrow crown
13126	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	12	good	fair	one sided
13127	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	5	fair	poor	suppressed, high crown, narrow crown
13128	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	4	fair	poor	suppressed, high crown
13129	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	5	fair	fair	suppressed, narrow crown, one sided
13130	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	12	good	good	
13131	Pacific madrone	<i>Arbutus menziesii</i>	10	2	very poor	poor	90% dead
13132	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	7	good	fair	one sided
13133	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	10	good	fair	one sided
13134	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	5	very poor	very poor	90% dead
13135	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	2	poor	poor	thin, suppressed, epicormic branches, narrow crown
13136	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	8	good	fair	high crown
13137	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	15	good	fair	one sided
13138	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	6	fair	fair	suppressed, epicormic branches, one sided
13139	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	3	very poor	very poor	90% dead
13140	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	0	dead	dead	
13141	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	10	good	good	
13142	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	10	good	fair	one sided, crooked trunk
13143	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	8	good	fair	high crown, also tagged 13159
13144	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	3	very poor	very poor	90% dead
13145	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	8	fair	fair	high crown
13146	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	4	very poor	very poor	suppressed, high crown, 80% dead
13147	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	3	very poor	very poor	90% dead
13148	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	4	poor	poor	thin, suppressed, narrow crown



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**Attachment 3 - Tree Inventory**  
Norwood Multi-Family Project - Tualatin, OR  
3/17/2023 3/21/2023

Tree	Common Name	Scientific name	DBH <sup>1</sup>	C-Radius <sup>2</sup>	Condition <sup>3</sup>	Structure <sup>3</sup>	Comments
13149	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	3	poor	poor	thin, suppressed, codominant leaders
13150	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	6	good	fair	one sided
13152	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	12	good	fair	one sided
13153	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	10	good	fair	one sided, sweeping trunk
13154	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	12	good	fair	one sided
13155	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	6	fair	fair	suppressed, one sided
13156	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	10	good	good	
13157	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	8	fair	fair	codominant leaders, high crown, epicormic branches, narrow crown
13158	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	10	good	fair	high crown, sweeping trunk
13160	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	2	poor	poor	suppressed, epicormic branches
13161	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	3	very poor	very poor	thin, suppressed, 95% dead
13162	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	8	fair	fair	suppressed, high crown, epicormic branches, narrow crown
13163	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	3	fair	fair	suppressed
13164	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	10	fair	fair	high crown
13165	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	12	good	good	
13166	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	5	fair	fair	suppressed, sweeping trunk
13167	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	8	good	fair	one sided
13168	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	12	good	good	
13247	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	11	good	good	
13248	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	7	fair	fair	thin, suppressed
13249	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	2	very poor	very poor	90% dead
13250	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	20	good	good	
13251	Douglas-fir	<i>Pseudotsuga menziesii</i>	23	11	good	good	
13252	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	15	good	good	
14203	shore pine	<i>Pinus contorta</i>	19	10	fair	fair	codominant leaders, Moderate pitch moth infection
15286	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	15	good	fair	one sided
15288	Douglas-fir	<i>Pseudotsuga menziesii</i>	23	15	good	fair	one sided
15289	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	12	good	fair	narrow crown, one sided
15291	Douglas-fir	<i>Pseudotsuga menziesii</i>	23	22	good	fair	crooked trunk
15293	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	10	good	good	



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**Attachment 3 - Tree Inventory**  
Norwood Multi-Family Project - Tualatin, OR  
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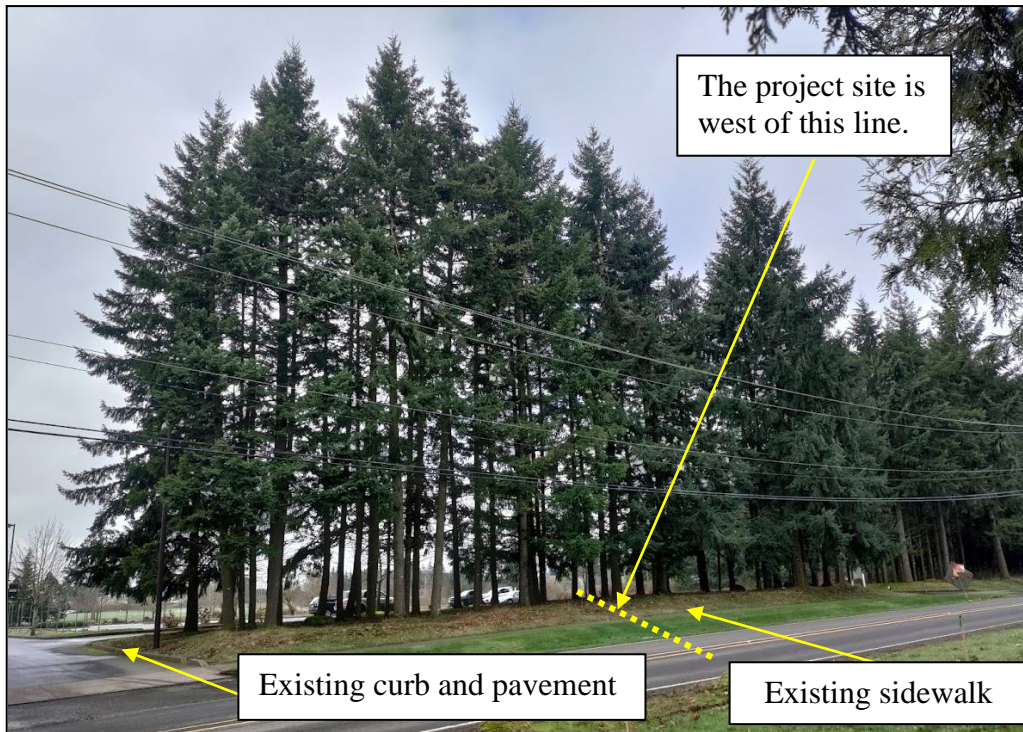
Tree	Common Name	Scientific name	DBH <sup>1</sup>	C-Radius <sup>2</sup>	Condition <sup>3</sup>	Structure <sup>3</sup>	Comments
15295	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	15	good	fair	narrow crown, one sided
15305	Douglas-fir	<i>Pseudotsuga menziesii</i>	34	25	good	fair	codominant leaders
15315	blue spruce	<i>Picea pungens</i>	8	8	good	good	
15316	Norway spruce	<i>Picea abies</i>	6	6	fair	fair	suppressed, one sided
15317	blue spruce	<i>Picea pungens</i>	7	7	good	good	
15318	white spruce	<i>Picea glauca</i>	9	8	good	good	DBH estimated
15843	Leyland cypress	<i>Cupressus x leylandii</i>	24	20	good	fair	DBH estimated, codominant leaders 18,16
20674	flowering cherry	<i>Prunus serrulata</i>	20	7	fair	poor	diameter measured at 1', large pruning cuts, broken branches
20677	shore pine	<i>Pinus contorta</i>	15	8	good	good	high crown
20695	Douglas-fir	<i>Pseudotsuga menziesii</i>	33	18	good	good	pruned for utilities
20696	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	15	good	fair	narrow crown, pruned for utilities
20697	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	20	good	fair	narrow crown, pruned for utilities
20698	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	20	good	fair	narrow crown, pruned for utilities
20699	Douglas-fir	<i>Pseudotsuga menziesii</i>	22	15	good	fair	narrow crown, pruned for utilities
20700	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	15	good	fair	narrow crown, pruned for utilities
20701	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	12	good	fair	narrow crown, pruned for utilities
20702	Douglas-fir	<i>Pseudotsuga menziesii</i>	22	12	good	fair	narrow crown, pruned for utilities
20703	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	12	good	fair	narrow crown, pruned for utilities
20704	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	15	good	fair	one sided, pruned for utilities
20705	cherry	<i>Prunus sp.</i>	14	5	poor	poor	codominant leaders 9,8,8, dead branches 0.5 to 2"
20706	Douglas-fir	<i>Pseudotsuga menziesii</i>	35	20	good	good	
20707	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	20	fair	very poor	topped at 15' for utilities
20708	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	20	fair	very poor	one sided, topped at 15' for utilities
20709	Douglas-fir	<i>Pseudotsuga menziesii</i>	23	15	good	good	
20710	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	8	poor	poor	thin, suppressed, narrow crown

<sup>1</sup>DBH is the trunk diameter in inches measured per International Society of Arboriculture (ISA) standards.

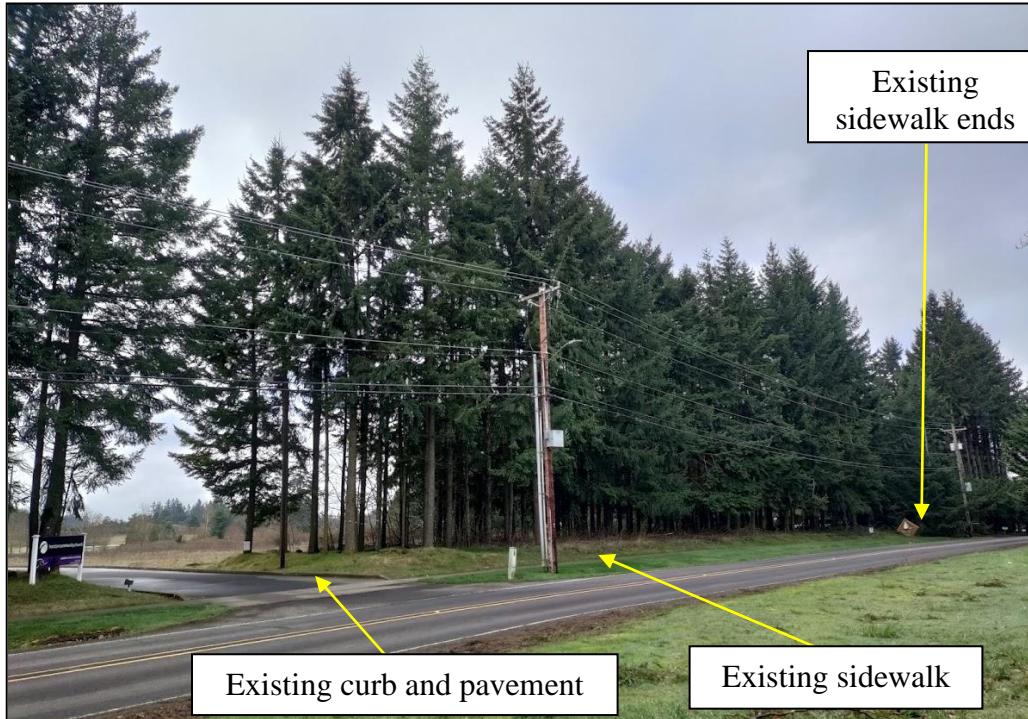
<sup>2</sup>C-Radius is the approximate crown radius in feet.

<sup>3</sup>Condition and Structure ratings range from dead, very poor, poor, fair, to good.

## Attachment 4 – Photographs of the Trees and Site



**Figure 2** Existing grove of Douglas-fir, east side. Notice the existing sidewalk and curbs around the trees. Photograph taken looking southwest. 3/21/2023.



**Figure 3** Existing grove of Douglas-fir, west side. Notice the existing sidewalk and partial curb line. The sidewalk ends near the road sign. Photograph taken looking southwest. 3/21/2023.

## **Attachment 5 – Assumptions and Limiting Conditions**

1. Any legal description provided to the consultant is assumed to be correct. The information provided by Vista Residential Partners was the basis of the information provided in this report.
2. It is assumed that this property is not in violation of any codes, statutes, ordinances, or other governmental regulations.
3. The consultant is not responsible for information gathered from others involved in various activities pertaining to this project. Care has been taken to obtain information from reliable sources.
4. Loss or alteration of any part of this delivered report invalidates the entire report.
5. Drawings and information contained in this report may not be to scale and are intended to be used as display points of reference only.
6. 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.
7. The information provided in this report includes information and recommendations for the benefit of our client's decision making. The ultimate decision of whether to retain, remove, prune, inspect, monitor, or otherwise apply treatment recommendations to a tree is the sole responsibility of the tree owner, and not the responsibility of the project arborist.
8. 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.
9. The purpose of this report is to (1) inventory trees within a 60-foot-wide area south of Norwood Road, and (2) provide tree preservation recommendations for the proposed development.