Arborist Report

Tree Inventory and Assessment

Puyallup School District South Hill Transportation Expansion Project

3607 17th St. SW Puyallup, WA 98371

Prepared for:

Lester Gerstmann, Asst. Director of Construction Management.

Prepared by:

Alan Haywood

Certified Arborist, PN-0330AM

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Alan Haywood – Arborist & Horticulturist, LLC
PO Box 1086
Enumclaw, WA 98022
253-259-4474
alan@haywoodarborist.com

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Summary

There are 17 trees over 6” DBH on the east border of the subject property. 16 trees are viable for retention. Three trees are large enough to be considered significant.

Introduction

Background and History

I was contacted by Mr. Lester Gerstmann to provide a tree inventory and assessment for the Puyallup School District Support Campus Expansion project. The property was located at 3607 17th St SW in Puyallup, WA 9898371. He explained to me that the school district was proposing to expand its support campus facility to the adjoining property and that some trees and landscape would need to be removed to create a vehicle connection through the existing parking lot. The project was being permitted through the City of Puyallup and they were requiring an arborist report as part of the permit application. Some landscaping and trees would have to be removed to connect the two properties.

I was provided with a boundary and topographic survey, other topographic surveys, a landscape site plan for the new parking area and two photographs of the trees to be assessed. One of the photos was from ground level and the other was an aerial photo. The photos showed five trees to be inventoried and assessed.

Assignment

My assignment was to

- Complete the tree inventory that would include counting, measuring, tagging, identifying and assessing the trees on the east side of the site.
- Provide an arborist report that notes the condition and viability of the trees. Note any trees that are in poor condition now that would be a hazard (high risk) to the proposed development.

Limits of the Assignment

Although there was a written contract for this project, there was no actual description of the work or scope of the work included in the contract. There were no project plans included or written direction from the City of Puyallup regarding their expectations for this report. None of the plans or surveys that were provided showed the locations of the existing trees.

Methodology

I examined the trees using the standard visual tree assessment method, as outlined in the *Tree Risk Assessment Manual* published by the International Society of Arboriculture. This is considered a Level 2 Basic Tree Risk Assessment. All of my observations were made from ground level. I did not climb the trees, drill into the trees or excavate any soil from around them.

The tree risk assessment methodology is based on three factors:

- How likely is the tree (or a tree part) to fail?
- How likely is the tree (or tree part) to hit a target of value when it fails?
- How likely is the tree (or tree part) to damage or injure the target if it hits it?

Tree structure, as well as health, plays a role in the risk determination. The proximity of a target of value is also considered. The presence of people and the duration of that presence (occupancy) is also factored it to the risk level determination.

Tree risk is categorized as Low, Moderate, High or Extreme. A normal healthy tree is generally considered low risk, because it is not likely to fail. It is the presence of defects in the tree that increases the likelihood of failure. If no one would be harmed or nothing of value would be damaged by the tree failure, it is also considered low risk. A tree that is likely to fail, but is unlikely to strike a target, is not a high risk tree.

Most trees are either Low Risk or Moderate Risk and are not considered Hazard Trees. However, a property owner's tolerance for risk may be low and a tree of Moderate Risk may be out of their comfort zone. In such cases, removal of the tree should be sought through other permitted means, not hazard tree removal. The definition of a Hazard Tree varies by jurisdiction.

Tree diameter measurements are taken at 4.5' above ground. This is known as Diameter at Breast Height – DBH. I used a diameter tape for this measurement. I used metal tags for tagging and numbering the trees. I used a clinometer to measure their height and a rubber mallet to sound their trunks

Purpose and Use of this Report

The purpose of this report is to provide the tree information I gathered from my site visit and inspection for the purposes of generating a report to meet the permit requirements of the City of Puyallup. This report is for the sole use of my client and may not be reproduced, used in any way, or disseminated in any form without prior consent of the client and Alan Haywood – Arborist & Horticulturist, LLC.

Observations

I visited the site on July 19, 2022 and met with Mr. Gerstmann. As he showed me the site, I realized that there were more trees that would need to be counted than I originally thought. I noted at least a dozen trees that were large enough to be counted. I also noted that the access to the trees would be more difficulty than I originally thought. The trees had never been pruned. They had branches reaching down to the ground. They were planted in a row with Portugal laurel (*Prunus laurocerasus*), which had also never been pruned. There were Himalayan blackberries growing under the trees, which added to the obstacles of getting to the tree trunk to measure and assess it.

The site was relatively flat and the trees were mainly western redcedars (*Thuja plicata*). There were some other conifers mixed in with the cedars as well and they are noted on the tree chart.

Discussion and Recommendations

The City of Puyallup does regulate trees that are 6" DBH or greater in some circumstances. The City defines a significant tree as any living tree with a DBH of at least 15". All trees 6" DBH and greater on the area of my assignment were included in this report. There were also smaller trees in the area, but they were not included.

The tree inventory is included in the Tree Chart in Appendix A. The total count of 17trees broke down as follows:

- Western redcedar – 11 Significant – 0
- Western hemlock – 2 Significant - 0
- Austrian Black Pine - 1 Significant - 0
- Norway Spruce – 1 Significant –1
- Colorado Blue Spruce – 1 Significant - 1
- Scotch Pine– 1 Significant - 1

Of the 17 trees in this report, three were significant. One of the trees was in poor condition and not considered viable for retention. Poor condition trees are ones that are either in declining health and are expected to die soon or they have structural defects that will cause them to break or fall in the near future. Poor condition trees are not considered viable for retention for these reasons. 16 of the trees onsite are viable for retention. The landscape and surveys that I was given did not show the locations of the existing trees, so I did not speculate as to which ones would be retained and which would be removed.

The western redcedars and western hemlocks appeared to be of similar age. The three significant trees (spruce and pine) appeared to be older. My supposition is that the three significant trees might predate the current site development done be the school district and be remnants of a previous landscape – possible that of a residential site use.

To successfully preserve trees, the majority of their root zones of the tree must be left undisturbed. The removal of soil by cuts, the compaction of soil by fills, the compaction of soil by heavy equipment or supplies and the contamination of soil by toxic chemicals must all be avoided. To do this, a tree protection zone (TPZ) should be developed and delineated.

The current industry methodology for tree root protection is the Critical Root Zone (CRZ) formula. A CRZ is developed for an individual tree by measuring its DBH and measuring one foot out from the trunk in all directions for every one inch of trunk diameter. Using this formula, a 10" diameter tree would have a CRZ of 10' extending out from the trunk in all directions.

In some circumstances, it isn't possible to develop the property as proposed and protect this much of the root zone. What has been found successful is to allow encroachment into the CRZ on one side of the tree by up to 50%. This will still preserve over three quarters of the CRZ and most healthy trees can withstand this. This is particularly true when the other side of the tree is not disturbed at all. The same 10" DBH tree could have soil disturbance up to 5' away from its trunk on one side and be expected to survive, if the rest of its CRZ is left undisturbed. Some jurisdictions refer to this 50% measurement of the CRZ as the "Interior Critical Root Zone."

To prevent unintended disturbances in the CRZ, a Tree Protection Zone (TPZ) should be established where no significant disturbance will take place. Ideally, this is at or beyond the CRZ. If the TPZ is reduced by up to 50% on one side, that would be the border of the TPZ. If the TPZ can't be set up to preserve at least three quarters of the CRZ, the tree is probably not a good candidate for retention.

Best management practices to reduce impacts to CRZs can include:
- Fencing of the TPZ - which is often required by the permitting jurisdiction.
- Cantilevering over root zones rather than installing a solid foundation wall.
- Use of pier piling construction methods instead of solid foundation walls.
- Cutting of large roots (over 2" diameter) that need to be removed, not tearing them out with excavation equipment.
- Keeping cut roots moist to prevent dehydration and further dieback. Covering them with moist organic mulch, wood chips or moist fabric (burlap, cloth tarp, etc.) until they are covered with soil.
- Tunneling under roots when possible.
- Using pneumatic or hydraulic excavation methods to preserve roots, rather than open trenching with excavation equipment.
- Prohibiting the storage of materials and the use of heavy equipment within the TPZ.

All of the above practices should be considered and implemented as is deemed appropriate by the City of Puyallup. Agencies sometimes require an arborist to be onsite to monitor work done within the protected CRZs of trees. If any of the trees can't be saved due to unforeseen circumstances during construction, then the arborist can help make that determination. Tree replacement or other mitigation measures can be required by the permitting agency. Again, the arborist can help advise on what would be appropriate under the existing circumstances.

Conclusion

Of the 17 trees onsite, 16 of them are in good enough condition to be considered viable candidates for retention.

The information in this report is based on my site visit and inspection completed on July 19, 2022 and the plans for the project that I have reviewed. This report can be updated when final building locations, utility plans and limits of clearing and grading have been established.

I attest that all of the information within this report is accurate, to the best of my knowledge. It does not provide any guarantees or implications that conditions of the trees on the site won't change over time. All trees eventually fail and even sound, healthy trees fail during severe weather events.

Thank you for the opportunity to be of service to you with this project. Please feel free to contact me if you have any questions about this report or if you have any further need for my services.

Sincerely,

Alan Haywood – Arborist & Horticulturist, LLC.

ISA Certified Arborist/Municipal Specialist – PN 0330-AM
ISA Qualified Tree Risk Assessor
ASCA Qualified Tree and Plant Appraiser
WSNLA Certified Professional Horticulturist - 2332
ecoPRO Certified Sustainable Landscape Professional – 6017
WSDA Licensed Pest Control Consultant - 7627

Appendix A: Tree Chart

Tree #	Species	DBH in	Height ft	LCR %	Crown Spread	Health	Structure	Significant	Comments
1	WRC	6, 9	20	90	15’	Poor	Fair	No	Foliage sparse, vigor low, in decline. Trunk forks at 1’.
2	WRC	6,6, 5	25	90	20’	Good	Fair	No	Trunk forks at base.
3	WRC	7	25	90	20’	Good	Good	No	
4	WRC	8	30	90	20’	Good	Good	No	
5	WRC	7,6, 6,6, 5,2	30	90	22’	Good	Fair	No	Trunk forks at the base.
6	WRC	8	35	90	20’	Good	Good	No	
7	WRC	7	35	90	24’	Good	Good	No	
8	WRC	8,7, 7,6, 5	35	90	24’	Good	Fair	No	Trunk forks at the base with a bark inclusion.
9	WRC	6,5, 3,3, 3, 2	30	90	20’	Good	Fair	No	Trunk forks at base.
10	SP	17, 16	50	75	45’	Good	Fair	Yes	Some pitching on the trunk - possible sequoia pitch moth infestation.
11	WRC	6,5, 4, 4	30	90	20’	Good	Fair	No	Trunk has basal fork with bark inclusion.
12	WH	6	30	75	16’	Good	Good	No	
13	WH	10	40	90	22’	Good	Good	No	
14	ABP	26	50	85	40’	Good	Good	Yes	Trunk has wound at 5’ with carpenter ants.
15	NS	18	50	85	26’	Good	Fair	Yes	Sapsucker damage on trunk with pitch on lower trunk
16	CBS	13	40	80	22’	Fair	Fair	No	Multiple tops high in crown – probable pine weevil damage.
17	WRC	7,5, 5, 4	35	90	18’	Good	Fair	No	

Abbreviations

ABP = Austrian Black Pine (*Pinus nigra*)

CBS= Colorado Blue Spruce (*Picea pungens*)

NS = Norway Spruce (*Picea abies)*

SP = Scotch Pine (*Pinus sylvestris*)

WH = Western Hemlock (*Tsuga heterophylla*)

WRC = Western Redcedar (*Thuja plicata*)