



, **Environmental Science & Assessment, LLC**

## **TECHNICAL MEMORANDUM**

DATE: April 9, 2020

TO: Lindsey Obermiller - CWS SPL Review

FROM: Jack Dalton and Kim Reavis

RE: Riverside at Cedar Creek Subdivision (CWS File No. 20-000663)

This memo provides a response to the email dated March 24, 2020. This memo supplements the site assessment for the proposed Riverside at Cedar Creek on residential project that involves a 28-lot residential subdivision with road access from “Middlebrook” subdivision on the west side including SW Wapato Lake Drive extension in the middle of site and extension of SW Trillium Lane in the north end (Figure 4).

The proposed mitigation for the CWS VC impacts associated with SW Brookman Right-of-Way dedication have been updated and are detailed in next section.

### *Wetland Impacts*

No wetland impacts will result from the subdivision development as discussed in the Site Assessment report. The future Brookman Road improvement will impact wetland and waterway along Cedar Creek and these impacts will be evaluated and mitigated by the City of Sherwood and Washington County as part of the overall future SW Brookman Road ROW improvements. (Figure 4). The proposed subdivision project avoids all impacts to the Cedar Creek wetlands and floodplain in the middle of the site, north of Brookman Road.

## **CWS TIER 2 ALTERNATIVES ANALYSIS**

### *Subdivision VC Impacts*

As part of the planned subdivision, road right-of-way dedication of SW Brookman Road is being required by the City of Sherwood. This dedication moves the southern parcel boundary north 33 feet to accommodate future road improvements and expansion. City of Sherwood has allowed the developer, in this case, to defer improvements and mitigation for encroachment into wetland and waters within the Cedar Creek floodplain, however, CWS is requiring that any potential impacts to the VC due to the road dedication need to be accounted for at this time.

VC permanent impacts due to the road ROW dedication totals 12,680 square feet. Additional VC impacts are for the community trail that will extend across the site south

of the subdivision and parallels the VC boundary. To accommodate for the drop in slope between the site development and the open space area a wall will be erected along much of the trail along the south side. VC permanent impacts due to the trail/wall totals 2,554 square feet.

The final VC area is 141,230 square feet, this includes the mitigation area (18,453 SF), outfall impacts and some trail impacts that will remain within the VC (1,466 SF), VC temporary impacts (2,740 SF) and good condition VC enhancement (118,571 SF) (Figure 4).

#### *Tier 2 Impact – SW Brookman Road*

The preferred site plan will result in CWS VC encroachment within the existing VC within the SW Brookman Road ROW dedication within the Cedar Creek floodplain totaling 12,680 square-foot that are greater than 30% of depth and 40% of length of the VC. In addition, all VC impacts related to the proposed development will impact Good condition VC (Figure 4). These impacts require a Tier 2 Alternatives Analysis under district standards (CWS 3.07.4).

#### *Alternatives*

Two alternatives considered. The Brookman Road ROW dedication is required for the Riverside at Brookman Road project, so the alternatives are either to complete the proposed project with the ROW dedication or a No Build Alternative.

#### *Preferred Alternative*

The proposed project includes a discussion of how the project meets Section 3.07.C of the CWS standards is provided in next section.

#### *Section 3.07.4.C Criteria*

1. Mitigation is provided in accordance with Section 3.08. The proposed site plan will impact CWS VC with both roadway and trail development. The non-exempt VC impacts totaling 15,234 square feet will be mitigated on site within the large open space tract, primarily west of the stream between the development and the VC. The mitigation is provided on-site, totaling 18,453 square feet.
2. Replacement mitigation protects Vegetated Corridor function and values. The location of the VC mitigation results in a contiguous forested area that parallels the trail easement and extends southeast to Cedar Creek, rather than leaving large gaps between the VC boundary and the trail that would otherwise not be part of the VC. In some areas the VC width has been widened along the Sensitive Areas, and established forested habitat is being preserved.

3. Enhancement of replacement area to Good Condition. The mitigation areas are in good condition and will be preserved and will not need additional plantings, however enhancement does include invasive species removal and planting of the cleared areas greater than 25 square feet. The four trees proposed for removal within the VC will be replaced with 8 additional trees as part of the VC Mitigation plan. Any areas with temporary VC impacts will be replanted to meet Good condition corridor.
4. District Stormwater Connection Permit is likely to be issued based on proposed plans. The project engineer has submitted a preliminary storm drainage report with the land use application to City of Sherwood. Upon acceptance of the Tier 2, construction plans with the proposed storm water treatment plan will be submitted with the goal to achieve a Stormwater Connection Permit.
5. Location of development and site planning minimizes incursion into the Vegetated Corridor. The development of the subdivision (lots, interior streets, WQ Facility) are all located outside of the VC boundary. The primary reason for the VC impact is due to a wall that needs to be built along the south side of the trail due to the sloped nature of the site. The wall has been proposed to eliminate grading into the VC and impact is less than 5 feet wide into the Good condition corridor, and only results in the elimination of one tree. The remaining three trees to be removed within the VC under the recommendation of the project arborist, two are deemed decrepit and one is an invasive species. The existing driveway that currently crosses through CWS VC on the west side will be repurposed for the community trail, which also minimizes impacts.

SW Brookman Road is currently developed as a 20-foot wide main arterial for the local area. As this rural area continues to develop into a more urban populated community the road will need to be expanded to meet safe street standards and accommodate traffic movement. There is no alternative to the Brookman Road ROW dedication or subdivision development that reduces incursion into the VC.

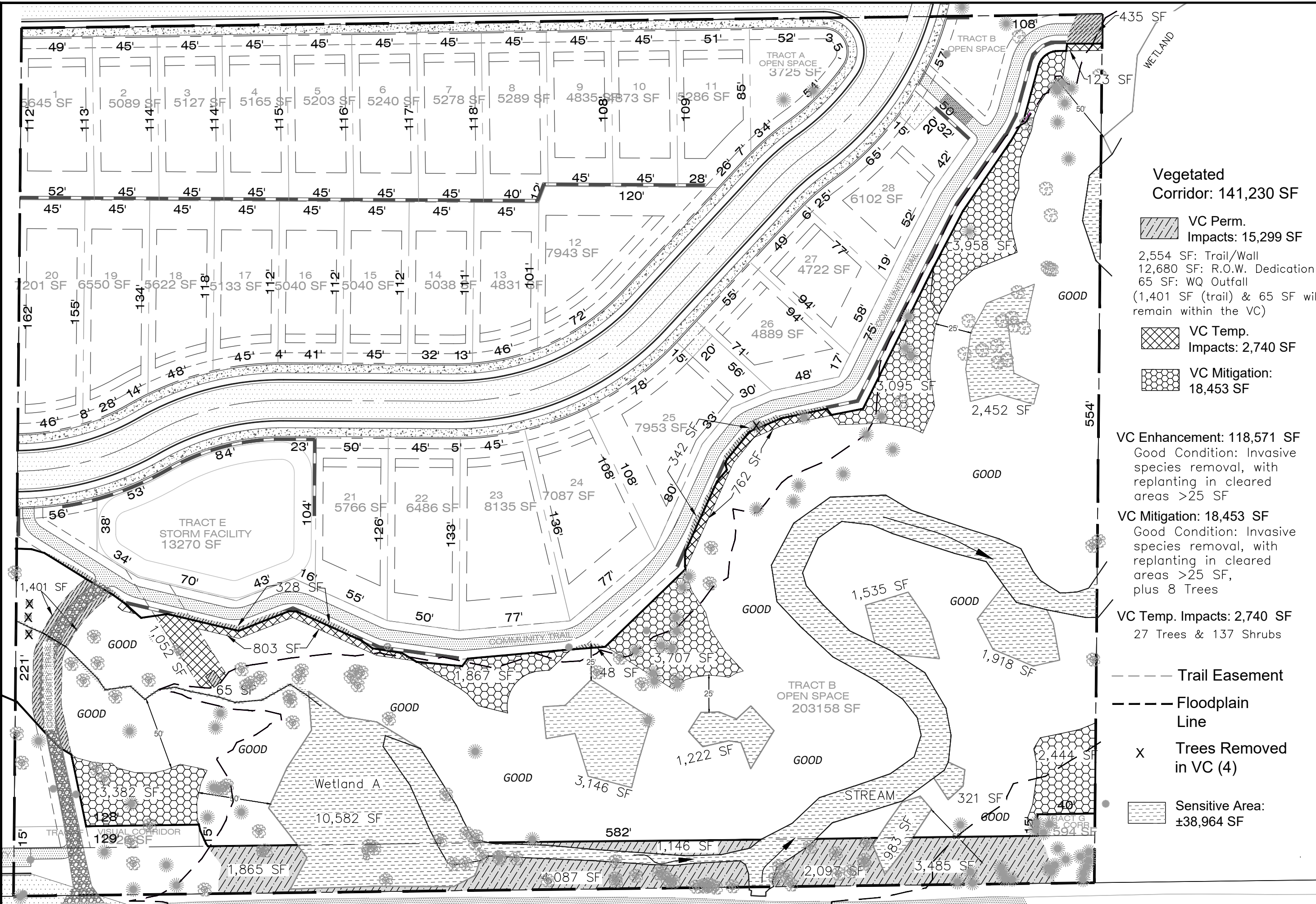
6. No practicable alternative to location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor. There is no practicable alternative to the expansion of SW Brookman Road. This east/west arterial connects to 99W to the west for all of the developing neighborhoods in the area. Any proposed east/west arterial that functions in this capacity, in this area, will require crossing of Sensitive Areas and therefore will disturb Sensitive Areas or Vegetated Corridor.
7. Proposed encroachment provides public benefits. The site plan provides a 18,453 square foot mitigation area within an approximately 4-acre open space area between the proposed subdivision and the existing SW Brookwood Road. The large contiguous open space area will provide water quality public benefit to serve the surrounding Cedar Creek and downstream Tualatin River

watershed by preserving the hydrologic functions of the Cedar Creek, the associated wetlands and floodplain in the large open space.

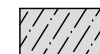

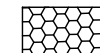
Existing encroachment currently exists at the SW Brookwood Road crossing of Cedar Creek and the 2-lane road is narrow, without shoulders or sidewalks and sight lines are limited. The future expansion of this road will increase safety for pedestrians and vehicles along this busy arterial as the population increases. The trail will connect with other regional trails providing safe outdoor recreation opportunities and provide safe commuting options for non-motorized travel.

Attachments:

Figure 4 Site Plan  
Arborists Report  
Tree Removal Plan







**Vegetated Corridor: 141,230 SF**

-  **VC Perm.**  
Impacts: 15,299 SF
- 2,554 SF: Trail/Wall  
12,680 SF: R.O.W. Dedication  
65 SF: WQ Outfall  
(1,401 SF (trail) & 65 SF will remain within the VC)
-  **VC Temp.**  
Impacts: 2,740 SF
-  **VC Mitigation:**  
18,453 SF

**VC Enhancement: 118,571 SF**  
Good Condition: Invasive species removal, with replanting in cleared areas >25 SF

**VC Mitigation: 18,453 SF**  
Good Condition: Invasive species removal, with replanting in cleared areas >25 SF, plus 8 Trees

**VC Temp. Impacts: 2,740 SF**  
27 Trees & 137 Shrubs

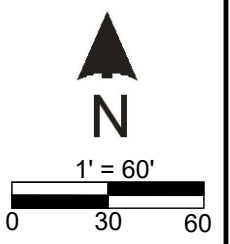
-  Trail Easement
-  Floodplain Line
-  Trees Removed in VC (4)
-  Sensitive Area: ±38,964 SF

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Environmental  
Science &  
Assessment, LLC

**Site Plan**  
**Riverside at Cedar Creek**  
**Sherwood, Oregon**



Base Map Source:  
PDG, Inc.

Mod. By: KR

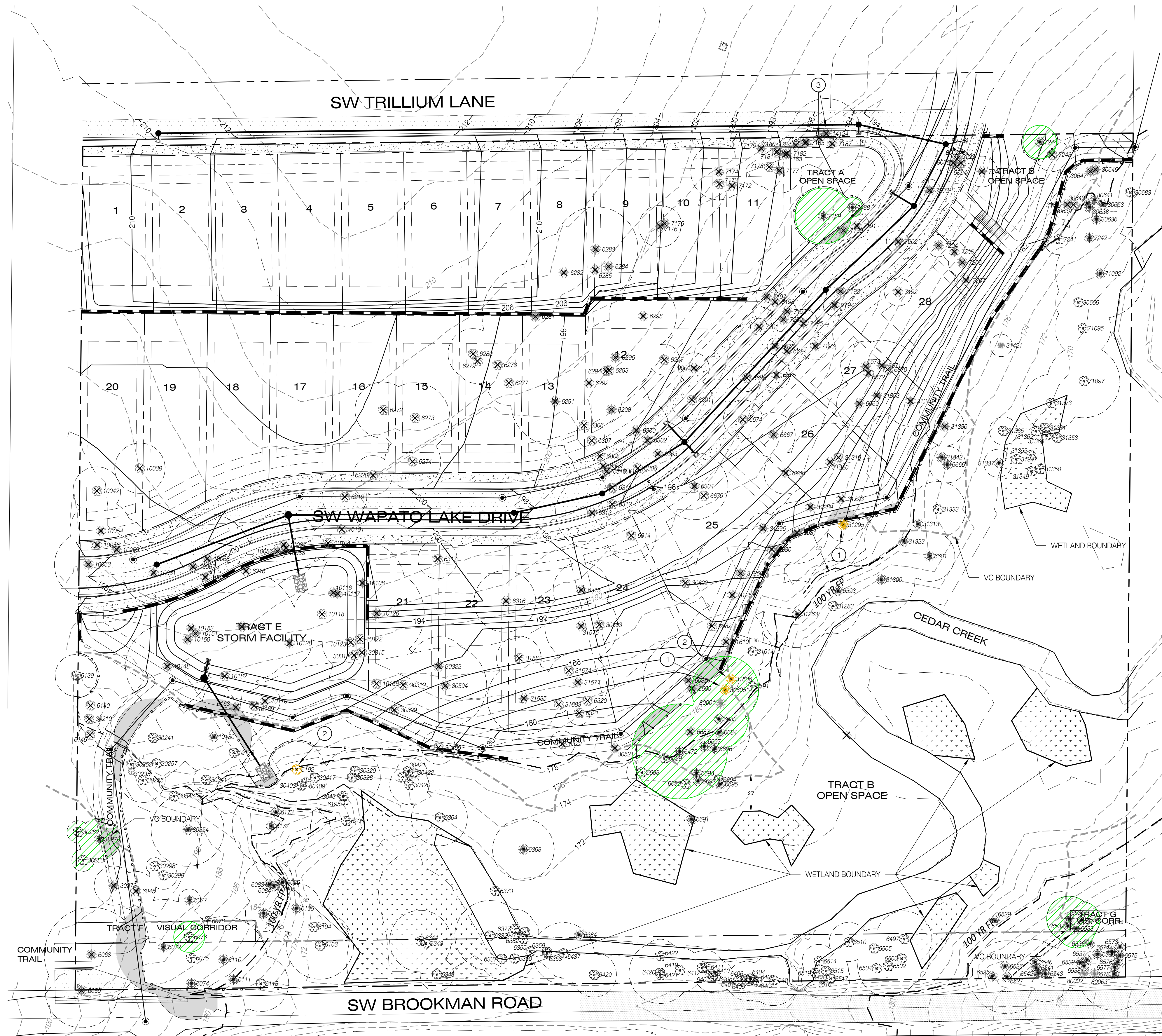
Date: 2/20

Job: 19029

Rev: 4/20

**Fig. 4**

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### LEGEND

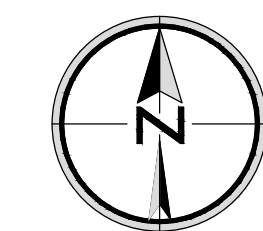
- RIGHT-OF-WAY LINE
- BOUNDARY LINE
- EXISTING LOT LINE
- CENTER LINE
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- EXISTING TREE REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING DRIP LINE
- TREE PROTECTION FENCING
- DRIP LINE ENCROACHMENT AREA (ARBORIST SUPERVISION REQUIRED)
- TREE CANOPY TO REMAIN IN NET DEVELOPABLE AREA (TOTAL = 9,906 SF)
- EXISTING TREE WITH SPECIFIC TREATMENT

### GENERAL TREE NOTES

1. EXISTING TREE LIKELY TO RETAIN IN CONSTRUCTION. TREES #31295 AND #31605 ARE CLASSIFIED AS "LIKELY TO RETAIN" BECAUSE THESE TREES HAVE THE GREATEST POTENTIAL FOR CONSTRUCTION IMPACTS DURING RETAINING WALL CONSTRUCTION, BUT ARE OTHERWISE SUITABLE FOR PRESERVATION. EVERY REASONABLE EFFORT SHALL BE MADE TO PRESERVE THESE TREES AND THE DEVELOPER IS RESPONSIBLE FOR COORDINATING WITH THE PROJECT ARBORIST TO MONITOR AND DOCUMENT RETAINING WALL EXCAVATION BENEATH THE DRIPLINE AREAS. IF THE PROJECT ARBORIST DETERMINES THAT NECESSARY ROOT IMPACTS ARE LIKELY TO IMPACT THE VIABILITY OR STABILITY OF EITHER TREE, THE DEVELOPER MAY PROCEED WITH REMOVAL OF THE TREES WITHOUT DELAY AND THE ARBORIST SHALL SUBMIT DOCUMENTATION TO THE CITY REGARDING THE NECESSITY OF REMOVAL.
2. CREATE SNAG OUT OF EXISTING TREE. REFER TO TREE PROTECTION SPECIFICATION #9.
3. OBTAIN ADJACENT OWNER'S PERMISSION PRIOR TO REMOVING BOUNDARY AND OFF-SITE TREES #14124 AND #14125.

### TREE PROTECTION SPECIFICATIONS

1. **PRE-CONSTRUCTION CONFERENCE.** THE DEVELOPER SHALL ARRANGE AN ON-SITE MEETING WITH THE PROJECT ARBORIST IN ORDER TO REVIEW THE TREE PRESERVATION AND REMOVAL PLAN AND DISCUSS METHODS OF TREE REMOVAL AND TREE PROTECTION PRIOR TO ANY CONSTRUCTION.
2. **TREE PROTECTION ZONE.** THE TREE PROTECTION ZONE (TPZ) IS DEFINED AS THE DRIPLINE OF PROTECTED TREES REGARDLESS OF THE LOCATION OF PROTECTION FENCING; TPZS ARE DEPICTED ON THE TREE PRESERVATION AND REMOVAL PLAN. ANY WORK THAT IS PERFORMED BENEATH THE DRIPLINE OF A PROTECTED TREE SHALL BE MONITORED AND DOCUMENTED BY THE PROJECT ARBORIST. AREAS OF TPZ ENCROACHMENT REQUIRING THE DEVELOPER TO COORDINATE WITH THE PROJECT ARBORIST ARE SHADEN ON THE TREE PRESERVATION AND REMOVAL PLAN.
3. **PROTECTION FENCING.** TREES TO BE PRESERVED SHALL BE PROTECTED BY INSTALLATION OF TREE PROTECTION FENCING AS DEPICTED ON THE TREE PRESERVATION AND REMOVAL SITE PLAN TO PREVENT INJURY TO TREE TRUNKS OR ROOTS, OR SOIL COMPACTION. PROTECTION FENCING SHALL BE CHAIN LINK OR GALVANIZED STEEL ON METAL STAKES, INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY AND MAINTAINED IN GOOD REPAIR THROUGHOUT CONSTRUCTION. THE PROTECTION FENCING SHALL NOT BE MOVED, REMOVED OR ENTERED BY EQUIPMENT WITHOUT PRIOR APPROVAL OF THE PROJECT ARBORIST; ADJUSTMENTS TO THE LOCATION OF PROTECTION FENCING SHALL BE DOCUMENTED BY THE PROJECT ARBORIST. TREES LOCATED MORE THAN 30-FEET FROM CONSTRUCTION ACTIVITY SHOULD NOT REQUIRE FENCING.
4. **PROHIBITIONS.** NO SOIL COMPACTION, MATERIALS OR SPOILS STORAGE SHALL BE ALLOWED WITHIN THE TPZ. WITHOUT AUTHORIZATION FROM THE PROJECT ARBORIST, NONE OF THE FOLLOWING SHALL OCCUR BENEATH THE DRIPLINE OF ANY PROTECTED TREE:
  - a. GRADE CHANGE OR CUT AND FILL;
  - b. NEW IMPERVIOUS SURFACES;
  - c. UTILITY OR DRAINAGE FIELD PLACEMENT; OR
  - d. VEHICLE MANEUVERING.
 ROOT PROTECTION ZONES MAY BE ENTERED FOR TASKS LIKE SURVEYING, MEASURING, AND, SAMPLING. FENCES MUST BE CLOSED UPON COMPLETION OF THESE TASKS. CONSTRUCTION THAT IS NECESSARY BENEATH PROTECTED TREE DRIPLINES SHALL BE PERFORMED UNDER ARBORIST SUPERVISION.
5. **EROSION CONTROL.** SILT FENCING REQUIRED TO BE INSTALLED WITHIN TPZS SHALL NOT BE TRENCHED IN PER MANUFACTURER SPECIFICATIONS TO AVOID ROOT DAMAGE. INSTEAD, ROLL THE BASE OF THE SILT FENCE AROUND A STRAW WATTLE AND STAKE THE WATTLE SECURELY INTO THE GROUND OR USE COMPOST SOCKS OR OTHER TECHNIQUES THAT AVOID TREE ROOT IMPACTS.
6. **TREE REMOVAL.** TREES TO BE REMOVED SHALL BE CLEARLY IDENTIFIED WITH TREE-MARKING PAINT OR OTHER METHODS APPROVED IN ADVANCED BY THE PROJECT ARBORIST. TREE REMOVAL SHALL BE PERFORMED BY A QUALIFIED TREE SERVICE. DIRECTIONALLY FELL OR SURGICALLY REMOVE TREES TO AVOID CONTACT OR OTHERWISE PREVENT DAMAGE TO THE TRUNKS AND BRANCHES OF TREES TO BE PRESERVED. NO VEHICLES OR HEAVY EQUIPMENT SHALL BE PERMITTED WITHIN TPZS DURING TREE REMOVAL OPERATIONS.
7. **SNAG CREATION.** TREES #6192 AND #31606 LOCATED WITHIN THE VEGETATED CORRIDOR BUT NEAR PROPOSED CONSTRUCTION SHALL BE RETAINED AS WILDLIFE SNAGS RATHER THAN REMOVED TO GROUND LEVEL. SNAG CREATION SHALL BE PERFORMED BY A QUALIFIED TREE SERVICE AND WORK SHOULD BE COMPLETED BY HAND WITHOUT THE USE OF HEAVY EQUIPMENT IN THE TPZ. DELIMB THESE TREES AND REDUCE TRUNKS HEIGHTS TO LESS THAN 1.5-TIMES THE DISTANCE TO HIGH VALUE TARGETS TO MINIMIZE RISK.
8. **STUMP REMOVAL.** STUMPS OF TREES PLANNED FOR REMOVAL THAT ARE LOCATED BENEATH THE DRIPLINE OF PROTECTED TREES SHALL REMAIN IN THE GROUND WHERE FEASIBLE. OTHERWISE, STUMPS MAY BE REMOVED BY STUMP GRINDING TO JUST BELOW THE GROUND SURFACE OR EXTRACTED FROM THE GROUND UNDER PROJECT ARBORIST SUPERVISION.
9. **PRUNING.** TREES TO BE PRESERVED MAY REQUIRE MINOR PRUNING FOR OVERHEAD CLEARANCE AND TO REMOVE DEAD AND DEFECTIVE BRANCHES FOR SAFETY. THE PROJECT ARBORIST CAN HELP IDENTIFY WHETHER PRUNING IS NECESSARY ONCE TREES PLANNED FOR REMOVAL HAVE BEEN REMOVED AND THE SITE IS STAKED AND PREPARED FOR CONSTRUCTION. TREE REMOVAL AND PRUNING SHALL BE PERFORMED BY A QUALIFIED TREE SERVICE.
10. **EXCAVATION BENEATH PROTECTED TREE DRIPLINES.** EXCAVATION BENEATH PROTECTED TREE DRIPLINES SHALL BE AVOIDED IF ALTERNATIVES ARE AVAILABLE. IF EXCAVATION IS UNAVOIDABLE, THE DEVELOPER SHALL COORDINATE WITH THE PROJECT ARBORIST TO EVALUATE THE PROPOSED EXCAVATION TO DETERMINE METHODS TO MINIMIZE IMPACTS TO TREES. THIS CAN INCLUDE TUNNELING, HAND DIGGING, USING A MODIFIED PROFILE OR OTHER APPROACHES.
11. **ROOT PRUNING.** ROOTS SMALLER THAN 2-INCHES IN DIAMETER MAY BE PRUNED CLEAN TO SOUND WOOD USING A SHARP SAW AS DIGGING PROGRESSES TO AVOID PULLING AND TEARING ROOTS. EXCAVATION IMMEDIATELY ADJACENT TO ROOTS LARGER THAN 2-INCHES IN DIAMETER WITHIN THE TPZ SHALL BE BY HAND OR OTHER NON-INVASIVE TECHNIQUES TO ENSURE THAT ROOTS ARE NOT DAMAGED. THE PROJECT ARBORIST OR SHALL ASSESS AND DOCUMENT ROOTS 2-INCHES AND LARGER IN DIAMETER PRIOR TO IMPACTS. WHERE FEASIBLE, THESE SHALL BE PROTECTED BY TUNNELING OR OTHER MEANS TO AVOID DESTRUCTION OR DAMAGE. EXCEPTIONS CAN BE MADE IF, IN THE OPINION OF THE PROJECT, UNACCEPTABLE DAMAGE WILL NOT OCCUR TO THE TREE.
12. **LANDSCAPING.** FOLLOWING CONSTRUCTION AND PRIOR TO LANDSCAPING, THE PROTECTION FENCING MAY BE REMOVED. WHERE LANDSCAPING IS DESIRED, APPLY APPROXIMATELY 3-INCHES OF MULCH BENEATH THE DRIPLINE OF PROTECTED TREES, BUT NOT DIRECTLY AGAINST TREE TRUNKS. SHRUBS AND GROUND COVER PLANTS MAY BE PLANTED WITHIN TPZS. IF IRRIGATION IS USED, USE DRIP IRRIGATION ONLY BENEATH THE DRIPLINES OF PROTECTED TREES; INSTALL DRIP IRRIGATION LINES ON THE GROUND SURFACE AND COVER WITH MULCH (NO TRENCHING TO INSTALL IRRIGATION LINES BENEATH PROTECTED TREE DRIPLINES).
13. **QUALITY ASSURANCE.** THE PROJECT ARBORIST WILL BE AVAILABLE ON-CALL DURING CONSTRUCTION TO SUPERVISE PROPER EXECUTION OF THIS PLAN; IT IS THE DEVELOPER'S RESPONSIBILITY TO COORDINATE WITH THE PROJECT ARBORIST IN A TIMELY MANNER AS NEEDED.
14. **FINAL REPORT.** AFTER THE PROJECT HAS BEEN COMPLETED, THE PROJECT ARBORIST SHOULD PROVIDE A FINAL REPORT THAT DESCRIBES THE MEASURES NEEDED TO MAINTAIN AND PROTECT THE REMAINING TREES.



SCALE  
0 20 40  
1 INCH = 40 FEET  
SHERWOOD CASEFILE #

## PRELIMINARY TREE PRESERVATION AND REMOVAL PLAN

Designed by	WLS	Date	2/2020
Drawn by	BDH	Date	2/2020
Reviewed by	WLS	Date	2/2020
Project No.	131-025	REF.	
Horiz. Scale:		Vert. Scale:	

Project  
RIVERSIDE AT CEDAR CREEK  
No.  
131-025  
Type  
PLANNING  
Sheet



## Riverside at Cedar Creek – Sherwood, Oregon

### Arborist Report

### March 22, 2020

MHA19064

#### **Purpose**

This arborist report describes the tree preservation and removal plan for the Riverside at Cedar Creek subdivision project in Sherwood, Oregon, pursuant to Sherwood Code Section 16.142.070. This report describes the existing trees located on the project site, provides recommendations for tree protection and removal, and explains how the City's tree canopy requirements are satisfied. This report is based on observations made by International Society of Arboriculture (ISA) Board Certified Master Arborist and Qualified Tree Risk Assessor Morgan Holen (PN-6145B) during site visits conducted on January 20 and March 5, 2020, and subsequent site plan coordination with Riverside Homes and Pioneer Design Group.

#### **Scope of Work and Limitations**

Morgan Holen & Associates was contracted by Riverside Homes to collect tree inventory data for existing individual trees and develop an arborist report to address the tree preservation standards contained in Sherwood Code Section 16.142.070, *Trees on Property Subject to Certain Land Use Applications*.

Visual Tree Assessment (VTA) was performed on 351 individual trees surveyed across the site. VTA is the standard process whereby the inspector visually assesses the tree from a distance and up close, looking for defect symptoms and evaluating overall condition and vitality of individual trees. The individual surveyed trees were evaluated in terms of species, diameter, crown radius, general condition and potential construction impacts.

Beyond the individual tree survey and within the mapped vegetated corridor where no development is proposed, existing trees were not surveyed. This area does not meet the City's definition of woodland because there are fewer than 50 trees per 20,000 square feet. Regardless, the area is unaffected by the proposed development and City staff said it could be described more generally without individual tree data. Therefore, we walked the entire area tallying trees by species and diameter and noting general conditions. A summary of trees in the unaffected area of the vegetated corridor is enclosed and no canopy credit is accounted for since these trees are located beyond the net development site.

Following the tree inventory fieldwork, we coordinated with the design team to develop the tree preservation and removal plan and discuss tree canopy requirements.

The client may choose to accept or disregard the recommendations contained herein, or seek additional advice. Neither this author nor Morgan Holen & Associates, LLC, have assumed any responsibility for liability associated with the trees on or adjacent to this site.

#### **General Description**

The Cedar Creek subdivision project is located at 17433 SW Brookman Road in Sherwood, Oregon. Much of the site is heavily treed and in a relatively natural and unmanaged stand grown condition, with some planted landscape trees near the existing home. Cedar Creek runs through the southeast quadrant of the site and a vegetated corridor covers most of the south quadrant.

The existing site includes one home and two barns, which are planned for demolition. The project proposes to create 28 single family residential lots, a new street to access the subdivision from the north, two open space tracts, a storm water tract and a community trail. The total net development site, as calculated by Pioneer Design Group, is 176,001 square feet in size. This does not include the SW Brookman Road right of way or environmentally constrained areas including the 100-year flood plain or vegetated corridor. The proposed trail running along the north boundary of the vegetated corridor requires grading and retaining wall construction that will impact a few trees along the boundary as described herein, otherwise trees within environmentally constrained areas are unaffected by the proposed development but do not provide canopy credit.

### Tree Inventory

In all, 351 existing trees were surveyed and inventoried, including 21 different species. Table 1 provides a summary of the quantity of inventoried trees by species and general location, either: On-site (not within environmentally constrained areas or rights-of-way); Boundary (limited to tree #14125 on the northern boundary); Off-Site (limited to tree #14124 near the northern boundary); ROW (for trees located in the SW Brookman Road right-of-way); and Env (for trees located within environmentally constrained areas including the 100-year flood plain or vegetated corridor). A complete description of individual trees is provided in the enclosed tree data (attachment A).

**Table 1. Count of Trees by Species and General Location – Cedar Creek Subdivision, Sherwood, OR.**

Common Name	Species Name	On-Site	Boundary	Off-Site	ROW	Env	Total	Percent*
apple	<i>Malus spp.</i>	2				0	2	1%
bigleaf maple	<i>Acer macrophyllum</i>	5				0	5	1%
black hawthorn	<i>Crataegus douglasii</i>				4	0	4	1%
Cherry	<i>Prunus spp.</i>	12				0	12	3%
deciduous	Unknown	1				0	1	0.3%
dogwood	<i>Cornus spp.</i>	1				0	1	0.3%
Douglas-fir	<i>Pseudotsuga menziesii</i>	118	1	1	26	38	184	52%
English hawthorn^	<i>Crataegus monogyna</i>	8			2	8	18	5%
English holly^	<i>Ilex aquifolium</i>	1				1	2	1%
grand fir	<i>Abies grandis</i>	1				0	1	0.3%
Lombardy poplar	<i>Populus nigra</i>					2	2	1%
London plane	<i>Platanus × acerifolia</i>	2				0	2	1%
Oregon ash	<i>Fraxinus latifolia</i>	14			27	32	73	21%
pacific yew	<i>Taxus brevifolia</i>					1	1	0.3%
paper birch	<i>Betula papyrifera</i>	1				0	1	0.3%
plum	<i>Prunus spp.</i>	2				0	2	1%
red alder	<i>Alnus rubra</i>					6	6	2%
scots pine	<i>Pinus sylvestris</i>	1				0	1	0.3%
Scouler's willow	<i>Salix scouleriana</i>	1			1	1	3	1%
sweet cherry^	<i>Prunus avium</i>	10			7	8	25	7%
western redcedar	<i>Thuja plicata</i>	2				3	5	1%
<b>Total</b>		<b>182</b>	<b>1</b>	<b>1</b>	<b>67</b>	<b>100</b>	<b>351</b>	
<b>Percent*</b>		<b>52%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>19%</b>	<b>28%</b>		<b>100%</b>

^Identifies species widely accepted as being invasive in our region.

\*Percent total may not sum to 100% due to rounding.



An additional 127 trees were accounted for beyond the individual tree survey and within the mapped vegetated corridor where no development is proposed. Attachment B provides a summary of the additional tree data collected for the unaffected vegetated corridor area, which encompasses approximately 4-acres including Cedar Creek. Most of these additional trees are mature Oregon ashes (*Fraxinus latifolia*) in fair to poor condition with dead and broken branches and trunk and crown decay. Although they are not in the best condition, these trees are suitable for preservation in the natural area considering that there is low target potential for risk to people or property, and they provide good wildlife habitat and stream shading.

### Tree Plan Recommendations

Table 2 provides a summary of proposed treatments by general location as illustrated on the tree preservation and removal plan prepared by Pioneer Design Group.

**Table 2. Count of Trees by Treatment and General Location – Cedar Creek Subdivision, Sherwood, OR.**

Treatment	On-Site	Boundary	Off-Site	ROW	Env	Total	Percent*
Unaffected	4			61	48	113	33%
Retain	9			4	45	58	17%
Likely to Retain	1				1	2	< 1%
Create Snag					2	2	< 1%
Remove	168	1	1	2	4	176	50%
<b>Total</b>	<b>182</b>	<b>1</b>	<b>1</b>	<b>67</b>	<b>100</b>	<b>351</b>	<b>100%</b>

\*Percent total may not sum to 100% due to rounding.

Of the 351 inventoried trees, 113 (33%) are unaffected by the proposed development including four on-site trees in and adjacent to proposed tract G, 61 trees located along the SW Brookman Road right of way and 48 trees within environmental constrained areas. This is in addition to the 127 non-surveyed trees accounted for in attachment B. Tree protection measures are not needed for trees classified as unaffected because no work is proposed nearby.

Another 58 trees (17%) are planned for retention with tree protection measures during construction including nine on-site trees (two in open space tract A, one in open space tract B, three near the western boundary adjacent to the proposed trail, and three south of the proposed trail just beyond the 100-year flood plain and vegetated corridor boundaries), four trees in the right of way near the southwest corner of the site near proposed trail construction and grading, and 45 trees within environmentally constrained areas adjacent to proposed retaining wall, trail and stormwater outfall construction.

Sherwood Code Section 16.142.040.G provides tree protection requirements, mainly that trees to be retained are protected with temporary fencing at the dripline or as recommended by a Certified Arborist. The code does require that work within the dripline be supervised by a qualified professional on-site during construction. The tree preservation and removal plan prepared by Pioneer Design Group in coordination with us illustrates which trees are planned for removal and which trees will be protected, specifying tree protection measures and where on-site supervision by the project arborist is required. Tree protection specifications corresponding with the tree plan are also provided in this report.

Two trees are classified as likely to retain, including tree #31605, a 36-inch diameter Douglas-fir (*Pseudotsuga menziesii*) located on-site, and tree #31295, a 9-inch diameter western redcedar (*Thuja plicata*) located in the vegetated corridor. Both trees are in good condition and generally suitable for preservation. However, the proposed trail and associated retaining wall construction encroaches within the dripline area. The tree plan already specifies that work beneath the dripline of any protected tree be performed under arborist supervision. Unlike other trees planned for retention, the potential impacts at these two trees are greater. The objective of classifying these trees as likely to retain is to provide protection for them, but to allow for their removal without delay if and when the project arborist determines that the extent of actual and unavoidable impacts will result in detrimental harm to the health or stability of one or both trees. At that point, the arborist would document the conditions that led to a removal recommendation and submit that documentation to the Owner for submittal to the City, while contractors are able to proceed with removal without delay. We hope that the City of Sherwood will accept this approach in an effort to retain these trees along the proposed trail.

Two potentially hazardous trees located within the vegetated corridor, including tree #6192, a 19-inch diameter Oregon ash in poor condition with an old codominant stem failure, trunk decay and poor crown structure, and tree #31616, a 25-inch diameter Douglas-fir in fair condition but with an old broken top and multiple leaders, are both classified as create snag. This means that rather than removing the whole tree, each tree would be delimited and reduced in height to non-hazardous lengths based on proximity to the adjacent trail and left as standing dead trees for wildlife habitat.

The tree preservation and removal plan identifies trees with these special classifications and includes notes defining how likely to retain trees shall be protected and specifications for snag creation.

The other 176 trees (50%) are planned for removal for the purposes of site development. Sherwood Code Section 16.142.070.D stipulates that trees may be considered for removal to accommodate development including buildings, parking, walkways, grading, etc., provided that tree canopy requirements are satisfied. Reasons for the proposed removal are summarized below by general location:

- 168 on-site trees are planned for removal, including 73 trees within proposed building lots, 51 trees within the proposed new street and sidewalks, 15 trees within the proposed water quality facility, 27 trees within the proposed trail alignment or along the associated retaining wall, and two trees in proposed open space areas that are not suitable for preservation because of poor condition or structure (#6687 and #7240).
- One tree on the northern boundary (#14125) and one tree located just off-site near the northern boundary (#14124) are planned for removal for proposed sidewalk construction. Prior written consent of the adjacent property owner is typically required for boundary or off-site tree removal.
- Two trees are planned for removal from the right of way in the southwest corner of the site for proposed grading and trail construction (#6687 and #7240).
- Four trees are planned for removal from the vegetated corridor including two decrepit Lombardy poplars (*Populus nigra*) (#6146 and #30210) and one invasive English hawthorn (*Crataegus monogyna*) (#6140) located in a group near the western property boundary just west of the proposed trail and one Douglas-fir (#6681) along the proposed retaining wall alignment south of the proposed trail.

We did coordinate with Pioneer Design Group to recommend adjustments specifically to the proposed trail alignment and retaining wall construction as feasible, which resulted in far fewer tree impacts and better tree protection. The proposed removals are necessary to accommodate the development and tree canopy requirements are satisfied as discussed in the next section of this report.

### **Required Tree Canopy**

Sherwood Code Section 16.142.040.D(2) requires that the net development site of a residential development achieve a minimum 40-percent tree canopy. This requirement can be achieved by retaining existing trees or planting new trees. Existing trees provide double canopy credit based on existing canopy spreads. Canopy credit for trees proposed to be planted is based on the expected mature canopy of each species and is counted for each tree regardless of an overlap of multiple tree canopies. The total size of the net development area is 176,001 square feet. Therefore, 70,400 square feet of tree canopy is required ( $176,001 / 0.40 = 70,400$ ).

Pioneer Design Group plotted the driplines of the 13 existing on-site trees planned for retention on the Tree Preservation and Removal Plan based on crown radius data we provided in the inventory. This canopy area was delineated with a unique hatching for on-site trees planned for preservation. The total canopy area for retaining existing trees is 9,906 square feet, which equates to 19,812 square feet of canopy credit ( $9,906 \times 2 = 19,812$ ). Note that the one on-site tree classified as likely to retain was not included in the existing tree canopy credit just in case it is removed during construction.

A minimum of 50,588 square feet of tree canopy is needed by planting new trees ( $70,400 - 19,812 = 50,588$ ). A Registered Landscape Architect with Pioneer Design Group developed the proposed planting plan. Sheet L2 provides the canopy credit calculation for 48 proposed street trees, which totals 62,409 square feet.

Therefore, the minimum required tree canopy is satisfied ( $19,812$  retained +  $62,409$  planted =  $82,221 / 176,001 = 47\%$ ). In addition, numerous other trees are proposed for planting in open space tracts and the storm water facility.

### **Tree Protection Standards**

The trees planned for retention will need special consideration to assure their protection during construction. We recommend a preconstruction meeting with the owner, contractors, and project arborist to review tree protection measures and address questions or concerns on site. Tree protection measures include:

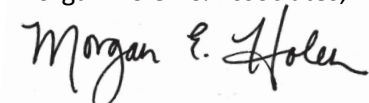
1. **Preconstruction Conference.** The developer shall arrange an on-site meeting with the project arborist in order to review the Tree Preservation and Removal Plan and discuss methods of tree removal and tree protection prior to any construction.
2. **Tree Protection Zone.** The Tree Protection Zone (TPZ) is defined as the dripline of protected trees regardless of the location of protection fencing; TPZs are depicted on the Tree Preservation and Removal Plan. Any work that is performed beneath the dripline of a protected tree shall be monitored and documented by the project arborist. Areas of TPZ encroachment requiring the developer to coordinate with the project arborist are shaded on the Tree Preservation and Removal Plan.

3. **Protection Fencing.** Trees to be preserved shall be protected by installation of tree protection fencing as depicted on the Tree Preservation and Removal Site Plan to prevent injury to tree trunks or roots, or soil compaction. Protection fencing shall be chain link or galvanized steel on metal stakes, installed prior to any ground disturbing activity and maintained in good repair throughout construction. The protection fencing shall not be moved, removed or entered by equipment without prior approval of the project arborist; adjustments to the location of protection fencing shall be documented by the project arborist. Trees located more than 30-feet from construction activity should not require fencing.
4. **Prohibitions.** No soil compaction, materials or spoils storage shall be allowed within the TPZ. Without authorization from the project arborist, none of the following shall occur beneath the dripline of any protected tree:
  - a. Grade change or cut and fill;
  - b. New impervious surfaces;
  - c. Utility or drainage field placement; or
  - d. Vehicle maneuvering.Root protection zones may be entered for tasks like surveying, measuring, and, sampling. Fences must be closed upon completion of these tasks. Construction that is necessary beneath protected tree driplines shall be performed under arborist supervision.
5. **Erosion Control.** Silt fencing required to be installed within TPZs shall not be trenched in per manufacturer specifications to avoid root damage. Instead, roll the base of the silt fence around a straw wattle and stake the wattle securely into the ground or use compost socks or other techniques that avoid tree root impacts.
6. **Tree Removal.** Trees to be removed shall be clearly identified with tree-marking paint or other methods approved in advanced by the project arborist. Tree removal shall be performed by a Qualified Tree Service. Directionally fell or surgically remove trees to avoid contact or otherwise prevent damage to the trunks and branches of trees to be preserved. No vehicles or heavy equipment shall be permitted within TPZs during tree removal operations.
7. **Snag Creation.** Trees #6192 and #31606 located within the Vegetated Corridor but near proposed construction shall be retained as wildlife snags rather than removed to ground level. Snag creation shall be performed by a Qualified Tree Service and work should be completed by hand without the use of heavy equipment in the TPZ. Delimb these trees and reduce trunks heights to less than 1.5-times the distance to high value targets to minimize risk.
8. **Stump Removal.** Stumps of trees planned for removal that are located beneath the dripline of protected trees shall remain in the ground where feasible. Otherwise, stumps may be removed by stump grinding to just below the ground surface or extracted from the ground under project arborist supervision.
9. **Pruning.** Trees to be preserved may require minor pruning for overhead clearance and to remove dead and defective branches for safety. The project arborist can help identify whether pruning is necessary once trees planned for removal have been removed and the site is staked and prepared for construction. Tree removal and pruning shall be performed by a Qualified Tree Service.

10. **Excavation Beneath Protected Tree Driplines.** Excavation beneath protected tree driplines shall be avoided if alternatives are available. If excavation is unavoidable, the developer shall coordinate with the project arborist to evaluate the proposed excavation to determine methods to minimize impacts to trees. This can include tunneling, hand digging, using a modified profile or other approaches.
11. **Root Pruning.** Roots smaller than 2-inches in diameter may be pruned clean to sound wood using a sharp saw as digging progresses to avoid pulling and tearing roots. Excavation immediately adjacent to roots larger than 2-inches in diameter within the TPZ shall be by hand or other non-invasive techniques to ensure that roots are not damaged. The project arborist or shall assess and document roots 2-inches and larger in diameter prior to impacts. Where feasible, these shall be protected by tunneling or other means to avoid destruction or damage. Exceptions can be made if, in the opinion of the project, unacceptable damage will not occur to the tree.
12. **Landscaping.** Following construction and prior to landscaping, the protection fencing may be removed. Where landscaping is desired, apply approximately 3-inches of mulch beneath the dripline of protected trees, but not directly against tree trunks. Shrubs and ground cover plants may be planted within TPZs. If irrigation is used, use drip irrigation only beneath the driplines of protected trees; install drip irrigation lines on the ground surface and cover with mulch (no trenching to install irrigation lines beneath protected tree driplines).
13. **Quality Assurance.** The project arborist will be available on-call during construction to supervise proper execution of this plan; it is the developer's responsibility to coordinate with the project arborist in a timely manner as needed.
14. **Final Report.** After the project has been completed, the project arborist should provide a final report that describes the measures needed to maintain and protect the remaining trees.

Please contact us if you have questions or need any additional information. Thank you for choosing Morgan Holen & Associates to provide consulting arborist services for the Riverside at Cedar Creek subdivision project.

Thank you,  
Morgan Holen & Associates, LLC



Morgan E. Holen, Member  
ISA Board Certified Master Arborist, PN-6145B  
ISA Tree Risk Assessment Qualified  
Forest Biologist

Enclosures: Attachment A: Tree Inventory  
Attachment B: Additional Data for Unaffected Vegetated Corridor



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
6045	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	14	F		Remove	Trail
6059	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	26,38	26	G	Codominant stems, basal wound	Remove	Grading
6068	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	53	34	E		Remove	Trail
6072	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	61	34	G	Codominant stems, some included bark	Retain	N/A
6074	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	26	G	Lower trunk swelling	Retain	N/A
6075	ROW	Dec	sweet cherry	<i>Prunus avium</i>	7	11	F	Nuisance species	Unaffected	N/A
6076	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	6	11	F	Nuisance species	Retain	N/A
6077	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	8	F		Unaffected	N/A
6078	VC	Dec	sweet cherry	<i>Prunus avium</i>	7	11	F	Nuisance species	Unaffected	N/A
6083	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	37	18	G	Dominant crown class, some ivy	Unaffected	N/A
6084	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	22	14	F	Codominant crown class, major asymmetry, some ivy	Unaffected	N/A
6085	VC	Dec	red alder	<i>Alnus rubra</i>	12	10	F	Poor structure, ivy	Unaffected	N/A
6086	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	6	P	Suppressed	Unaffected	N/A
6103	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	9,15, 17,24	24	F	Poor structure, dead and broken branches, crown decay	Unaffected	N/A
6104	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	23	16	P	Advanced trunk decay, previous failures	Unaffected	N/A
6105	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	37	18	G	P. pini conks	Unaffected	N/A
6107	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	13	G	Codominant crown class	Unaffected	N/A
6110	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	47	31	G	Some history of branch failure	Unaffected	N/A
6111	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	24	F	Poor structure, old broken top	Retain	N/A



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
6113	ROW	Dec	sweet cherry	<i>Prunus avium</i>	15	20	P	Nuisance species, trunk damage	Retain	N/A
6139	VC	Dec	red alder	<i>Alnus rubra</i>	8,9	15	F		Retain	N/A
6140	VC	Dec	English hawthorn	<i>Crataegus monogyna</i>	10	10	P	Nuisance species, very poor structure	Remove	Condition
6146	VC	Dec	Lombardy poplar	<i>Populus nigra</i>	41	8	P	Progressive decline, severe crown decay, very poor structure, inherent species limitations	Remove	Condition
6163	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	43	24	G	Codominant leaders with some included bark	Remove	Trail
6173	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	34	26	G	Self-correcting lean on steep bank	Retain	N/A
6177	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	28	G	Spur leader	Retain	N/A
6192	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	19	17	P	Old codominant stem failure, trunk decay, poor crown structure	Create Snag	Condition
6195	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10	10	F		Unaffected	N/A
6205	VC	Dec	red alder	<i>Alnus rubra</i>	18	12	P	Broken top	Unaffected	N/A
6214	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	15	0	D	Wind snapped	Retain	N/A
6218	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	9	F	One-sided crown	Remove	WQ Facility
6219	On-Site	Dec	cherry	<i>Prunus spp.</i>	16	16	F	Codominant leaders with included bark	Remove	Street
6220	On-Site	Dec	cherry	<i>Prunus spp.</i>	8,10	14	F	Codominant stems with included bark	Remove	Sidewalk
6272	On-Site	Dec	London plane	<i>Platanus × acerifolia</i>	18	20	G	One-sided crown, cable compartmentalized in trunk	Remove	Lot 16
6273	On-Site	Dec	bigleaf maple	<i>Acer macrophyllum</i>	33	25	G	Multiple stems	Remove	Lot 15



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
6274	On-Site	Dec	London plane	<i>Platanus × acerifolia</i>	15	20	G	Codominant leaders	Remove	Lot 15
6277	On-Site	Dec	cherry	<i>Prunus</i> spp.	13	16	F	Moderate structure	Remove	Lot 14
6278	On-Site	Dec	cherry	<i>Prunus</i> spp.	9	13	F	Moderate structure	Remove	Lot 14
6279	On-Site	Dec	cherry	<i>Prunus</i> spp.	14	16	F	Moderate structure	Remove	Lot 14
6280	On-Site	Dec	cherry	<i>Prunus</i> spp.	8	18	F	Moderate structure	Remove	Lot 14
6281	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	53	38	E	Rx aerial assessment if potential for retention	Remove	Wall
6282	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	46	28	G	Pistolbutt	Remove	Lot 8
6283	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	30	G	Dense group	Remove	Lot 9
6284	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	18	F	Dense group	Remove	Lot 9
6285	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	34	22	F	Codominant stems with included bark, old broken top, multiple leaders, pini conks	Remove	Lot 9
6291	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	43	32	E		Remove	Lot 13
6292	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	24	G		Remove	Lot 12
6293	On-Site	Dec	bigleaf maple	<i>Acer macrophyllum</i>	8	17	P	Poor structure, trunk decay	Remove	Lot 12
6294	On-Site	Dec	bigleaf maple	<i>Acer macrophyllum</i>	9	11	P	Poor structure, trunk decay	Remove	Lot 12
6296	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	27	27	G		Remove	Lot 12
6297	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	16	11	F	Codominant stems	Remove	Lot 12
6298	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	24	G	Small pini conks at old branch stubs	Remove	Lot 12
6299	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	34	28	G		Remove	Lot 12
6300	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	35	24	G		Remove	Sidewalk
6301	On-Site	Dec	Scouler's willow	<i>Salix scouleriana</i>	7,8,10	15	F	Multiple stems	Remove	Street
6302	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	13	G		Remove	Street
6303	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	24	G		Remove	Street
6304	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	41	24	G		Remove	Lot 25





No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
6305	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	7	16	F	Poor structure	Remove	Street
6306	On-Site	Dec	cherry	<i>Prunus</i> spp.	6	20	F	Poor structure, one-sided crown	Remove	Lot 13
6307	On-Site	Dec	cherry	<i>Prunus</i> spp.	7	20	F	Poor structure, one-sided crown	Remove	Lot 12
6308	On-Site	Dec	cherry	<i>Prunus</i> spp.	10	20	P	Poor structure, one-sided crown, codominant stems with seam, decay	Remove	Sidewalk
6309	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	13	F		Remove	Street
6310	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	8	F		Remove	Street
6311	On-Site	Dec	cherry	<i>Prunus</i> spp.	6	20	P	Very poor structure, one-sided crown	Remove	Street
6312	On-Site	Dec	cherry	<i>Prunus</i> spp.	7,9	12	F	Codominant stems	Remove	Street
6313	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	38	26	E		Remove	Street
6314	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	13	18	F		Remove	Lot 24
6315	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	20	E		Remove	Lot 23
6316	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	22	F	Codominant stems with tight V-shaped attachment and included bark, twig dieback	Remove	Lot 22
6317	On-Site	Dec	cherry	<i>Prunus</i> spp.	19	14	F	Poor structure	Remove	Lot 21
6320	On-Site	Dec	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	7	F	Blackberries in lower crown	Remove	Lot 23
6321	On-Site	Dec	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	8	F	Blackberries in lower crown	Remove	Lot 23
6322	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	5,2x6	9	F		Remove	Trail
6332	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	21	25	F		Unaffected	N/A
6337	ROW	Dec	English hawthorn	<i>Crataegus monogyna</i>	11	15	F	Nuisance species	Unaffected	N/A



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
6343	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	9	20	F	Very poor structure	Unaffected	N/A
6344	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	18,23,37	22	F	History of branch failure, trunk and crown decay	Unaffected	N/A
6348	ROW	Dec	Scouler's willow	<i>Salix scouleriana</i>	18	12	P	Poor structure, history of failure, trunk and crown decay	Unaffected	N/A
6350	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	16	14	F	Assessment limited by standing water	Unaffected	N/A
6355	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10	10	F	Assessment limited by standing water	Unaffected	N/A
6358	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	8	10	F	Assessment limited by standing water	Unaffected	N/A
6359	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	8	10	F	Assessment limited by standing water	Unaffected	N/A
6364	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	26	20	F		Unaffected	N/A
6368	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	51	22	E		Unaffected	N/A
6373	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	18	14	F	Dead and broken branches	Unaffected	N/A
6377	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	16	14	F	Assessment limited by standing water	Unaffected	N/A
6379	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	8	10	F	Assessment limited by standing water	Unaffected	N/A
6382	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10	10	F	Assessment limited by standing water	Unaffected	N/A
6384	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	22	12	F	Broken top, off-center leaders	Unaffected	N/A
6401	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	22	18	F		Unaffected	N/A



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
6402	ROW	Dec	sweet cherry	<i>Prunus avium</i>	12,16	14	F	Nuisance species, trunk decay	Unaffected	N/A
6403	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	6	6	F		Unaffected	N/A
6404	ROW	Dec	sweet cherry	<i>Prunus avium</i>	10	10	F	Nuisance species	Unaffected	N/A
6405	ROW	Dec	sweet cherry	<i>Prunus avium</i>	14	14	F	Nuisance species	Unaffected	N/A
6406	ROW	Dec	sweet cherry	<i>Prunus avium</i>	8	0	D	Snag	Unaffected	N/A
6407	ROW	Dec	sweet cherry	<i>Prunus avium</i>	12	10	F	Nuisance species, trunk decay	Unaffected	N/A
6408	ROW	Dec	black hawthorn	<i>Crataegus douglasii</i>	8	12	F	Assessment limited by standing water	Unaffected	N/A
6409	ROW	Dec	black hawthorn	<i>Crataegus douglasii</i>	10	12	F	Assessment limited by standing water	Unaffected	N/A
6410	ROW	Dec	black hawthorn	<i>Crataegus douglasii</i>	12	12	F	Assessment limited by standing water	Unaffected	N/A
6411	ROW	Dec	black hawthorn	<i>Crataegus douglasii</i>	10	12	F	Assessment limited by standing water	Unaffected	N/A
6412	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	12	12	F	Assessment limited by standing water	Unaffected	N/A
6419	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	14	16	F	Assessment limited by standing water	Unaffected	N/A
6420	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	18	22	F	Assessment limited by standing water	Unaffected	N/A
6421	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	14	16	F	Assessment limited by standing water	Unaffected	N/A
6422	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10	12	F	Assessment limited by standing water	Unaffected	N/A
6429	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10, 2x14	16	F	Assessment limited by standing water	Unaffected	N/A



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6437	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	12,18	22	F	Assessment limited by standing water	Unaffected	N/A
6472	100yr FP	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	34	E		Retain	N/A
6497	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	14,22	20	F	Poor structure, dead and broken branches, trunk decay	Unaffected	N/A
6500	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	8,12,24	20	F	8" snag, other codominant stems with poor structure, dead and broken branches	Unaffected	N/A
6502	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	25	22	F	Mostly one-sided to south	Unaffected	N/A
6504	ROW	Dec	English hawthorn	<i>Crataegus monogyna</i>	9	12	F	Nuisance species	Unaffected	N/A
6505	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	16	14	F	History of large branch failure	Unaffected	N/A
6510	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	14	14	F	Beaver damage	Unaffected	N/A
6514	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10	12	F	Trunk decay	Unaffected	N/A
6515	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	16	16	F	Trunk damage	Unaffected	N/A
6516	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	14	14	F	One-sided to south	Unaffected	N/A
6517	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	13	14	F	One-sided to south	Unaffected	N/A
6519	ROW	Dec	Oregon ash	<i>Fraxinus latifolia</i>	9	0	D	Decay	Unaffected	N/A
6525	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	27	18	F	Codominant crown class	Unaffected	N/A
6526	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	32	12	F	Codominant crown class, swollen lower trunk	Unaffected	N/A
6527	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	33	26	F	Codominant crown class, self-correcting lean	Unaffected	N/A
6529	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	18	G	Crown asymmetry	Unaffected	N/A
6531	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	16	F	Codominant crown class	Unaffected	N/A
6532	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	10	F	Suppressed	Unaffected	N/A
6533	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	14	F	Codominant crown class	Unaffected	N/A



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6534	On-Site	Con	western redcedar	<i>Thuja plicata</i>	17	13	G		Unaffected	N/A
6535	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	10	F	Codominant crown class	Unaffected	N/A
6536	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	9	F	Codominant crown class	Unaffected	N/A
6537	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	16	F	Codominant crown class	Unaffected	N/A
6538	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	18	F	Poor structure, one-sided to south with lean to road	Unaffected	N/A
6539	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	19	F	Codominant crown class, P. pini conks	Unaffected	N/A
6540	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	16	F	Codominant crown class, trunk sweep	Unaffected	N/A
6541	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	10	F	Suppressed	Unaffected	N/A
6542	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	23	18	F	Codominant crown class, broken top, off-center leader	Unaffected	N/A
6543	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	31	20	F	Codominant leaders	Unaffected	N/A
6573	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	18	F	Codominant crown class	Unaffected	N/A
6574	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	13	F	Intermediate crown class	Unaffected	N/A
6575	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	9	P	Suppressed	Unaffected	N/A
6576	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	10	P	Suppressed, P. pini conks	Unaffected	N/A
6577	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	31	20	F	Codominant crown class	Unaffected	N/A
6578	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	26	F	Codominant crown class, poor structure, codominant leaders with included bark and seam	Unaffected	N/A
6591	VC	Dec	sweet cherry	<i>Prunus avium</i>	13	20	F	Nuisance species	Unaffected	N/A
6593	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	39	22	G	Lower trunk sweep off steep bank	Retain	N/A
6601	VC	Con	western redcedar	<i>Thuja plicata</i>	43	18	G	Lower trunk wound	Unaffected	N/A



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6666	100yr FP	Con	western redcedar	<i>Thuja plicata</i>	12	13	G		Retain	N/A
6667	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	16	P	History of branch failure, broken to, small live crown	Remove	Lot 26
6668	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	15	G		Remove	Lot 26
6669	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	16	F		Remove	Lot 27
6670	On-Site	Dec	bigleaf maple	<i>Acer macrophyllum</i>	17	20	F	Codominant leaders	Remove	Lot 27
6671	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	18,19	18	F	Poor structure	Remove	Lot 27
6672	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	11	F	Intermediate crown class, pini conk	Remove	Lot 27
6673	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	18	F		Remove	Lot 27
6674	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	5,8	14	F		Remove	Sidewalk
6675	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	10	F	Trunk wound	Remove	Street
6676	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	6	F	Pistolbutt	Remove	Street
6677	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	8	F		Remove	Street
6678	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	12	10	P	Nuisance species, very poor structure	Remove	Street
6679	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	7	10	F	Nuisance species, poor structure	Remove	Lot 25
6680	On-Site	Dec	deciduous	unknown	7	16	P	Very poor structure	Remove	Wall
6681	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	22	E		Remove	Wall
6682	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	6	13	F	Poor structure	Remove	Trail
6683	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	26	21	G		Retain	N/A
6684	100yr FP	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	22	G		Retain	N/A
6685	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	16	P	Old broken top, very poor structure, suppressed beneath dominant canopy	Remove	Trail
6686	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	39	32	G		Remove	Trail



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6687	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	11	F	Poor structure, self-correcting lean, suppressed	Remove	Condition
6688	VC	Dec	Scouler's willow	<i>Salix scouleriana</i>	10	11	F		Retain	N/A
6689	VC	Dec	sweet cherry	<i>Prunus avium</i>	5,7	10	F	Nuisance species	Retain	N/A
6690	VC	Dec	English hawthorn	<i>Crataegus monogyna</i>	7	10	F	Poor structure, excessive lean south	Unaffected	N/A
6691	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	29	16	F	Reduced vigor, dead branches, dieback	Unaffected	N/A
6692	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	11	F	Intermediate crown class	Unaffected	N/A
6693	100yr FP	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	16	F		Unaffected	N/A
6694	100yr FP	Dec	English hawthorn	<i>Crataegus monogyna</i>	7	10	P	Nuisance species, very poor structure	Unaffected	N/A
6695	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	14	F		Unaffected	N/A
6696	100yr FP	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	11	F	Suppressed	Retain	N/A
6697	100yr FP	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	13	F	Suppressed	Retain	N/A
7172	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	18	7	P	Low vigor, dying	Remove	Lot 11
7173	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	8	9	F	Nuisance species	Remove	Lot 11
7174	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	34	20	F	History of branch failure, crown asymmetry, large pini conks	Remove	Lot 11
7175	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	26	12	F	History of branch failure, broken top, major asymmetry	Remove	Lot 10
7176	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	15	F	Codominant crown class with 7175	Remove	Lot 10
7177	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	22	16	F	Numerous pini conks	Remove	Lot 11
7178	On-Site	Dec	bigleaf maple	<i>Acer macrophyllum</i>	8	15	F	Moderate structure	Remove	Lot 11



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7179	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	20	G	Dead and broken branches, broken top, pitch seam on lower trunk	Remove	Lot 11
7180	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	7	10	F	Nuisance species	Remove	Lot 11
7181	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	7	10	F	Nuisance species	Remove	Lot 11
7182	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	0	D	Snag	Remove	Lot 11
7183	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	11	7	P	Broken top	Remove	Lot 11
7184	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	16	F		Remove	Sidewalk
7185	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	16	F		Remove	Sidewalk
7186	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	0	D	Mostly dead	Remove	Sidewalk
7187	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	28	20	F	Old broken top with new leaders	Remove	Sidewalk
7188	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	7	G	Young tree	Retain	N/A
7189	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	20	G	Some history of branch failure, epicormics	Retain	N/A
7190	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	7	F	Young tree, minor asymmetry, lower limbs poorly pruned, trunk damage	Retain	Sidewalk
7191	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	9	F	Young tree, minor asymmetry, lower limbs poorly pruned	Remove	Sidewalk
7192	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	10	P	High live crown, windthrow risk	Remove	Lot 28
7193	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	10	F	Blackberries in lower crown	Remove	Street
7194	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	8	F	Blackberries in lower crown	Remove	Street





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7195	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	10	F		Remove	Street
7196	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	10	F	Blackberries in lower crown, trunk damage	Remove	Sidewalk
7197	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	8	P	Broken top, small live crown, hollow with advanced trunk decay	Remove	Sidewalk
7198	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	7	F		Remove	Street
7199	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	7	F		Remove	Street
7200	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	9	F		Remove	Street
7201	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	6	F	Self-correcting but excessive lean	Remove	Street
7202	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	8	G		Remove	Street
7203	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	8	G		Remove	Street
7204	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	8	G		Remove	Lot 28
7205	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	8	F	Crooked leader	Remove	Lot 28
7206	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	10	F	Self-correcting lean	Remove	Lot 28
7207	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	8	G		Remove	Lot 28
7240	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	11	P	Small live crown, sunscald, low vigor, not viable	Remove	Condition
7241	VC	Dec	sweet cherry	<i>Prunus avium</i>	9	11	F	Nuisance species, codominant stems, some included bark, self-correcting lean	Retain	N/A
7242	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	19	16	G		Retain	N/A
7243	On-Site	Dec	dogwood	<i>Cornus spp.</i>	7	12	F	Poor structure	Remove	Trail
7244	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10,19	12	G	Codominant stems	Retain	N/A
9001	On-site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	11	G		Remove	Sidewalk



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9002	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	6	8	F	Nuisance species	Remove	Street
9003	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	6	0	D	Nuisance species	Remove	Street
9004	On-Site	BLE	English holly	<i>Ilex aquifolium</i>	8	12	F	Nuisance species	Remove	Street
9005	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	6	6	F		Remove	Street
10039	On-Site	Dec	plum	<i>Prunus</i> spp.	6,10, 20,24	18	P	Very poor structure, dead and broken branches, trunk and crown decay	Remove	Lot 20
10042	On-Site	Dec	plum	<i>Prunus</i> spp.	4x6,2x8, 2x10	17	F	Very poor structure, trunk decay	Remove	Lot 20
10054	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	42	22	G	Pini conks	Remove	Lot 20
10055	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	12	F	Intermediate crown class, numerous pini conks	Remove	Sidewalk
10059	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	24	F	Codominant stems, pini conks	Remove	Street
10061	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	22	F	Dead branches	Remove	Street
10063	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	33	24	G	Dense group	Remove	Street
10067	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	40	28	F	Dense group, codominant stems with included bark	Remove	Street
10068	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	43	32	E	Dense group	Remove	Street
10070	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	50	33	E	Dense group	Remove	Street
10086	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	20	20	G	Dense group	Remove	Sidewalk
10087	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	24	G	Dense group	Remove	Sidewalk
10088	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	22	G	Dense group	Remove	Sidewalk
10101	On-Site	Dec	apple	<i>Malus</i> spp.	10	13	F	Poor structure, decay	Remove	Street
10104	On-Site	Dec	apple	<i>Malus</i> spp.	10	13	F	Poor structure	Remove	Sidewalk
10108	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	25,26	30	G	Codominant stems, ivy infestation	Remove	WQ Facility
10116	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	12	P	Low vigor, trunk damage	Remove	WQ Facility



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10117	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	13	P	Low vigor	Remove	WQ Facility
10118	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	14	20	F	Nuisance species	Remove	WQ Facility
10122	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	15	22	G	Moderate structure	Remove	WQ Facility
10123	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	16	20	G	Moderate structure	Remove	WQ Facility
10126	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	41	34	G	Ivy infestation	Remove	Lot 21
10128	On-Site	Con	scots pine	<i>Pinus sylvestris</i>	13	16	P	Very poor structure, small one-sided live crown, broken top	Remove	WQ Facility
10134	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	53	40	E		Remove	WQ Facility
10148	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	30	G	Multiple leaders, aerial inspection and possible cable/brace if retained	Remove	Trail
10150	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	24	20	G		Remove	WQ Facility
10151	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	11	P	Suppressed	Remove	WQ Facility
10153	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	16	13	F	Reduced vigor	Remove	WQ Facility
10165	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	32	34	G	Dead and broken branches	Remove	Lot 21
10169	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	8	12	P	Nuisance species	Remove	Trail
10170	On-Site	Con	grand fir	<i>Abies grandis</i>	8	11	F		Remove	Trail
10178	VC	Dec	English hawthorn	<i>Crataegus monogyna</i>	3x8	12	P	Poor structure, decay	Retain	N/A
10180	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	27	G	Crown asymmetry	Retain	N/A
10182	On-Site	Dec	paper birch	<i>Betula papyrifera</i>	7,9	11	P	Poor structure, dead and broken branches, lower trunk damage	Remove	WQ Facility
14124	Off-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	30	25	F	Codominant crown class with 14125	Remove	Street
14125	Boundary	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	13,2x22	18	F	Fence in trunk	Remove	Sidewalk



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
30210	VC	Dec	Lombardy poplar	<i>Populus nigra</i>	32	8	P	Dead and broken branches, crown decay, inherent species limitations	Remove	Condition
30235	VC	Dec	English hawthorn	<i>Crataegus monogyna</i>	6	10	P	Extensive ivy	Retain	N/A
30241	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	24	28	G	Dead and broken branches, ivy	Retain	N/A
30252	VC	Dec	English hawthorn	<i>Crataegus monogyna</i>	12	15	P	Nuisance species, poor structure, ivy	Retain	N/A
30255	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	17	16	P	Extensive ivy	Retain	N/A
30257	VC	Dec	English hawthorn	<i>Crataegus monogyna</i>	11	14	P	Nuisance species, excessive lean	Retain	N/A
30273	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	14	F		Remove	Trail
30278	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	15	F	Forked leaders	Retain	N/A
30282	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	7	8	P	Nuisance species, poor structure, ivy	Retain	N/A
30283	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	4,6,8	8	P	Nuisance species, poor structure, ivy	Retain	N/A
30298	VC	BLE	English holly	<i>Ilex aquifolium</i>	2x6	6	F	Nuisance species	Retain	N/A
30299	VC	Dec	sweet cherry	<i>Prunus avium</i>	9	10	F	Nuisance species, broken top, poor structure	Retain	N/A
30309	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	19	23	F	Not suitable for retention with exposure from adjacent removals, poor crown structure, lower trunk wound	Remove	Trail
30312	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	17	24	F	High live crown	Remove	Lot 21
30314	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	6	14	P	Very poor structure, small live crown	Remove	WQ Facility



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
30315	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	11	13	F	High live crown	Remove	WQ Facility
30322	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	21	F	Poor structure	Remove	Lot 22
30328	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	33	20	F	Poor structure, dead and broken branches, lower trunk wound	Retain	N/A
30329	VC	Dec	English hawthorn	<i>Crataegus monogyna</i>	10	10	F	Poor structure	Retain	N/A
30341	VC	Dec	sweet cherry	<i>Prunus avium</i>	9	9	F	Nuisance species, crook in lower trunk	Unaffected	N/A
30346	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	14	0	D	Wind snapped	Unaffected	N/A
30354	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	26	E		Retain	N/A
30403	VC	Dec	red alder	<i>Alnus rubra</i>	17	20	F	Leans northwest	Retain	N/A
30409	VC	Dec	red alder	<i>Alnus rubra</i>	19	16	F	Leans west	Retain	N/A
30417	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	8	12	P	Column of advanced trunk decay	Retain	N/A
30420	VC	Dec	red alder	<i>Alnus rubra</i>	19	14	P	Broken top, trunk decay	Unaffected	N/A
30421	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	13	8	P	Snag	Retain	N/A
30422	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	18	10	P	Broken top	Retain	N/A
30431	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	28	20	F	Dead and broken branches	Unaffected	N/A
30459	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	12	12	P	Nuisance species, recently uprooted	Remove	Trail
30521	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	14	G		Remove	Trail
30594	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	30	E		Remove	Lot 22
30603	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	8	11	F	Nuisance species	Remove	Lot 24
30622	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	2x15	15	P	Nuisance species, decrepit, history of failure, advanced decay	Remove	Lot 25
30627	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	11	F	Self-correcting lean, crown asymmetry, pini conks	Remove	Condition/Wall



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
30636	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	33	20	G	One-sided crown	Retain	N/A
30638	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	10	12	P	Sunscald	Retain	N/A
30639	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	6	10	F	Nuisance species; not suitable for retention with removal of #30627	Remove	Wall
30640	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	22	12	F		Retain	N/A
30641	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	13	14	F		Retain	N/A
30646	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	27	25	F		Remove	Wall
30647	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	12	F	Non-self correcting lean	Remove	Condition/ Wall
30653	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	17	F		Retain	N/A
30659	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	13	16	F	Poor structure, multiple leaders, trunk decay	Unaffected	N/A
30683	VC	Dec	sweet cherry	<i>Prunus avium</i>	17	25	F	Nuisance species	Retain	N/A
31250	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	49	32	G	Codominant leaders with included bark	Remove	Trail
31257	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	21	16	G	Codominant crown class	Remove	Trail
31263	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	29	24	F	History of branch failure	Retain	N/A
31283	VC	Con	Oregon ash	<i>Fraxinus latifolia</i>	30	20	F	Dead and broken branches	unaffected	N/A
31289	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	9	G		Remove	Trail
31293	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	33	26	G	Basal hollow, may just be rooting and not decay	Remove	Trail
31295	VC	Con	western redcedar	<i>Thuja plicata</i>	9	12	G		Likely to Retain	Assess wall impacts
31296	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	12	11	F		Remove	Trail
31300	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	38	24	G		Unaffected	N/A
31313	100yr FP	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	31	20	G		Retain	N/A
31319	On-Site	Dec	sweet cherry	<i>Prunus avium</i>	10	17	F	Nuisance species	Remove	Lot 26



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
31320	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	48	28	G	Few dead and broken branches	Remove	Lot 26
31323	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	38	28	F	Reduced vigor	Retain	N/A
31333	100yr FP	Dec	sweet cherry	<i>Prunus avium</i>	21	20	F	Nuisance species, previous codominant stem failure, open wound with some decay	Retain	N/A
31337	VC	Dec	Douglas-fir	<i>Pseudotsuga menziesii</i>	14	10	F	Heavy sweep leaning uphill, self-correcting	Unaffected	N/A
31340	On-Site	Con	western redcedar	<i>Thuja plicata</i>	22	18	G		Remove	Lot 27
31342	100yr FP	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	9	9	F		Retain	N/A
31347	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10	10	P	Broken top, very poor structure	Unaffected	N/A
31349	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	28,29	20	F	Codominant stems, advanced trunk decay	Unaffected	N/A
31350	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	12	14	F	Dead and broken branches	Unaffected	N/A
31353	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10,21	14	F	10" stem is dead, 21" stem with high live crown	Unaffected	N/A
31355	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	7	10	P	Leans west	Unaffected	N/A
31360	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	18	10	F	Small high live crown, codominant	Unaffected	N/A
31361	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	19	16	F	Dead and broken branches, trunk decay with hollow	Unaffected	N/A
31362	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	18	15	F	Small high live crown	Unaffected	N/A
31365	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	10	10	F	Major lower trunk sweep	Unaffected	N/A
31373	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	29	20	F	Poor structure, dead and broken branches	Unaffected	N/A
31386	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	17	14	F		Remove	Wall



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
31393	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	32	15	F	Codominant stems	Remove	Lot 27
31421	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	8	G		Retain	N/A
31574	On-Site	Dec	English hawthorn	<i>Crataegus monogyna</i>	9	9	P	Nuisance species, very poor structure	Remove	Lot 23
31575	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	44	26	G	Codominant stems with tight V-shaped attachment, active pitch flow lower trunk, some pini conks, unidentified mushrooms in root zone	Remove	Lot 23
31577	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	22	G		Remove	Lot 23
31583	On-Site	Dec	Douglas-fir	<i>Pseudotsuga menziesii</i>	8	7	P	Poor structure	Remove	Lot 23
31584	On-Site	Dec	Oregon ash	<i>Fraxinus latifolia</i>	8	16	F	Poor structure, trunk wound	Remove	Lot 23
31585	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	46	26	G	History of branch failure, lower trunk damage	Remove	Lot 23
31605	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	36	24	G		Likely to Retain	Assess wall impacts
31606	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	25	21	F	Old broken top, multiple leaders	Create Snag	Condition
31610	On-Site	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	45	28	E		Remove	Trail
31614	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	12	16	F	Codominant leaders	Retain	N/A
71092	VC	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	37	32	G		Unaffected	N/A
71095	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	17	20	F	Poor crown structure, dead and broken branches	Unaffected	N/A
71097	VC	Dec	Oregon ash	<i>Fraxinus latifolia</i>	9,11,31	26	P	Very poor structure, advanced trunk decay, good habitat, low target potential	Unaffected	N/A



No.	Location <sup>1</sup>	Type	Common Name	Species Name	DBH <sup>2</sup>	C-Rad <sup>3</sup>	Cond <sup>4</sup>	Comments	Treatment <sup>5</sup>	Reason <sup>6</sup>
80001	VC	Con	pacific yew	<i>Taxus brevifolia</i>	8	3	P	Mostly dead, but sprouting and unique native species	Retain	N/A
80002	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	7	6	F	Suppressed	Unaffected	N/A
80003	ROW	Con	Douglas-fir	<i>Pseudotsuga menziesii</i>	15	15	F	Poor structure, trunk sweep, off-center leader, one-sided crown to south	Unaffected	N/A

<sup>1</sup>**Location** identifies where trees are located, either: On-site (not within environmentally constrained areas or rights-of-way); Off-Site (limited to tree #14124 near the northern boundary); Boundary (limited to tree #14125 on the northern boundary); ROW (for trees located in the SW Brookman Road right-of-way); VC (for trees located within or on the Vegetated Corridor boundary); or, 100yr FP (for trees located outside of the VC but within the 100 year flood plain).

<sup>2</sup>**DBH** is tree diameter measured at 4.5-feet above ground level in inches, except off-site tree diameter was visually estimated; trees with multiple trunks splitting below DBH were measured at the narrowest point beneath the split or are indicated as quantity x size.

<sup>3</sup>**C-Rad** is the average crown radius measured in feet.

<sup>4</sup>**Cond** is an arborist assigned rating to generally describe the condition of individual trees as follows- Dead; Poor; Fair; Good; or, Excellent Condition.

<sup>5</sup>**Treatment** corresponds with the Tree Preservation and Removal Plan.

<sup>6</sup>**Reason** lists the general reason for removal for the purposes of site development typically associated with grading that is required for building lots, sidewalks and streets, retaining walls and trails, or because a tree's condition is not suitable for retention with the proposed development; N/A is indicated for trees classified as Retain or Unaffected in the Treatment column.



Stand No.	Tree Species	Count	Average DBH <sup>1</sup>	Average Condition	Total Canopy Preserved	Comments
1	Oregon ash ( <i>Fraxinus latifolia</i> )	103	20	Fair-Poor	~4-acres	Non-surveyed stand grown trees within the unaffected Vegetated Corridor were generally assessed in terms of species, diameter, and general condition. These trees are unaffected by the proposed development. No canopy credit is accounted for since they are located beyond the Net Development Site.
	hawthorn ( <i>Crataegus</i> spp.)	17	9	Fair		
	Douglas-fir ( <i>Pseudotsuga menziesii</i> )	3	30	Good		
	red alder ( <i>Alnus rubra</i> )	3	12	Fair		
	sweet cherry ( <i>Prunus avium</i> )	1	8	Fair		
<b>Total Stand</b>		<b>127</b>	<b>16</b>	<b>Fair</b>		

<sup>1</sup>DBH is tree diameter measured at 4.5-feet above the ground level, in inches.