Arborist Report
July 21st, 2021

Prepared for:
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Discussion

Thank you for having us out to assess the condition of the trees on the site.

The client has informed me that there is an intention to build and accessory dwelling unit in the backyard, south of the existing structure. There are six significant woody plant systems that are adjacent to the proposed building's footprint.

Several of the systems are Portuguese Laurel (*Prunus lusitanica*). This species of plant is commonly used as a privacy hedge in the Pacific Northwest. The two plants that are on the western side of the project will not be adversely affected. There are more stems of this Portuguese Laurel system to the east and the plant will continue to thrive.

In the south neighbor's lot there is a small Cypress system that will not be affected by the proposed improvements to the lot.

Tree #1 is southeast of the proposed new building's footprint and its root zone will not be affected by the project.

Tree #2 is a Douglas Fir system that is just off of the southeast corner of the proposed new buildings footprint. As it is laid out right now, the new footprint will encroach upon 17% of the outer critical root zone of this specimen as well as a small portion of the inner critical root zone of the tree. Because of the young age of this particular specimen and because it is a native tree that is growing on a healthy site, I do expect this tree to endure the proposed construction without adverse edge effects to its health so long as proper tree protection protocols are followed.

Tree #6 is a Mount Fuji Flowering Cherry with a diameter at standard height of 12 inches. This tree has a generally wide and horizontal nature and because it is in a healthy root zone, I am assigning a critical root zone radius of 12 foot for this specimen. The proposed new building's footprint will require an encroachment of approximately 17% of the outer critical root zone of this specimen as well as a minor disturbance to the inner critical root zone/2.7 $ft.^2$ in total. Because this is a relatively young tree in a healthy soil environment, and because so much of the critical root zone will be preserved, I do expect this tree to endure the proposed improvements to the lot without adverse effects to its health.

During the site visit, the architect informed me that their excavation will go just 6" beyond the building's footprint, as indicated on their drawing. That will be necessary in this case to minimize disturbances to the critical root zone beyond what has already been described. All portions of the critical root zone that are not part of the excavation should be fenced off with tree protection fencing prior to construction activities commencing. Tree protection fencing can be 3 foot tall and flexible. Location of the tree protection fencing needs to be indicated on the site plan. Signage should be posted on the tree protection fencing indicating that it is a tree protection

area. Stacking of construction materials or debris inside of the tree protection zones must be avoided as it can lead to compaction or cause mechanical damage against the trunk of the tree. When digging in the critical root zones of these trees I recommend using hand tools and working toward the systems as if combing hair. If large roots are encountered they can be carefully excavated around and clean cut with a sharp saw. Clean-cut roots tend to bifurcate and continue to grow while pierced or torn roots have a tendency to decay.

Because there are some inevitable disturbances to the critical root zones of the systems, I do recommend adding a layer of arborist chips prior to construction activities commencing. The arborist chips will assist the trees in the development of new feeder roots, as well as boost carbon content in the soil, and help with water retention.

Tree Inventory

DSH-Diameter at Standard Height (DSH's of multi-stemmed trees obtained by taking the square root of the sum of the squares of the individual stems), DLR-Drip Line Radius or Limit of Disturbance, CRZ-Critical Root Zone

Condition Ratings
1-Natural structure with good proportions, expected amounts of vigor and deadwood, sound attachments, pedestal in good condition, and adequate root zone
2-Acceptable overall structure but in need of minor pruning or cabling to enhance health and safety threshold
3-Declining specimen in need of serious corrective work and support or a potential candidate for removal
4-Tree is at a critical point and must be reduced to a safe habitat snag or removed

1. Douglas Fir. *Pseudotsuga mensiezii*. 17" DSH. 17' CRZ radius. Excurrent structure, meaning that it has a single leader from the root flare all the way to the top of the tree. This tree has ideal proportions and is condition 1. Because it is a juvenile system it will likely tolerate some disturbances to the root zone.
2. Douglas Fir. *Pseudotsuga mensiezii*. 15" DSH. 13' CRZ radius. Excurrent structure, meaning that it has a single leader from the root flare all the way to the top of the tree. This tree has ideal proportions and is condition 1. Because it is a juvenile system it will likely tolerate some disturbances to the root zone. This is one of the trees that is located fairly close to the project. The critical root zone of this particular tree will be based on the drip line measurements. During the site visit I got a drip line measurement of 13 foot for this system. Douglas firs do endure a reasonable amount of disturbances to their root zones and because of the young nature of this tree I do expect it to continue to thrive without adverse effects to its health so long as the thresholds that I described above are adhered to.
3. Castlewellan Cypress. *Cupressus x Leylandii* 'Castlewellan'. 6" DSH. 6' CRZ. Condition 1. No disturbance.

4. Portuguese Laurel. *Prunus lusitanica*. Mulit-stemmed. Condition 1. Can tolerate hard pruning and root loss.
5. Portuguese Laurel. *Prunus lusitanica*. Mulit-stemmed. Condition 1. Can tolerate hard pruning and root loss.
6. Mt. Fuji Flowering Cherry. *Prunus serrulata* 'Mt Fuji'. 12" DSH. 12' CRZ. Condition 1.

Tree Protection

-For the trees being retained, tree protection fencing should be installed at the outer edge of the drip line or as close to it as is practically possible.
-Fencing should be installed prior to construction activities and remain in place for the duration of the project. Fencing should only be moved temporarily if minor disturbances must occur within the drip line and the fencing should be replaced immediately once that portion of the work is completed.
-The tree protection area is designated to be an area of no impact, no storing of materials, no encroachment and no staging of debris.
-The tree protection fencing should have signs every 8' facing access that indicate the area is a tree protection zone.
-Trenching through the CRZ for utilities is not permitted (tunneling is the preferred method).
-Grade changes in the CRZ are not permitted.
-Vehicle maintenance and washing of equipment (especially concrete), is not permitted.
-No attaching anything to the tree with cinching knots or hardware.
-Root flare should be protected with chips so that lawn maintenance equipment does not have to work close to the system.
-Proper clearances should be monitored.
-The Drip Line Radius is equal to the CRZ or critical root zone that needs to be protected. The Inner CRZ is 50% of the radius of the DLR and there should be zero disturbance in this zone. A disturbance of up to 33% of the Outer CRZ is permissible provided that any heavy digging equipment works toward the tree, and that any roots encountered that are over 1" in diameter are excavated around with hand tools and cut clean with a sharp saw behind the excavation zone so that the root can bifurcate and continue to grow. In some cases, if excessive pruning has been done, the CRZ can be larger than the Drip Line Radius, as much as 1'/1" DSH.

Assumptions and Limiting Conditions

Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters of legal character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other government regulations.

Care has been taken to obtain all information from reliable sources. All data has been verified so far as possible, however, the consultant/appraiser can neither guarantee nor be responsible for accuracy of information provided by others.

The consultant/appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payments of additional fees for such services as described in the fee schedule and contract engagement.

Loss or alteration of any of this report invalidates the entire report.

Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any person other than to whom it is addressed, without prior written consent of the consultant/appraiser.

Neither all nor any part of the content in this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written consent of the consultant/appraiser--particularly as to value conclusions, identity of the consultant/appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant/appraiser as stated in his qualification.