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Mark Kormondy, Grounds Supervisor
The Evergreen State College
2700 Evergreen Parkway NW
Olympia, WA 98505

RE: Tree Evaluation – 3 Trees

Dear Mr. Kormondy:

I have examined three trees on The Evergreen State College Campus. The purpose of the evaluation was to determine the condition of the trees and to make recommendations for cultural care or removal.

The discussion and recommendations will be provided on a tree by tree basis. Tree locations are shown on the attached Figure 1.

Tree #1 – 218 Building – Lecture Halls

This tree is a 17.2 inch DBH (diameter measured at 4.5 ft. above the groundline) western hemlock (*Tsuga heterophylla*) that is located in a landscape setting among the buildings and sidewalks. The overall appearance of the tree is that it is somewhat desiccated, however new growth is normal, with almost 3 inches of lateral branch growth this year. There is no branch dieback and no significant insect problems above ground.

Examination of the root collar found pitch saturation (see Photo A below) on the lower 24 inches of the stem and exposed roots. Tissue samples in the northerly quadrant of the tree found mycelium of Armillaria root disease just under the bark. This white latex like mycelial mat was well developed. I did not excise enough bark to locate the rhizomorph, which would provide a positive identification.

In summary, it is my opinion that this tree is infected with a strain of Armillaria root disease. The tree will continue to show signs of stress and decline over time. This will appear as yellowing and thinning of foliage with minor, followed by major twig dieback. Eventually, the tree will die. This is a short-term tree, meaning I do not expect the tree to survive more than 15 more years. A tree killed by Armillaria root disease normally dies standing. Therefore, there is no cultural care prescribed beyond protection during the interim. There is no treatment for this disease. When the tree shows stress and decline to a point where it

becomes unsightly, then remove the tree. New trees planted in this area will tolerate the disease as long as they are maintained in a healthy condition.

Photo A. View of pitch saturation of the lower stem, a characteristic of Armillaria root disease (WFCI 7/31/08).

Tree #2 – 260 Building – Modular Housing

This 49 inch DBH western red cedar (*Thuja plicata*) is located along Wild Currant Street (just behind the curb). There is a modular structure 24 ft. south of the tree and another structure 35 ft. northeast of the tree. In short, the tree is surrounded by fixed, high value and high frequency targets in the form of structures, people, and the street.

The tree has a long, full live crown with normal foliage color, density and growth. From a tree health perspective, the tree appears very healthy. However, structurally the tree is in very poor condition.

Photo B. View of cracked stem below split at 24 feet. The stem is hollow inside of the crack which extends to the ground line (WFCI 7/31/08).

The stem of this tree splits into two stems at approximately 24 ft. above the groundline (see above Photo B), and one of the stems splits again higher up, wrapping around the main stem. The north stem splits again at a height of approximately 55 feet. There is a crack in the stem starting at the first split. The crack extends from the split at 24 ft., down the stem to the ground. The opposite side of the tree also is cracked to a height of 8 ft. above the ground. The stems have visibly separated and the hollow is easily viewed inside of the stems.

Examination of the lower stem found the tree to be severely hollow. I did not core the tree; however sounding indicated the sound shell thickness is approaching the minimum (7 inches) necessary to support the tree, and is below the minimum for a portion of the stem[1].

The roots show evidence of decay, likely caused by damage during construction of the adjacent street.

In summary, this tree is in extremely poor condition with multiple structural defects, any one of which could fail. They include 1) root damage and root decay, 2) hollow lower stem that is cracked on two sides, to the ground on one side and to a height of 8 ft. on the other, 3) 3 splits in the stems all forming tight-V crotches which are highly susceptible to failure in western red cedar, and 4) a long, full crown that maximizes the weight and wind pressure on these structural defects.

The tree cannot be cabled and braced. There is not adequate sound wood to anchor a tree support system. Crown thinning would lighten and reduce wind pressure on the weak stem structure; however I do not believe this will reduce the tree risk significantly. We cannot move the targets; they are all fixed and high value. The parts of the tree that we expect to fail are all large.

Therefore, it is my professional opinion that this tree should 1) be removed and replaced with a new tree, or 2) reduced in size to create a wildlife snag by removal of the stem above 24 ft. and all foliage. This work should be done immediately to mitigate the high risk that this tree presents to surrounding targets.

[1] Robert D. Harvey, Jr. and Paul F. Hessburg, Sr. 1992. Long-Range Planning for Developed Sites in the Pacific Northwest: The Context of Hazard Tree Management. USDA Forest Service FPM-TP039-92. Portland, OR. Page 24.

Tree #3 – 331 Common Area – Student Housing

This is a 30.9 inch DBH western red cedar. It is located between buildings, a playground, and a parking lot. The area under the tree appears to be used heavily by the resident children.

The tree recently has lost its top and has a heavy lean to the south, into the prevailing winds and winter storms.

Photo C. View of subject tree.

There is significant internal decay in this tree with severe decay at the groundline, indicating that some roots are decayed. This is likely the cause of the heavy lean, which is not natural for red cedar. Forty-nine percent of the stem circumference is rotted (see Photo D) at the ground line (root collar). The foliage of the tree indicates severe stress. It is slightly off-color and the foliage is thinning.

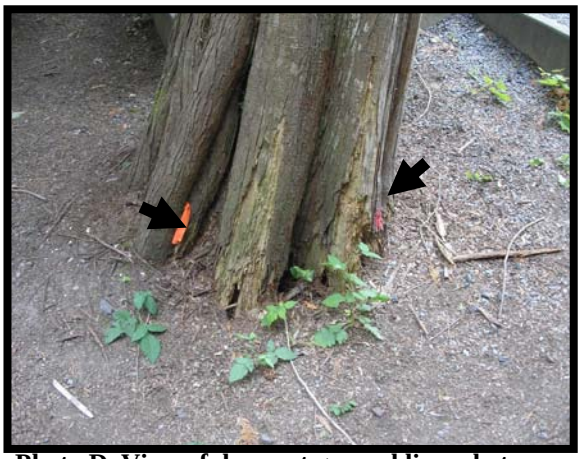

Photo D. View of decay at ground line – between arrows. Nearly 50% of root collar is decayed (WFCI 7/31/08).

In summary, it is my opinion that this tree is in decline, has severe internal decay in the stem and at the groundline, a heavy lean and is a high risk to fail. There are permanent, high frequency and high value targets surrounding this tree. There are no cultural treatments that will improve the safety of this tree. This tree is a very high risk tree and should be removed immediately.

Conclusions

The following is a summary of my recommendations for these three trees:

1) Monitor tree #1, the western hemlock. It will continue to decline overtime due to the infection with Armillaria root disease. Remove the tree when it become unsightly due to yellowing and needle loss.
2) This large western red cedar (tree #2) has multiple, severe structural defects in the form of a hollow stem, cracked stems, and tight-V crotches. The heavy, full crown is placing severe stress on these unstable stems. This tree is a very high risk to fail, is hazardous and should be removed immediately, or the risk should be mitigated by creation of a wildlife snag as recommended.
3) This western red cedar tree (#3) has lost its top and is in decline. It leans heavily and has severe decay in nearly 50% of the root collar. This tree is a very high risk to fail, has targets all around it, and hazardous. It should be removed immediately. It cannot be made into a wildlife snag due to the lean and decay at the root collar, and surrounding targets.

Please give me a call if you have further questions.

Respectfully submitted,

Washington Forestry Consultants, Inc.

Galen M. Wright

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Note: Even healthy trees can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. Annual monitoring by an ISA Certified Arborist or Certified Forester will reduce the potential of tree failures. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. It is considered an 'Act of God' when a tree fails, unless it is directly felled or pushed over by man's actions.

Figure 1. Map of subject tree locations (provided by TESC). Subject trees at arrows.