United General District 304 Facility
Tree Risk Assessment

ISA Level 2 Basic Tree Risk Assessment and Risk Mitigation Plan

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Urban Forestry Services
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Tree Risk Assessment

United General District 304 Facility
Sedro-Woolley, Washington

September 16, 2024

Table of Contents

Attachments:

Tree Assessment Site Plan - sheets TA-01 – TA-02

Tree Assessment Matrix

Wildlife Snag Detail

Terms and Conditions

Executive Summary

This ISA Level 2 Basic Risk Assessment includes 91 trees – 83 individually assessed trees and three tree groups containing eight trees – which I assessed throughout the United General 304 Facility property on August 13, 2024. Each of these trees resides within the ISA Level 2 Assessment Area as defined by United General District 304 (UGD 304) management before the assessment.

Risk Assessment Summary

The timeframe for this assessment is three (3) years.

All assessed trees were assessed using ISA Level 2 Basic Risk Assessment methods. The distribution of risk ratings as determined through these methods are as follows.

Table 1. Risk rating summary

ISA Level 2 Risk Rating	Count
Low	**81**
Moderate	**5**
High	**4**
Extreme	**1**
Total	**91**

General Risk Mitigation Recommendations

Table 2. Recommendations summary.

Primary Recommendation	Primary Count	Secondary / Optional Recommendations	Optional Count
Retain and monitor.	**81**	*Of these trees, twelve (12) have alternative options available as follows:*	
		Level 3 Assessment	*6*
		Reduction Pruning	*5*
		Removal or snag conversion	*1*
Remove or convert to a snag.	**7**	*Of these trees, four (4) have alternative options available as follows:*	
		Retain and monitor through a more frequent inspection interval	*3*
		Reduce height and convert to a living snag	*1*
Remove remaining live branch/stem	**1**		
Retain and monitor through a more frequent, annual inspection interval.	**2**		
Total	**91**		*16*

In addition to per-tree mitigation treatment recommendations, I also recommend that the children's play areas be closed during abnormal weather events where strong winds and snow/ice accumulation could cause branches or other tree parts to fail and land within the play area. This target occupancy control treatment could also be applied to the gravel pedestrian pathway and vehicle parking areas if desired.

For all trees included in this assessment that do not receive an intervening treatment or modified inspection interval, continued monitoring and a reassessment within three (3) years is recommended. If our recommended treatments are implemented, such as snag conversion or reduction pruning, we recommend that a qualified arborist inspect and assess the treated trees immediately after treatment to ensure treatment meets mitigation goals, and so the arborist can establish an appropriate reinspection interval.

Introduction

As requested by Nicole Dewey, United General District 304 (UGD 304) Senior Accountant, I conducted an ISA Level 2 Basic Risk Assessment for 91 trees growing within and surrounding the property known as UGD 304's Heartwood House Facility in Sedro-Woolley, Washington. I conducted and completed my fieldwork on August 13, 2024.

The purpose of our engagement was to support UGD 304 in providing a risk assessment of trees within and surrounding the Heartwood House facility property. UGD 304 management feels the trees surrounding this facility are concerning and sensitive due to their size and proximity to the facility in the context of a recent whole-tree failure that occurred last winter, which struck and damaged the facility.

Nicole Dewey defined the assessment area during our pre-engagement correspondence; this area is shown in our proposal documents and the plans included in this report.

Through my findings and recommendations that follow, I feel UGD 304 will have the information and mitigation options they need to effectively manage identified risks associated with trees surrounding persons, property, and use throughout and surrounding the property. In so doing, this risk management also has the potential to extend the useful life of UGD 304's valuable living assets.

I believe that the risk mitigation options I provide, combined with continued engagement with our office during and after mitigation, will ensure that the important social, environmental, and economic benefits that these trees offer this important community health facility are maximized to their fullest while also ensuring any potential risks associated with the trees are managed and monitored responsibly.

Findings

A *Tree Assessment Matrix* with detailed information on each of the trees included in the ISA Level 2 Basic Assessment portion of this work is attached. A *Tree Risk Assessment Site Plan – TA-01 and TA-02* - is also attached and shows the boundaries of the assessment area, each of the assessed trees and tree groups, and their associated risk ratings.

Site and Assessment Area Summary

The site can be generally characterized as a densely treed, predominantly single-story stand of mostly even-aged native tree species. Impressive and unique for the site are the very large

trunk diameters observed throughout the site. The assessed trees, as well as other large trees in areas surrounding the assessment area, appear to be long-standing, remnant second-growth trees.

Photos 1 & 2. These photos show significant portions of the site and assessment area as well as important targets considered during my assessment. Photo 1, upper frame, looking west, shows the exit road and gravel pedestrian path. The Heartwood House can be seen behind the trees. Photo 2, lower frame, looking northwest , shows the Heartwood House and the fenced recreational area to the facility's rear.

The site comprises a main centrally located facility building known as the Heartwood House facility. Vehicle parking is located directly east of the building. West of the facility is an expansive fenced-in area containing recreational space for children, including a covered structure with recreational equipment. Further west, beyond the fenced recreational area are single family residential properties. A regularly used gravel pedestrian pathway traveling east-west connects the Heartwood House facility with the other UGD 304 facilities to the east, which are located outside the assessment area. Near the eastmost end of this path is an exit road that defines the eastern edge of the assessment area. Another shorter gravel pedestrian pathway traveling north-south connects the facility with the parking areas and neighboring medical facilities to the north of the assessment area. To the south of the assessment area spans Highway 20, traveling east-west.

The site is dominated by western red cedar (*Thuja plicata*), which comprises over 65% of the population. Douglas fir (*Pseudotsuga menziesii*) is the second most prevalent species at 24%. Other less prevalent species include broadleaf species such as bigleaf maple (*Acer macrophyllum*), bitter cherry (*Prunus emarginata*), paperbark birch (*Betula papyrifera*), and red alder (*Alnus rubra*). Interestingly, as discussed further in the discussion section below, the tree that failed and prompted this assessment appeared to be western hemlock (Tsuga heterophylla) based on photos of the failure provided by UDG 304. No other hemlock species were found on site.

Table 3. Species distribution summary.

Species	***Count***
Western red cedar (*Thuja plicata*)	60
Douglas fir (*Pseudotsuga menziesii*)	22
Bigleaf maple (*Acer macrophyllum*)	5
Red alder (*Alnus rubra*)	2
Bitter cherry (*Prunus emarginata*)	1
Paperbark birch (*Betula papyrifera*)	1
Total	**91**

The understory throughout the assessment area was relatively baren of native understory species. Some small pockets of understory shrubs and groundcovers exist in the northwest corner of the site and near the southern entrance; however, most of the understory is either bare, non-vegetated, detritus-covered ground or covered by English ivy (*Hedera helix*) and emerging Himalayan blackberry (*Rubus armeniacus*)

Tree trunk diameters throughout the site range from less than 4 inches DBH up to 66 inches DBH. Impressively, the average trunk diameter is roughly 35 inches DBH, with 30 trees exceeding 40 inches DBH.

The predominant condition rating of the trees throughout the site is *fair.* The condition rating is a function of the combination of a tree's health, structure, and form. Exceptions to this *fair* overall condition are eight trees in good condition, six trees in poor to very poor condition and one tree that is dead.

Table 4. Condition rating summary.

Condition Rating	Count
Excellent	0
Good	8
Fair	76
Poor	5
Very Poor	1
Dead	1
Total	**91**

Regulated Trees

Significant[1] ***– 83 Trees***
Non-significant – 8 Trees

Of the 91 trees included in this assessment, 83 met the size thresholds that classify them as *significant* according to Sedro-Woolley code definitions (SWMC 17.50.110). Each of these *significant* trees were individually assessed and are shown as individual tree points on the attached *Tree Risk Assessment Site Plan – TA-01 and TA-02.*

Eight (8) assessed trees did not meet the City's size thresholds. Trees that did not meet the *significant* size thresholds were not individually assessed but rather included as "tree groups" due to their small stature and unlikely likelihood of presenting a risk to surrounding targets. These tree groups are shown on the attached Tree Risk Assessment Site Plan – *TA-01 and TA-02*.

Risk Assessment

The timeframe for this assessment is three (3) years.

I assessed 91 trees throughout the predefined assessment area using ISA Level 2 Basic Risk Assessment methods. The attached *Tree Risk Assessment Site Plan – TA-01 and TA-02* shows the approximate location of each of these trees and their associated risk ratings. Also attached are *ISA Level 2 Tree Assessment Matrix* sheets that include detailed risk, condition, and recommendation information for each of the assessed *significant* trees.

Table 5 below details the ISA Level 2 risk rating determinations distribution of the assessed trees. Also provided in the table are the corresponding Sedro-Woolley code size designations for *significant* and non-significant trees. The recommendations that follow this section provide specifications and more detailed information surrounding mitigation options for these trees.

[1] "Significant trees" shall be those eight inches evergreen and ten inches deciduous trees in diameter at a point five feet above ground level. (SWMC 17.50.110)

Table 5. ISA Level 2 risk rating determinations summary.

ISA Level 2 Risk Rating	Sedro-Woolley Size Designation	Count	Tree ID	Totals
Low	Significant	73	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 22, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 80, 81, 82, 83	81
	Non-significant	8	G1, G2, G3	
Moderate	Significant	5	23, 25, 40, 44, 79	5
	Non-significant	0		
High	Significant	4	14, 20, 21, 76	4
	Non-significant	0		
Extreme	Significant	1	24	1
	Non-significant	0		
			Totals	91

Targets for these Level 2 trees varied by area but generally included existing structures, recreational/play areas, pedestrian pathways, vehicle parking, and roadways. Specific targets are detailed per tree in the attached *Tree Assessment Matrix* sheets.

Occupancy rates for these targets were considered in the context of our observation at the time of our site visit and anticipated future use. While some targets are expected to remain static and constant, such as structures and major roadways, pedestrian use within the recreational/play areas and pedestrian pathways for the facility, as well as vehicular parking, are known to fluctuate depending on the season and time of day and typically are limited to regular business hours. Nevertheless, pedestrian occupancy and vehicular parking were considered frequent for this assessment based on my observations while on site. During my assessment, I observed an intermittent flow of pedestrian use on the gravel pathways to and from the Heartwood House facility and the UGD 204 main office. Vehicular parking also flowed intermittently to and from the site.

Tree **parts of concern** considered during the assessment process varied by tree and tree location (proximity to surrounding targets). In total, 50 trees had parts of concern that were observed and assessed using Level 2 methods. Some examples of observed parts of concern include codominant stems, large potentially overextended branches, and stems or branches with notable defects or abnormalities that may be prone to fail.

Forty-one (41) trees did not have any observed parts of concern that warranted documentation. As a result, Level 2 risk assessment metrics such as the *likelihood of failure*, *likelihood of impact*, and *consequences* did not apply to these trees, and they received *low* risk ratings. This does not mean that these trees are completely free of defects, but rather that no defects or parts of concern were observed during my assessment.

Risk Assessment Limitations

Assignment

My ground-based ISA Level 2 Basic Risk Assessment of the trees throughout the predefined assessment area is based on a single site visit on August 13, 2024.

My assignment, as outlined in our July 2024 agreement, was to complete an ISA Level 2 Basic Risk Assessment of all trees within the predefined assessment area (see TA-01 and TA-02), as defined by Nicole Dewey during our pre-engagement site meeting, to evaluate any potential risk associated with the trees or tree parts assessed.

Each tree was evaluated from the ground from all reasonably accessible angles. In some cases, a wire probe or sounding mallet was used to evaluate decay presence or extent more closely.

All photographs, samples, and readings, if applicable, were taken at the time the assessments were performed. Our assessment is limited to visible and accessible portions of the root collar and canopy; vegetation covering the ground and tree parts, such as dense understory vegetation, vines, etc., may be obstructing significant defects from view.

Tree Risk Assessments

It is important for United General District 304 management to know and understand that all trees pose some degree of risk from failure or other conditions. The information and recommendations within this report have been derived from the level of tree risk assessment identified above, using the information and practices outlined in the *International Society of Arboriculture's Best Management Practices for Tree Risk Assessment* and *Assessment* and *American National Standards Institute A300 Tree Risk Assessment Standard*, as well as the information available at the time of the inspection. However, the overall tree risk rating, the mitigation recommendations, or any other conclusions do not preclude the possibility of failure from undetected conditions, weather events, or other acts of man or nature. Trees can unpredictably fail even if no defects or other conditions are present. Tree failure can cause adjacent trees to fail, resulting in a "domino effect" that impacts targets outside the foreseeable target zone of any single tree. It is the responsibility of the tree owner or manager to schedule repeat or advanced assessments, determine actions, and implement follow-up recommendations, including monitoring and/or mitigation.

Bartlett Tree Experts can make no warranty or guarantee whatsoever regarding the safety of any tree, trees, or parts of trees, regardless of the level of tree risk assessment provided, the risk rating, or the residual risk rating after mitigation is complete. The information in this report should not be considered as making safety, legal, architectural, engineering, landscape architectural, land surveying advice or other professional advice. This information is solely for the use of the tree owner and manager to assist in the decision-making process regarding the management of their tree or trees. Tree risk assessments are simply tools that should be used in conjunction with the owner or tree manager's knowledge, other information and observations related to the specific tree or trees discussed and sound decision-making.

Discussion

The need for this assessment engagement arose after a tree failed completely at the roots during a storm in November 2023, striking the Heartwood House Facility and significantly damaging part of the structure. Fortunately, the timing of the failure after normal business hours and while the facility was undergoing renovations meant that no other targets, such as people or vehicles, were impacted.

In reviewing photos of the failed tree provided by UGD 304, it appears that the tree was a mature western hemlock (*Tsuga heterophylla*). Because only photos were available to me preceding my fieldwork, and I was not able to evaluate the failed tree in person due to the timing of the event and our engagement, I am unable to provide a conclusive assessment of the failed tree and what may have caused its failure. Still, based on the photos provided, the tree's crown appeared to be somewhat diminished and thin, and the failed roots in areas of the failed root plate appeared stunted and limited in their spread. What I observed in the photos appeared similar to common symptoms of root disease. In the photos, it also appears as though there may have been little to no root flair on the northwest side of the tree, indicating root growth may have been limited in this area, damaged at some point, or there could have been a girdling root in that location.

Photos 3 & 4. These photos show parts of the failed root plate (L) and canopy (R) of the tree that failed in 2023.

Ultimately, and interestingly, the tree that failed was the only species of its kind I found throughout the site. Western hemlock is a species that is commonly impacted by wood decay pathogens that consume and degrade stem and root wood. In built environments, diseased western hemlock can be dangerous and unpredictable, especially near structures and uses. While I cannot definitively point to a specific pathogen, it appears as though root disease leading to root decay may be a contributing factor in the tree's failure. Again, these comments on the failed tree are merely conjecture based on photographs and not a substitute for a comprehensive field assessment. It is important to clarify that I did not observe any signs or symptoms during my fieldwork that would lead me to believe that the remaining tree population on site is threatened or impacted by root disease(s).

Given that this was the only tree of its kind on the site and that the other trees did not appear to exhibit signs or symptoms consistent with root disease, I believe that the failed hemlock was an isolated event. Root failure with the remaining population (of which no other western hemlock trees exist) is improbable.

Mitigation Recommendations and Options

In addition to the per-tree mitigation treatment recommendations outlined below, I also recommend that access and use within the children's play areas be restricted during abnormal weather events where strong winds and snow/ice accumulation could cause branches or other tree parts to fail and land within the play area. This target occupancy control treatment could also be applied to the gravel pedestrian pathway and vehicle parking areas if desired.

1. **Retain and Monitor –** 81 trees

I believe Eighty (80) *low* risk trees and one (1) *moderate* risk tree can be effectively managed through continued monitoring and reassessment within 3 years.

a. Regular monitoring and reassessment shall follow current ANSI A300 Tree Risk Assessment Standards and ANSI Z133.1 safety standards and be performed by an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist®.

Table 6. Retention and monitoring recommendation summary by risk rating.

ISA Level 2 Risk Rating	Sedro-Woolley Size Designation	Count	Tree ID	Totals
Low	Significant	72	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18, 19, 22, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 80, 81, 82, 83	80
	Non-significant	8	G1, G2, G3	
Moderate	Significant	1	79	1
	Non-significant	0		
			Totals	81

1.1 Mitigation options:

The following alternative treatments have been identified for select trees in the event that further evaluation or management is desired. I believe that my primary recommendation above will be sufficient; however, additional assessments and treatments could still be performed for these select trees if an additional level of management is desired.

1.1.1 Level 3 Assessment – 6 trees

The following trees could be more closely evaluated through advanced assessment methods such as aerial assessment or using advanced internal wood evaluation technologies to determine whether the parts of concern are indeed sound. Refer to the *Tree Assessment Matrix* sheets for specific advanced assessment types.

Trees 1, 53, 54, 64, 68, and 81

a. ISA Level 3 Advanced Assessments shall follow current ANSI A300 Tree Risk Assessment Standards and ANSI Z133.1 safety standards and be performed by an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist®.

1.1.2 Pruning – 5 trees

The likelihood of branch or stem failure could be further reduced for the following trees through reduction pruning. Refer to the *Tree Assessment Matrix* sheets for specific pruning treatment details.

Trees 10, 65, 66, 69 and 79

a. Prune with the goal of mitigating the likelihood of branch failure for long, large dead and live branches that could contact the surrounding targets if they were to fail.
b. Prune using a 'natural system' to reduce the length of long branches.
c. Do not remove more than 20% of the tree's live foliage.
d. Do not top any tree or its branches. Reduction cuts should be made at viable lateral branches.
e. Do not thin, "spiral prune," or "wind sail" this tree.
f. Pruning work shall follow ANSI A300 pruning standards, ANSI Z-133 safety standards and be completed by (or directly supervised by) an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist.
g. UFS|BC can provide recommended service providers for this work upon request.

1.1.3 Removal or snag conversion – 1 tree

One (1) low-risk tree in poor overall condition could be removed or converted to a snag to eliminate any opportunity for the tree to fail and contact the parking area to the west. Refer to the *Tree Assessment Matrix* sheets for specific treatments.

Tree 71

a. Tree removal shall be done in a manner that does not damage above and below-ground parts of surrounding retained trees.
b. Where possible, cut stumps low to the ground and leave the root mass in place. Root extraction or stump grinding is neither advised nor necessary.
c. Wood debris may be left on the site if desired. Lying deadwood is ecologically beneficial. Ideally, logs no shorter than 4 feet in length with natural cavities and hollows would be left on site. This is not a recommendation to leave a mess of debris and firewood rounds that damage or snuff out surrounding vegetation.
d. All removal activities shall adhere to ANSI Z133 Safety Standards.
e. UFS|BC can provide recommended service providers for this work upon request.

2. ***Remove or convert to a snag*** – *7 trees*

The following trees with moderate, high, and extreme risk ratings should be removed or converted to snags to mitigate the associated risk.

Table 7. Removal or snag conversion recommendation summary by risk rating.

ISA Level 2 Risk Rating	Sedro-Woolley Size Designation	Count	Tree ID	Totals
Moderate	Significant	2	25 40	2
	Non-significant	0		
High	Significant	4	14 20 21 76	4
	Non-significant	0		
Extreme	Significant	1	24	1
	Non-significant	0		
			Totals	7

While extremely effective in mitigating risk, it is important to understand that complete tree removal is not always the best or most ecologically or socially responsible option in a manager's risk management toolkit. As such, snag conversion guidance is provided below to offer another tool to mitigate risk while also preserving valuable features for local wildlife.

Removal guidance:

a. Tree removal shall be done in a manner that does not damage above and below-ground parts of surrounding retained trees.
b. Where possible, cut stumps low to the ground and leave the root mass in place. Root extraction or stump grinding is neither advised nor necessary.
c. Wood debris may be left on the site if desired. Lying deadwood is ecologically beneficial. Ideally, logs no shorter than 4 feet in length with natural cavities and hollows would be left on site. This is not a recommendation to leave a mess of debris and firewood rounds that damage or snuff out surrounding vegetation.
d. All removal activities shall adhere to ANSI Z133 Safety Standards.
e. UFS|BC can provide recommended service providers for this work upon request.

Snag/wildlife tree conversion guidance:

a. This is not a recommendation to leave a tall, flat-top, featureless stem. Naturalizing the stem with fracture cuts, retaining branches for perches, and keeping or creating other features for wildlife are essential components of this recommendation.
b. Cut the trees to a height that will prevent the snags from striking surrounding targets in the event of their failure.
c. All work should be in accordance with the ANSI Z133.1 safety standards and be performed or directly supervised by an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist® with experience in creating wildlife snags with features that have a high likelihood of future wildlife use.
d. Wood debris may be left on the site if desired. Lying deadwood is ecologically beneficial. Ideally, logs no shorter than 4 feet in length with natural cavities and hollows would be left on site. This is not a recommendation to leave a mess of debris and firewood rounds that damage or snuff out surrounding vegetation.
e. The arborist(s) creating the snags shall determine a monitoring interval for the snags at the time the work is completed.
f. UFS|BC can provide recommended service providers for this work upon request.

g. See the attached *Wildlife Snag Detail* for wildlife tree guidance and information on implications.

2.1 Mitigation options:

The following alternative treatments have been identified for select trees in the event that management or the owner wishes to employ alternative strategies to minimize tree removal. I believe that my primary recommendation above will be the most effective course of mitigation for these trees; however, select trees could be retained with alternative strategies if management or the owner has a higher risk threshold.

2.1.1 Retain and monitor through a more frequent inspection interval – 3 trees

The following trees could be monitored through a more frequent inspection interval to ensure the trees are stable or if they are reaching an unacceptable level of risk. The minimum interval recommended for this option is annual – a qualified arborist should assess the following trees using ISA Level 2 Basic Risk Assessment methods each year. Refer to the *Tree Assessment Matrix* sheets for specific advanced assessment types.

Trees 20, 21, and 40

a. Annual ISA Level 2 Basic Risk Assessment shall follow current ANSI A300 Tree Risk Assessment Standards and ANSI Z133.1 safety standards and be performed by an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist®.

2.1.2 Reduce height and convert to a living snag – 1 tree

The likelihood of stem failure due to the significant defect at the base of the tree could likely be reduced for the following tree by reducing the height and converting the tree to a living snag. Refer to the *Tree Assessment Matrix* sheets for specific treatment details.

Trees 76

a. This is not a recommendation to leave a tall, flat-top, featureless dead stem. Instead, the goal is to let the tree live while reducing its height in a way that provides a natural appearance and lowers the likelihood of stem failure.
b. Reduce the height of the tree by 1/3 and naturalize the top of the shortened stem with fracture cuts.
c. Reduce the length of live branches from below the fracture-cut top and taper the length of branches outward low into the canopy until a natural form is achieved and the need to reduce branches is no longer needed.
d. Retain some longer branches in the upper canopy for perches.
e. All work should be in accordance with the ANSI Z133.1 safety standards and be performed or directly supervised by an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist® with experience in creating living wildlife snags with features that have a high likelihood of future wildlife use.
f. The arborist(s) creating the snags shall determine a monitoring interval for the snags at the time the work is completed.
g. UFS|BC can provide recommended service providers for this work upon request.
h. See the attached *Wildlife Snag Detail* for wildlife tree guidance and information on implications.

3. ***Remove remaining live branch/stem –*** *1 tree*

Tree number 12 is a *low* risk snag. The snag appears to have been created after the tree was removed. Since removal, the retained branches have begun assuming the terminal role and are beginning to reach a substantial size. While these branches/future stems are currently low risk, they may become a higher risk as they grow larger and the parent stem continues to degrade. I recommend removing these remaining live branches to preemptively manage this future problem.

a. Completely remove the live branches while retaining the snag for wildlife.
b. All work should be in accordance with the ANSI Z133.1 safety standards and be performed or directly supervised by an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist®.
c. UFS|BC can provide recommended service providers for this work upon request.

4. **Retain and monitor through a more frequent inspection interval** – 2 trees

The following moderate risk trees are recommended for retention with a more frequent inspection interval to ensure the trees remain stable and do not reach an unacceptable level of risk. The minimum interval recommended for this option is annual – a qualified arborist should assess the following trees using ISA Level 2 Basic Risk Assessment methods each year. Refer to the *Tree Assessment Matrix* sheets for specific advanced assessment types.

Trees 23 and 44

b. Annual ISA Level 2 Basic Risk Assessment shall follow current ANSI A300 Tree Risk Assessment Standards and ANSI Z133.1 safety standards and be performed by an ISA Certified and Tree Risk Assessment Qualified (TRAQ) Arborist®.

Please let me know if you have any questions regarding the findings and recommendations included in this tree risk assessment.

Tyler Holladay, Consultant
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Literature Cited

ISA Tree Risk Assessment Manual, Dunster, L., Smiley, T., Matheny, N., and Lilly, S., 2013 International Society of Arboriculture

ISA Best Management Practice, Tree Risk Assessment, Smiley, T., Matheny, N., and Lilly, S. 2001 International Society of Arboriculture.

Tree Risk Assessment in Urban Areas and Urban / Rural Interface, Dunster, J. 2009 Pacific Northwest Chapter, International Society of Arboriculture.

Tree Risk Assessment Vocabulary

Tree risk assessment has a unique set of terminology with specific meanings. A complete list of tree risk vocabulary and procedures may be found in the International Society of Arboriculture's (ISA) *Best Management Practice (BMP) for Tree Risk Assessment* or the American National Standards Institute (ANSI) *A300 Tree Risk Assessment Standard*. The following information is provided to assist the owner/client with understanding some of the common industry phrases or language, and some of the procedures and methodologies associated with the industry language used in the proposal and/or report.

Vocabulary Used Throughout Proposals and Reports

Inspection interval is the recommended amount of time between inspections or assessments.

Occupancy rates categorize the estimated time a target is physically within a target zone. Occupancy rate is classified as rare, occasional, frequent, or constant.

Overall risk rating is the highest individual risk identified for the tree.

Residual risk is the estimated level of risk that will remain after the recommended mitigation efforts to reduce the risk have been made. This estimate is provided to help the client understand that some level of risk may still exist and plan appropriately for future risk management.

Risk is the likelihood of an event and its consequences.

Risk rating for a tree or tree part is the combination of the likelihood of failure, the likelihood of impact, and the consequences.

Time frame is the period the assessor uses in which to estimate the likelihood of failure in all categories except the "imminent" category. The use of a time frame is meant solely to help the assessor better determine the portions of the risk analysis which are time dependent. The owner/client should never consider the time frame a "guarantee period" for the risk assessment or that the tree will not fail or is safe within the stated time frame.

Targets are people, property, or activities that could be injured, damaged or disrupted by a tree or tree part failure.

Target occupancy rates are typically identified based on information obtained from the owner/client prior to conducting the assessment, as well as information gained during the limited time the assessor evaluates the tree and site. Targets, target zones, and occupancy rates may be adjusted based on observations during the assessment.

Target zones are the areas where a tree or tree part is likely to land if it were to fail. The target zone(s) is determined in the field at the time of the assessment.

Trees can generally be defined as a woody perennial plant with a single trunk, defined crown, and will reach a minimum height of 15 feet at maturity.

Tree parts include branches, fruit, and trunks.

Tree risk is the likelihood of a tree failure impacting a target and the severity of the consequences.

Vocabulary Used Throughout Proposals and Reports

Tree risk assessment is the systematic process used to identify, analyze, and evaluate tree risk. Tree risk assessments are conducted to assist the tree owner or client in better understanding the risk their trees pose so they can make management decisions to reduce or minimize those risks. Tree risk assessments focus on evaluating the structural integrity of the tree crown, branches, trunks, and roots and root collar.

Tree risk assessors are trained arborists or qualified professionals with experience in performing tree risk assessments.

Vocabulary Used to Communicate Occupancy Rates

Constant indicates a target is present in the target zone at nearly all times, 24 hours a day, seven days a week.

Frequent indicates a target is present in the target zone for a large portion of the day or week.

Occasional indicates a target is present in the target zone infrequently or irregularly.

Rare indicates a target zone that is not commonly used by people or other mobile/movable targets.

Vocabulary Used to Communicate the Likelihood of Failure

Imminent indicates that failure has started or is most likely to occur in the near future, even if there is no significant wind or increased load.

Probable indicates that failure may be expected under normal weather conditions within the specified time frame.

Possible indicates that failure could occur, but is unlikely under normal weather conditions within the specified time frame.

Improbable indicates that failure is not likely during normal weather conditions, and it may not fail in extreme weather conditions within the specified time frame.

Vocabulary Used to Communicate the Likelihood of Impacting a Target

High indicates that a failed tree or tree part will most likely impact a target.

Medium indicates the failed tree or tree part could impact the target but is not expected to do so.

Low indicates that the failed tree or tree part is not likely to impact a target.

Very low indicates that the likelihood of a failed tree or tree part impacting the specified target is remote.

Vocabulary Used to Communicate the Likelihood of a Failure Impacting a Target

Very likely to impact a target is reached by an imminent likelihood of failure and high likelihood of impact.

Likely to impact a target can be reached by an imminent likelihood of failure and medium likelihood of impact; or probable likelihood of failure and high likelihood of impact.

Somewhat likely to impact a target can be reached by one of the following combinations; an imminent likelihood of failure and low likelihood of impact; probable likelihood of failure and medium likelihood of impact; or possible likelihood of failure and high likelihood of impact.

Vocabulary Used to Communicate the Likelihood of a Failure Impacting a Target

Unlikely to impact a target can be reached by one of the following combinations; a possible or probable likelihood of failure and low likelihood of impact; possible likelihood of failure and medium likelihood of impact; improbable likelihood of failure with any likelihood of impact rating; or any likelihood of failure rating with very low likelihood of impact.

Vocabulary Used to Communicate the Consequences of Failure and Impact

Severe consequences could involve serious personal injury or death, high-value property damage, or major disruption to important activities.

Significant consequences are those that could involve substantial personal injury, property damage of moderate to high value, or considerable disruption of activities.

Minor consequences are those that are believed will only cause minor personal injury, low-to-moderate-value property damage, or small disruption of activities.

Negligible consequences are those that are believed will not result in personal injury, will only involve low-value property damage, or disruptions that can be replaced or repaired.

Vocabulary Used to Communicate Overall Risk Ratings

Extreme risk applies in situations in which failure is imminent, there is a high likelihood of impacting the target, and the consequences of the failure are severe.

High risk situations are those for which consequences are significant and likelihood is very likely or likely; or consequences are severe and likelihood is likely.

Moderate risk situations are those for which consequences are minor and likelihood is very likely or likely; or likelihood is somewhat likely and consequences are significant or severe.

Low risk situations are those for which consequences are negligible and likelihood is unlikely; or consequences are minor and likelihood is somewhat likely.

Explanation of Tree Risk Levels

The three levels of tree risk assessment defined in the *ANSI A300 Tree Risk Assessment Standard* are:

I. Level 1: Limited Visual Assessment

This level of assessment provides a visual assessment from a defined perspective (e.g., from the sidewalk, street, or aerial view) of an individual tree or population of trees to assess risk to specified targets from obvious defects or specified conditions.

Level 1 assessments are typically performed to quickly assess large populations of trees or conduct a rapid assessment of an individual tree. The assessor views only one side of the tree while walking on a sidewalk, being unable to access a neighboring property, looking from a slow-moving car, or from above with a drone, helicopter, or airplane.

A Level 1 assessment requires the client to identify the location and/or selection criteria of trees to be assessed. The assessor may:

1. Determine the most efficient route and document the route taken.

2. Assess the tree(s) within the area from the defined perspective (e.g., walk-by or drive-by).
3. Record the location of trees that meet the defined criteria (e.g., significant defects or other conditions of concern).
4. Evaluate the risk (risk rating is optional).
5. Identify trees requiring a higher level of assessment (Level 2 or Level 3) and/or prompt action.
6. Submit risk mitigation recommendations and/or a report.

Limitations: Level 1 assessments are the least thorough means of assessment. They are typically from one perspective, such as a walk-by, a drive-by, or aerial view. This level of assessment is most commonly used to prioritize higher-risk trees within larger groups of trees when there are budgetary, time, or other management constraints. Some defects or conditions will not be visible to the inspector, nor will all conditions visible at all times of the year; therefore, not all higher-risk trees will be accurately identified. In addition, the assessment may not provide enough information to assign a risk rating, make a risk mitigation recommendation, or determine residual risk.

II. Level 2: Basic Assessment

A Level 2 assessment is a detailed visual inspection of a tree and its surrounding site and a synthesis of the information collected. It requires a 360° ground-based inspection around a tree, including the site conditions, visible buttress roots, trunk, branches, and crown.

The Level 2 assessment may include using tools such as binoculars, mallet, or probe at the discretion of the assessor or at the request of the owner/client.

At this level, the assessor may:

1. Locate and identify the tree or trees to be assessed.
2. Determine the targets and target zone for the tree or tree part(s) of concern.
3. Review the site history and conditions, and species failure profile.
4. Assess potential load on the tree and its parts.
5. Assess general tree health.
6. Inspect the tree visually which may include the use of common tools such as binoculars, mallet, probes, and/or shovels, as specified in the Scope of Work.
7. Record observations of site conditions, defects, indicators of internal defects, and response growth.
8. If necessary, recommend a Level 3 advanced assessment.
9. Analyze data to determine the likelihood of failure, likelihood of impact, and consequences of failure to evaluate the degree of risk.
10. Develop mitigation options and estimate residual risk for each option.
11. Recommend a re-inspection interval.
12. Prepare and submit a report.

Limitations: Level 2 assessments only include conditions and defects that can be detected from a ground-based visual inspection on the day of the assessment. Below-ground, internal, or upper-crown conditions, decay, and defects may not be detected.

III. Level 3: Advanced Assessment

A Level 3 assessment is performed to provide detailed information about specific tree parts, defects, targets, or site conditions. These are usually conducted in conjunction with or after a Level 2 assessment with owner/client approval. Specialized equipment, data collection and analysis, and/or expertise are usually required for Level 3 assessments.

At this level, the assessor may:

1. Locate and identify the tree or trees to be assessed.
2. Determine the targets and target zone for the tree or tree part(s) of concern.
3. Review the site history and conditions, and species failure profile.
4. Assess potential load on the tree and its parts.
5. Assess general tree health.
6. Inspect the tree and/or site using advanced techniques as specified in the Scope of Work.
7. Record results from advanced techniques.
8. Analyze data to determine the likelihood of failure, likelihood of impact, and consequences of failure to evaluate the degree of risk.
9. Develop mitigation options and estimate residual risk for each option.
10. Recommend a re-inspection interval.
11. Recommend other advanced assessments, if necessary.
12. Prepare and submit a report.

*Items 1-5 may be included in the associated Level 2 assessment.

Procedures and Methodologies Often Used for Level 3 Assessments

Level 3 procedures and methodologies, which are referred to as technologies, may include:

Procedure	Methodology
Aerial inspection and evaluation of structural defects in upper stems and branches	• visual inspection from within the tree crown or from a lift • unmanned aerial vehicle (UAV) photographic inspection • decay testing of branches
Detailed target analysis	• property value of anything potentially impacted by tree failure • use and occupancy statistics • potential disruption of activities such as road blockage or an electrical outage
Detailed site evaluation	• history evaluation • soil profile inspection to determine root depth • soil mineral and structural testing
Decay and wood analysis	• increment boring • drilling with small-diameter bit • resistance-recording drilling • single path sonic (stress) wave • sonic tomography • electrical impedance tomography • radiation (radar, X-ray) • advanced analysis for pathogen identification
Health evaluation	• tree ring analysis (in temperate zone trees) • shoot length measurement • detailed health/vigor analysis

Procedure	Methodology
	• starch assessment
Root inspection and evaluation	• root and root collar excavation • root decay evaluation • ground-penetrating radar
Storm/wind load analysis	• detailed assessment of tree exposure and protection • computer-based estimations according to engineering models • wind reaction monitoring over a defined interval
Measuring and assessing the change in trunk lean	• visual documentation • digital level
Load testing	• hand pull • measured static pull • measured tree dynamics

Limitations: Level 3 assessments that include specialized technologies may have uncertainty and require qualified estimations. Exact measures may not be feasible.

Conclusion

Regardless of the level of assessment conducted, every assessment is limited to the trees identified in the scope of work, conditions detectable at the time of the assessment, the level of communication with the owner/client, and other conditions that affect the assessor's ability to collect information. Not all defects and conditions are detectable, and not all tree failures can be predictable. Trees are living organisms, and as such, every tree's structural conditions change over time.


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September 16, 2023

Tree Assessment Matrix

United General District 304
Sedro-Woolley, Washington

ARBORIST:

Tyler Holladay
ISA Certified Arborist® #PN-8100A,
ISA Tree Risk Assessment Qualified

Urban Forestry Services
BARTLETT CONSULTING
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Species: Western red cedar (Thuja plicata)

DBH/QMD:	36.5 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	16 ft

Tree ID: 1

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: TBD

Risk Assessment Components

Target(s): Roadway to the south and fence line

Tree Parts(s) of Concern: Codominant tops

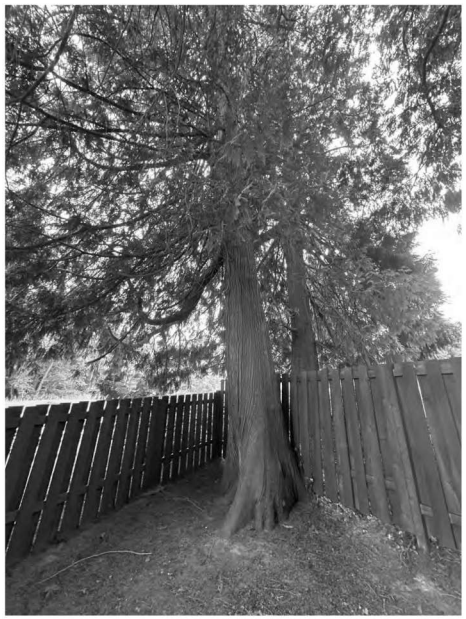
Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Significant

Recommendations: Option 1: Monitor. Option 2: Conduct a Level 3 Advanced Assessment - aerial inspection of codominant union.

Notes: This tree has two slightly codominant tops in the upper canopy. The tops appear to be well attached and do not appear to contain included bark at their union; however, the union is difficult to see clearly from the ground.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	42.3 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	18 ft

Tree ID: **2**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Roadway to the south, fence line, play area

Tree Parts(s) of Concern: None

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes:

Species: Western red cedar (Thuja plicata)

DBH/QMD:	49.4 in	Height	Dripline Ave. *(r)*
Stems:	2	80 ft	16 ft

Tree ID: **3**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Risk Assessment Components

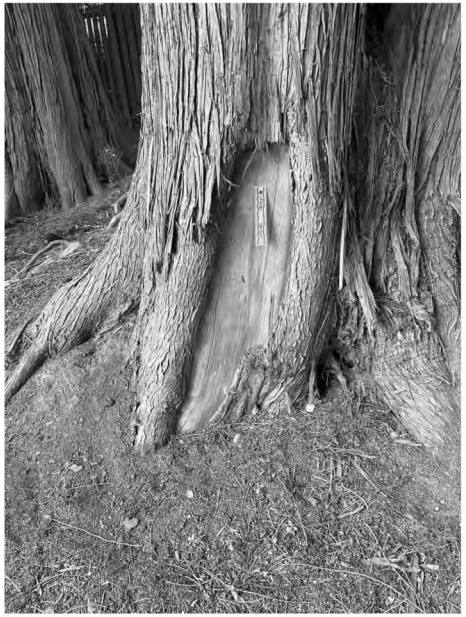
Target(s): Roadway to the south, fence line, play area

Tree Parts(s) of Concern: Smaller codominant stem

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Significant

Recommendations: Monitor.

Notes: This tree contains an injury on the northeast side of the tree at the base. This tree has a suppressed codominant stem on the east side; the codominant union appears stable at this time.



Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD: 40.5 in	**Height**	**Dripline Ave.** *(r)*
Stems: 1	100 ft	25 ft

Tree ID: **4**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Play area

Tree Parts(s) of Concern: Large longer branches

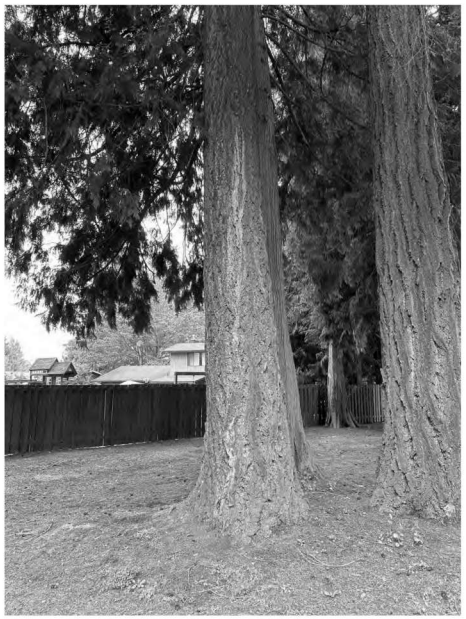
Condition Rating: Fair (73%)

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree exhibits pitch that has seeped on the south side of the trunk that has since dried and crusted.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	34.6 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	18 ft

Tree ID: **5**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): fence line, play area

Tree Parts(s) of Concern: None

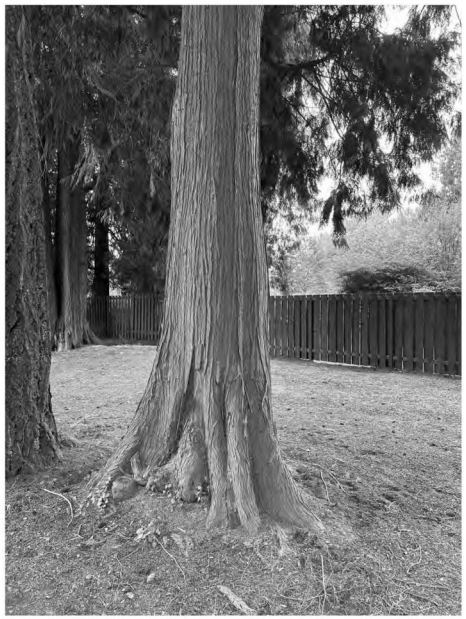
Condition Rating: Fair (66%)

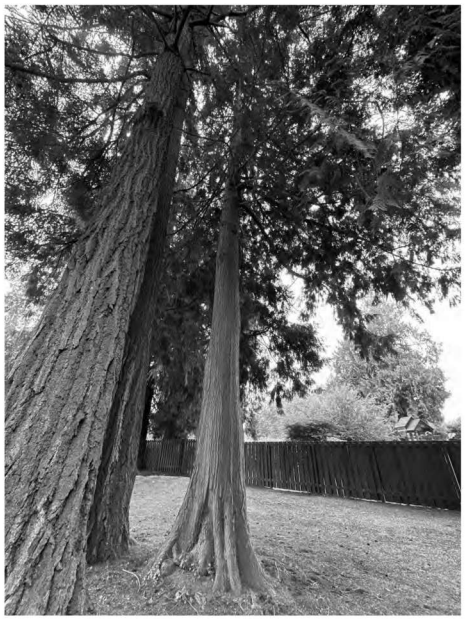
Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree contains a small codominant stem in the upper canopy. The codominant stem appears inconsequential and relatively well attached at the union. This tree exhibits a slight phototropic lean to the northwest due to its close proximity to neighboring trees. The base of the trunk has some swelling at around 5 feet. Sounding of the swollen area sounds relatively solid.





Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD: 43.9 in	**Height**	**Dripline Ave.** *(r)*
Stems: 1	110 ft	25 ft

Tree ID: **6**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (73%)

Risk Assessment Components

Target(s): Play area

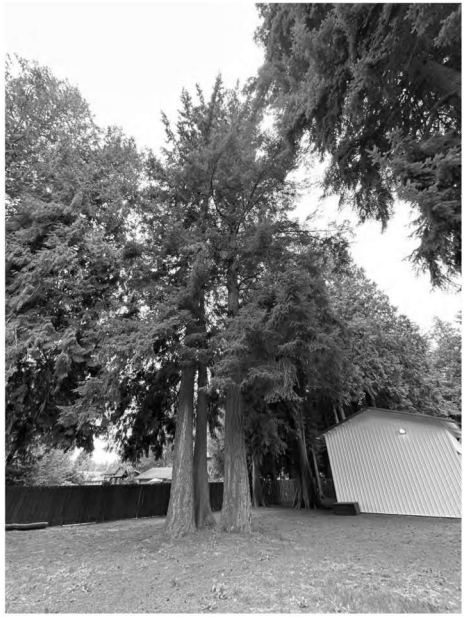
Tree Parts(s) of Concern: Large longer branches

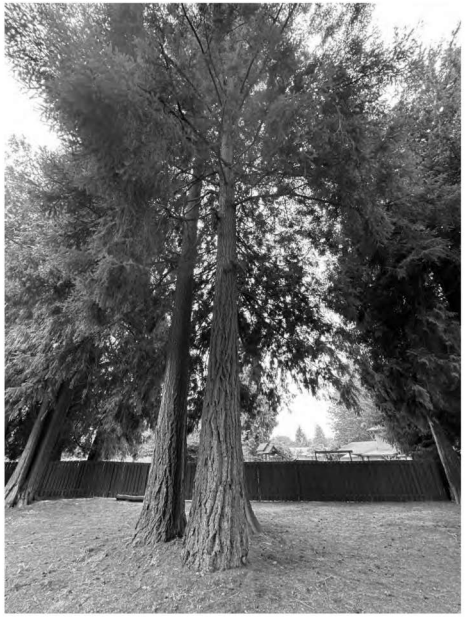
Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes:





Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	47.5 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: 7

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Good (80%)

Risk Assessment Components

Target(s): Roadway to the south, fence line, play area

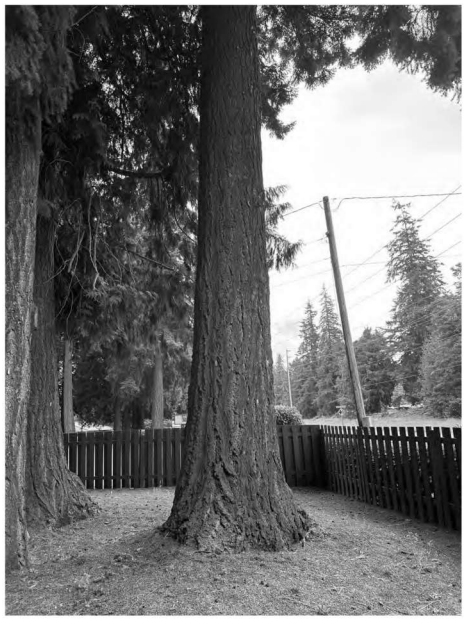
Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This is a very large tree. There appears to be frass from some species of boring insect. The wood dust/frass may also be from the significant sapsucker activity on the trunk. Either way, this activity appears to not be impacting the health or structure of tree at this time.



Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	30 in	**Height**	**Dripline Ave.** *(r)*
Stems:	1	90 ft	18 ft

Tree ID: **8**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Good (80%)

Risk Assessment Components

Target(s): fence line, play area

Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes:

Species: Western red cedar (Thuja plicata)

DBH/QMD:	20.3 in	Height	Dripline Ave. *(r)*
Stems:	1	60 ft	15 ft

Tree ID: **9**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): fence line, play area

Tree Parts(s) of Concern: None

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree exhibits a unique branching structure around the neighboring trees. One branch on the south side of the tree has failed but is still attached and exhibits a stress crack. This branch is unlikely to completely fail and shed from the tree.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	41.7 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID:

10

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: Low

Condition Rating: Good (80%)

Risk Assessment Components

Target(s): Roadway to the south, overhead utility lines, fence line, play area

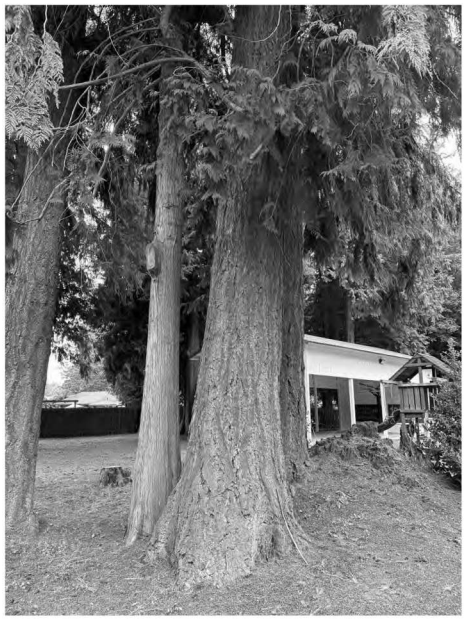
Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Reduce the length of the longest lower branches on the east side of this tree to lower the likelihood of failure and impact to overhead utility lines. Use proper reduction pruning cuts - 10 -15% reduction - pruning back to viable lateral branches.

Notes: This tree contains some larger, longer branches on the east side that could be prone to failing during abnormal weather events and could impact the overhead utilities below.



Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD: 32.7 in
Stems: 1

Height 90 ft

Dripline Ave. *(r)* 18 ft

Tree ID: **11**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (73%)

Risk Assessment Components

Target(s): fence line, play area

Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes:

Species: Western red cedar (Thuja plicata)

DBH/QMD:	32.9 in	Height	Dripline Ave. *(r)*
Stems:	1	25 ft	8 ft

Tree ID: **12**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Very Poor (20%)

Risk Assessment Components

Target(s): fence line, play area

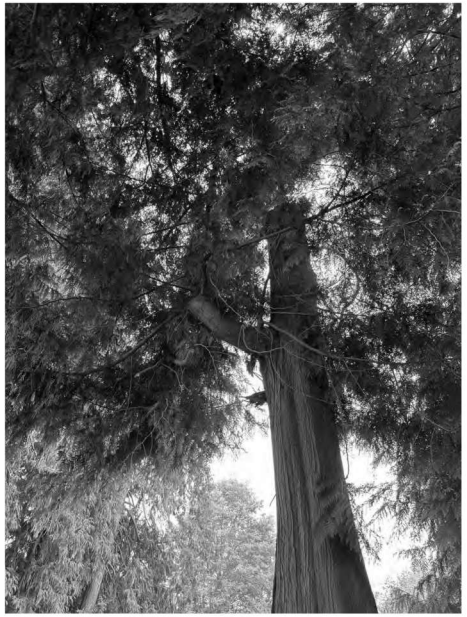
Tree Parts(s) of Concern: Remaining live branch/stem

Health	Structure	Form
Very Poor	Very Poor	Very poor

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Remove remaining live branch/stem.

Notes: This tree was cut and left as a snag. There is a remaining live branch/stem that should be mitigated before it gets too large. The tree is decaying and continues to degrade.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	56 in	Height	Dripline Ave. *(r)*
Stems:	2	90 ft	16 ft

Tree ID: **13**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Risk Assessment Components

Target(s): fence line, play area, covered play structure

Tree Parts(s) of Concern: Codominant stem on the south east side

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Improbable	High	Severe

Recommendations: Monitor.

Notes: This tree has a suppressed codominant stem on the east side. The union appears stable at this time. This is likely two trees that have grown together.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	15.2 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	12 ft

Tree ID: **14**

Risk Assessment Summary

Risk Rating: High

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Covered play structure, play areas

Tree Parts(s) of Concern: Primary stem

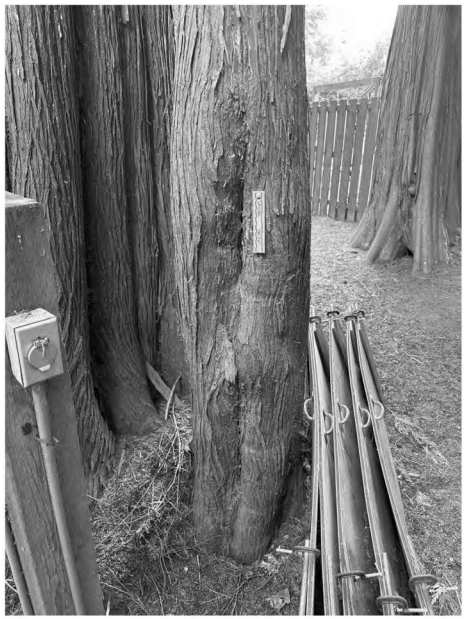
Condition Rating: Poor (46%)

Health	Structure	Form
Fair	Poor	Poor

Likelihood of Failure	Likelihood of Impact	Consequences
Probable	High	Severe

Recommendations: Remove the tree or convert it to a snag.

Notes: The lower portion of this tree's trunk contains old injuries. Sounding indicates significant hollows above and around the injuries. Smaller trees with extensive decay of this nature have a high tendency to contort and fold in on themselves during strong storm and wind events. The tree is relatively well protected by surrounding trees but is still vulnerable to failure.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	17.8 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	12 ft

Tree ID: **15**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): fence line, play area, covered play structure

Tree Parts(s) of Concern: Primary stem

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: Sounding indicates an area of potential hollow at around 6 feet on the southwest side of the trunk. This may be an area of weakness and a potential failure point. The tree is relatively well protected from prevailing winds.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	26.5 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	18 ft

Tree ID: **16**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): fence line, play area, covered play structure

Tree Parts(s) of Concern: None

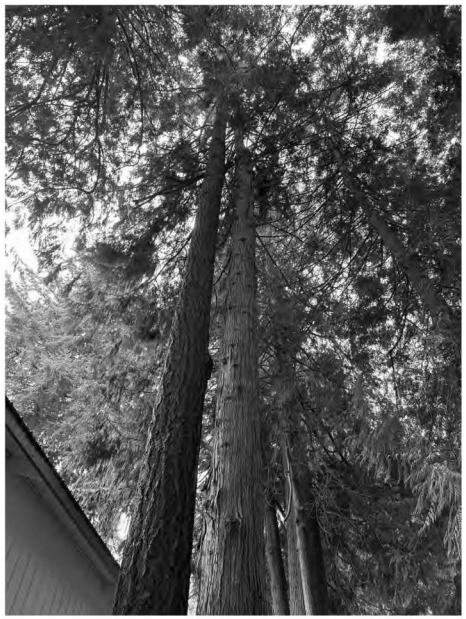
Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree has grown into and fused with the neighboring fir tree to the east. This tree appears to have lost its top at one point. There appears to be a squirrel or bird nest in the top portion of the tree.



Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	27.4 in	Height	Dripline Ave. *(r)*
Stems:	1	100 ft	18 ft

Tree ID: 17

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (73%)

Risk Assessment Components

Target(s): fence line, play area, covered play structure

Tree Parts(s) of Concern: None

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree has grown into and fused with the neighboring cedar tree to the west.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	49.1 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: **18**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (73%)

Risk Assessment Components

Target(s): fence line, play area, covered play structure

Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This is a very large cedar. There are some very long, larger branches that may be prone to failure; however, western red cedar branches are relatively robust, and less likely to fail completely from the tree.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	34.5 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	18 ft

Tree ID:

19

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (66%)

Risk Assessment Components

Target(s): fence line, play area, covered play structure

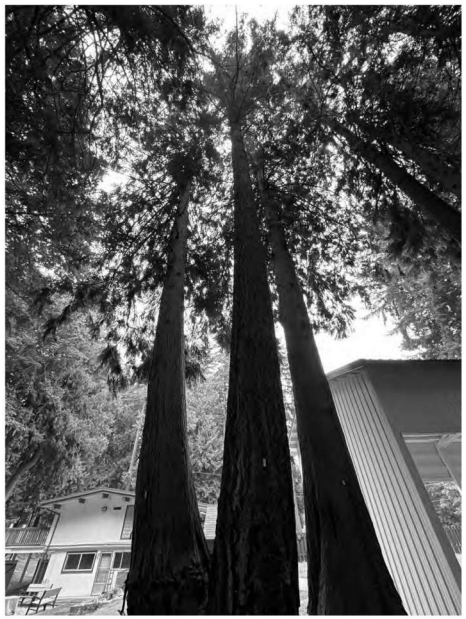
Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree has grown into and fused with the neighboring cedar tree to the north



Species: Western red cedar (Thuja plicata)

DBH/QMD:	33.5 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	18 ft

Tree ID: **20**

Risk Assessment Summary

Risk Rating: High

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: High

Condition Rating: Poor (46%)

Risk Assessment Components

Target(s): Turf recreational area to the north

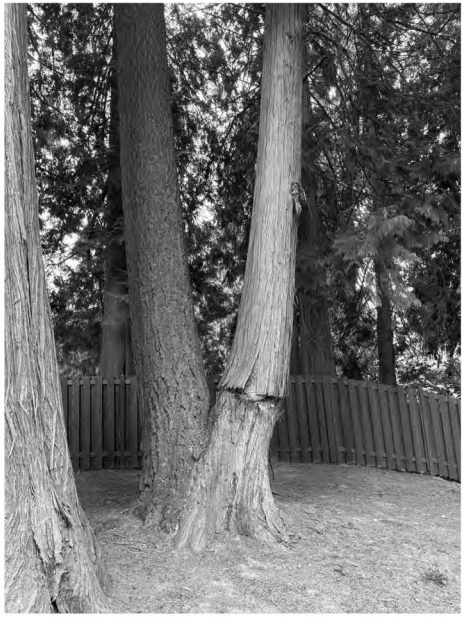
Tree Parts(s) of Concern: Primary stem

Health	Structure	Form
Fair	Poor	Poor

Likelihood of Failure	Likelihood of Impact	Consequences
Probable	High	Severe

Recommendations: Option 1: Remove the tree or convert it to a snag. Option 2: Retain and monitor through a more frequent, annual inspection interval.

Notes: This tree has grown into and has fused with the neighboring fir tree to the south. This tree leans significantly to the north. The tree has a significant defect at around 5 feet from grade. There appears to be a girdling material, like a wire, embedded within the trunk that has caused this significant defect. I have seen Cedar trees fail at these girdled points. Given the significant lean, this tree should be mitigated to prevent future conflicts.



Species: Bigleaf maple (Acer macrophyllum)

DBH/QMD:	23.4 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	24 ft

Tree ID: **21**

Risk Assessment Summary

Risk Rating: High

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: High

Risk Assessment Components

Target(s): Turf and garden areas to the south

Tree Parts(s) of Concern: Primary stem

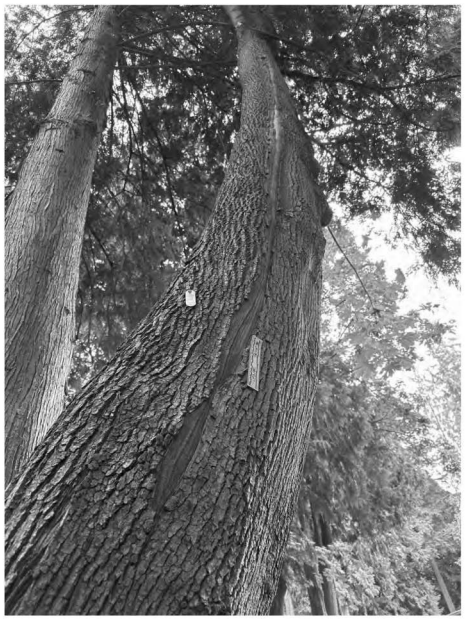
Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Probable	High	Severe

Recommendations: Option 1: Remove the tree or convert it to a snag. Option 2: Retain and monitor through a more frequent, annual inspection interval.

Notes: This tree leans significantly to the south. The tree has self-corrected over time. There appear to be numerous stress cracks on the stem from the significant lean. I observed what appeared to be brittle cinder fungus on the north side at the base. There is a large failed branch hanging in the upper canopy that could be prone to dislodging.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	30.7 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID:

22

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Turf and garden areas to the south

Tree Parts(s) of Concern: None

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes:

Species: Western red cedar (Thuja plicata)

DBH/QMD:	53.4 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: **23**

Risk Assessment Summary

Risk Rating: Moderate

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Moderate

Condition Rating: Fair (66%)

Risk Assessment Components

Target(s): fence line and parking to the north

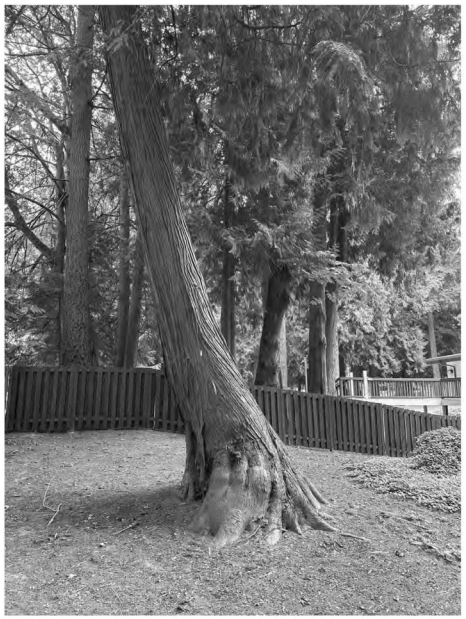
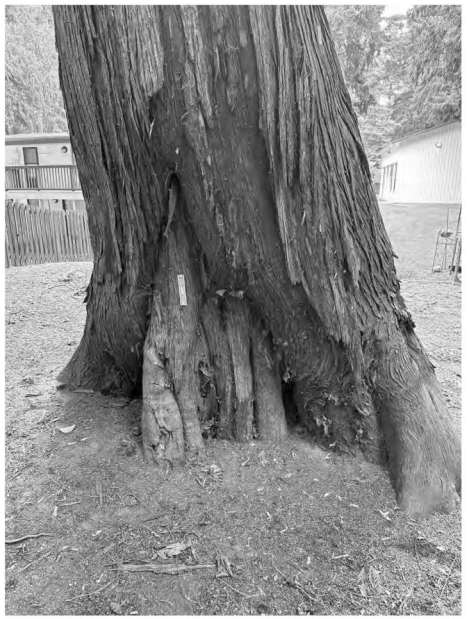
Tree Parts(s) of Concern: Primary stem

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	High	Severe

Recommendations: Retain and monitor through a more frequent, annual inspection interval.

Notes: This is a very large cedar. It appears this tree may have grown from a nurse stump. This tree has a significant lean to the north. The tree has self-corrected significantly over time, creating a significant bow in the trunk. Most of the live branching is on the south side of the tree. The base of the tree contains various areas of decay and hollows. Significant reaction growth has occurred around these hollow areas at the base; it appears this tree has adapted to these defects over time.


Species: Red alder (Alnus rubra)

DBH/QMD:	10.4 in	Height	Dripline Ave. *(r)*
Stems:	1	55 ft	

Tree ID: **24**

Risk Assessment Summary

Risk Rating: Extreme

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): fence line and rec areas to the south, parking to the north, neighbors to the west.

Tree Parts(s) of Concern: Primary stem

Condition Rating: Dead (13%)

Health	Structure	Form
Dead	Very Poor	Very poor

Likelihood of Failure	Likelihood of Impact	Consequences
Imminent	High	Severe

Recommendations: Remove the tree or convert it to a snag.

Notes: Dead tree

Species: Red alder (Alnus rubra)

DBH/QMD:	14 in	Height	Dripline Ave. *(r)*
Stems:	1	60 ft	12 ft

Tree ID: **25**

Risk Assessment Summary

Risk Rating: Moderate

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): parking to the north

Tree Parts(s) of Concern: Primary stem

Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	High	Severe

Recommendations: Remove the tree or convert it to a snag.

Notes: This tree leans significantly to the northeast. The primary fall direction would be into the parking spaces below. A neighboring stem that adjoins the lower trunk has been removed.

Species: Bitter cherry (Prunus emarginata)

DBH/QMD:	9.1 in	Height	Dripline Ave. *(r)*
Stems:	1	50 ft	14 ft

Tree ID: **26**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): parking to the north

Tree Parts(s) of Concern: None

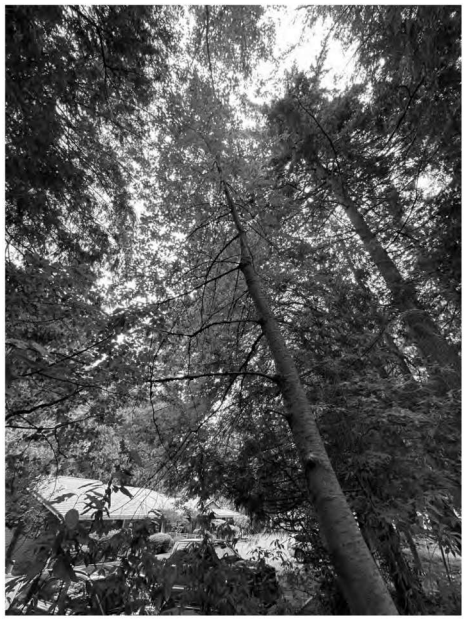
Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree leans significantly to the north. The tree is slightly suppressed, but appears to be stable.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	21 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	18 ft

Tree ID: 27

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the East

Tree Parts(s) of Concern: None

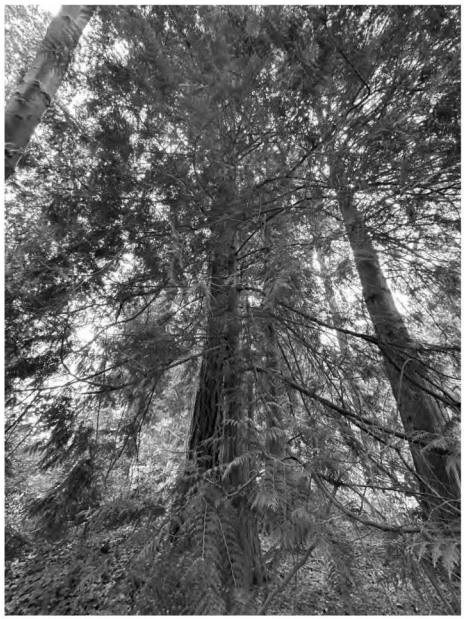
Condition Rating: Fair (73%)

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes:



Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	40 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID:

28

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (66%)

Health	Structure	Form
Fair	Good	Fair

Risk Assessment Components

Target(s): Neighboring property to the west and facilities and roadway to the north

Tree Parts(s) of Concern: Large longer branches

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree exhibits slightly diminished vigor in the canopy and contains some dead branching in the lower canopy. English ivy is present throughout root zone.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	44.7 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID:

29

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (66%)

Risk Assessment Components

Target(s): Neighboring property to the west and facilities and roadway to the north

Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Fair	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree exhibits slightly diminished vigor in the canopy and contains some dead branching in the lower canopy.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	26 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	18 ft

Tree ID: **30**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Risk Assessment Components

Target(s): facilities and road to the north

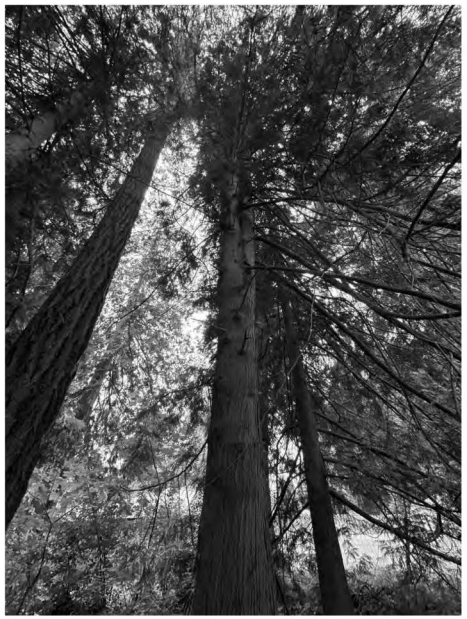
Tree Parts(s) of Concern: Codominant stems with included bark

Health	Structure	Form
Good	Poor	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Significant

Recommendations: Monitor.

Notes: This tree has two codominant stems that emerge at around 12 feet. The codominant stems appear to contain included bark at the union; however, the stems appear to be significantly intertwined with branches, which lessens the likelihood of the stems failing.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	14.2 in	Height	Dripline Ave. *(r)*
Stems:	1	50 ft	14 ft

Tree ID: **31**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): None

Tree Parts(s) of Concern: None

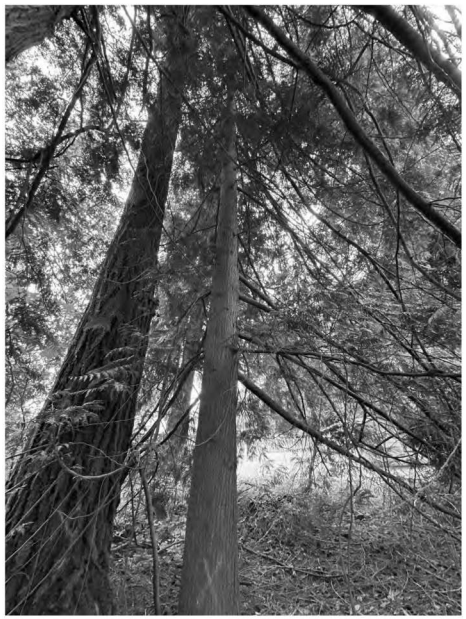
Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes:



Species: Western red cedar (Thuja plicata)

DBH/QMD:	39.5 in	Height	Dripline Ave. *(r)*
Stems:	1	100 ft	25 ft

Tree ID:

32

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking below and facilities to the north

Tree Parts(s) of Concern: None

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree exhibits slightly diminished vigor in the canopy.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	36.3 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	24 ft

Tree ID:

33

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Risk Assessment Components

Target(s): Neighboring property to the west and facilities and roadway to the north

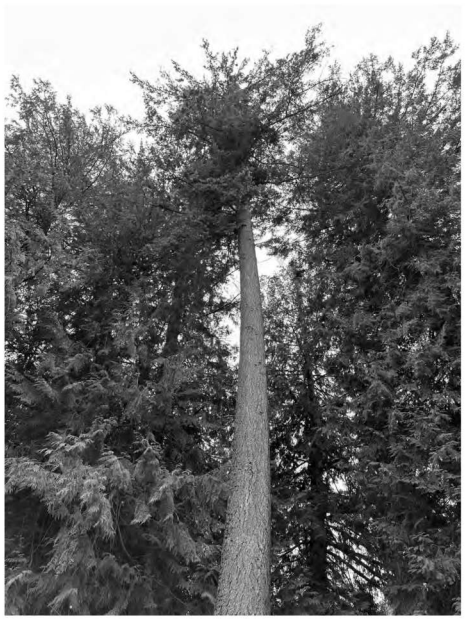
Tree Parts(s) of Concern: Large longer branches

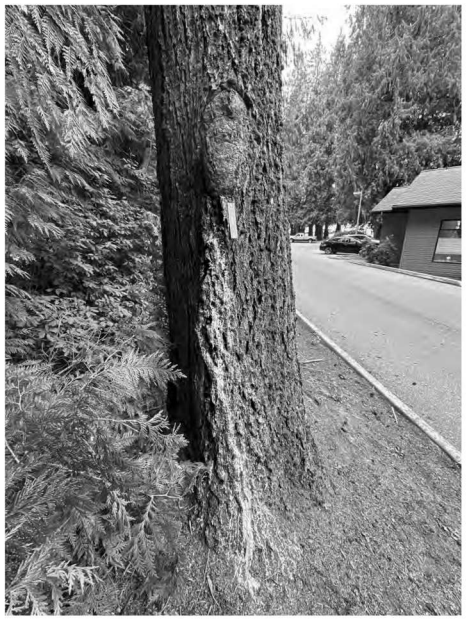
Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree exhibits slightly diminished vigor in the canopy. The tree leans slightly to the northwest and has a corrected lean. There is an old injury on the southeast side of the trunk at around 6 feet. Pitch is oozing from below the occluded injury.





Species: Western red cedar (Thuja plicata)

DBH/QMD:	45 in	Height	Dripline Ave. *(r)*
Stems:	1	120 ft	25 ft

Tree ID: **34**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Good (80%)

Risk Assessment Components

Target(s): Neighboring property to the west and facilities and roadway to the north

Tree Parts(s) of Concern: None

Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This is a very large tree that adjoins the neighboring fir tree. Both trees are growing together and likely reliant on the other.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	45 in	Height	Dripline Ave. *(r)*
Stems:	1	120 ft	25 ft

Tree ID: **35**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Good (80%)

Risk Assessment Components

Target(s): Neighboring property to the west and facilities and roadway to the north

Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This is a very large tree with a stilted root on the west side. The tree appears to straddle the property line. This tree adjoins the neighboring cedar tree. Both trees are growing together and likely reliant on the other.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD: 37.7 in	**Height**	**Dripline Ave.** *(r)*
Stems: 1	110 ft	26 ft

Tree ID:

36

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (66%)

Risk Assessment Components

Target(s): Parking to the north, picnic/eating areas beneath, fence line, main facility to the south

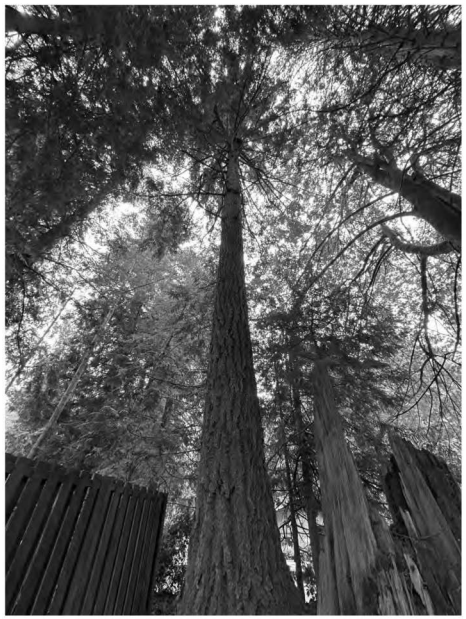
Tree Parts(s) of Concern: Large longer branches

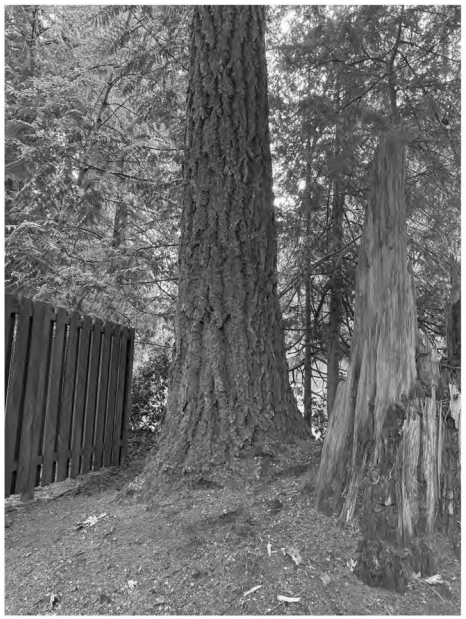
Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree exhibits slightly diminished vigor in the upper canopy and contains some dead branches in the lower canopy.





Species: Western red cedar (Thuja plicata)

DBH/QMD:	10.4 in	Height	Dripline Ave. *(r)*
Stems:	1	50 ft	12 ft

Tree ID: **37**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Picnic/eating/rec areas and fence line below

Tree Parts(s) of Concern: None

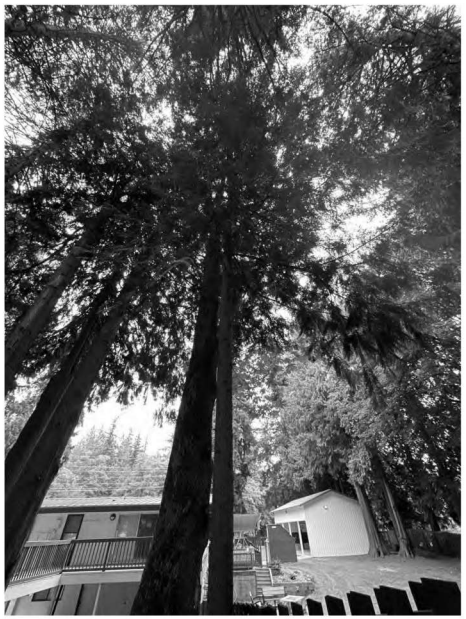
Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree contains stilted roots. The tree appears to have originated from a nurse stump or log.



Species: Bigleaf maple (Acer macrophyllum)

DBH/QMD:	35.2 in	Height	Dripline Ave. *(r)*
Stems:	1	90 ft	27 ft

Tree ID: 38

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Risk Assessment Components

Target(s): Picnic/eating/rec areas and fence line below

Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree has significant surface roots exposed at the soil surface. There are multiple large pruning cuts from large branches on the southmost side. There is some slight oozing of material coming from the lowest pruning injury. Minor deadwood is present in the upper canopy.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	44 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID:

39

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (73%)

Health	Structure	Form
Good	Good	Fair

Risk Assessment Components

Target(s): Picnic/eating areas beneath, fence line, main facility to the south

Tree Parts(s) of Concern: None

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This large cedar appears to be fused with the neighboring cedar to the east at the base. The upper canopy exhibits a slight candelabra formation. Minor deadwood exists throughout the canopy.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	37.8 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: **40**

Risk Assessment Summary

Risk Rating: Moderate

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: Moderate

Condition Rating: Fair (60%)

Risk Assessment Components

Target(s): Picnic/eating areas and deck beneath, fence line, main facility to the south

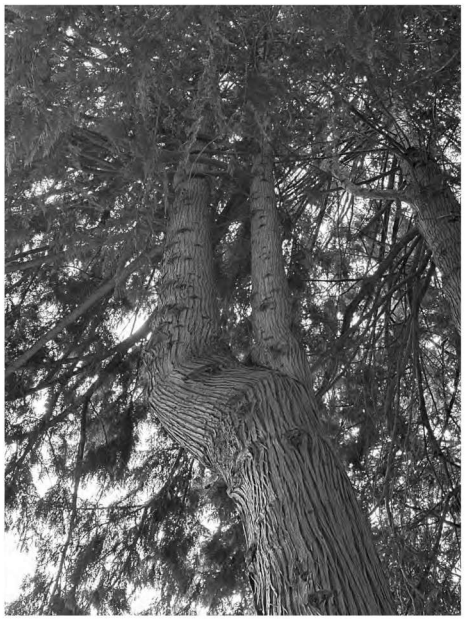
Tree Parts(s) of Concern: Main stem, large bifurcation at 40 feet

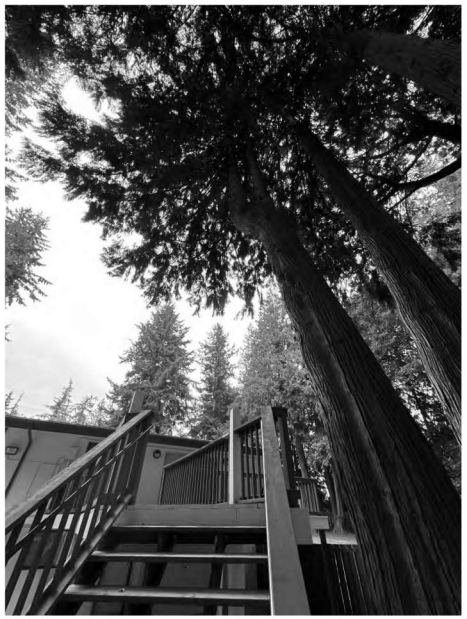
Health	Structure	Form
Good	Poor	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	High	Severe

Recommendations: Option 1: Remove the tree or convert it to a snag. Option 2: Retain and monitor through a more frequent, annual inspection interval.

Notes: This large cedar appears to be fused with the neighboring cedar to the west at the base. There is a bifurcation that occurs at around 40 feet, which presents a significant defect of concern. The bifurcation occurred with two codominant stems. The southmost stem has assumed the terminal role and has grown quite large placing a lot of weight outside of the center of gravity. This union may be unstable over time or during abnormal weather events and presents a Moderate risk.





Species: Western red cedar (Thuja plicata)

DBH/QMD:	38.6 in	Height	Dripline Ave. *(r)*
Stems:	1	70 ft	20 ft

Tree ID: **41**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Poor (46%)

Health	Structure	Form
Fair	Poor	Poor

Risk Assessment Components

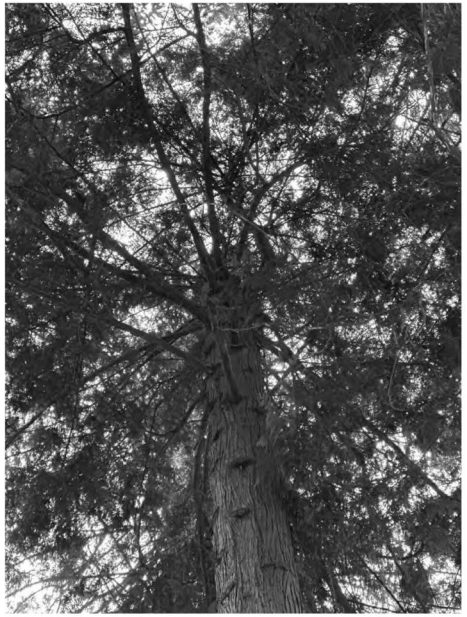
Target(s): Picnic/eating areas and deck beneath, fence line, main facility to the south

Tree Parts(s) of Concern: Primary stem

Likelihood of Failure	Likelihood of Impact	Consequences
Improbable	High	Severe

Recommendations: Monitor.

Notes: This large cedar appears to have lost its top at one time. The tree sounds hollow when struck with a mallet at the base. The tree is relatively well protected in the center of the grove and appears to be relatively stable. The tree should be monitored to ensure the tree does not degrade to an unacceptable point.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	47.8 in	Height	Dripline Ave. *(r)*
Stems:	1	120 ft	25 ft

Tree ID:

42

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Risk Assessment Components

Target(s): Picnic/eating areas beneath, fence line, main facility to the south

Tree Parts(s) of Concern: Primary stem lower portion

Likelihood of Failure	Likelihood of Impact	Consequences
Improbable	High	Severe

Recommendations: Monitor.

Notes: This large cedar exhibits slightly diminished vigor in the upper canopy. The lower portion of the stem, up to roughly 12 feet, bulges and appears to be swollen, which is likely indicative of internal decay or adaptive stress from wind loading. The tree leans slightly to the east and bows upwards in a self-corrective manner.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	50.5 in	Height	Dripline Ave. *(r)*
Stems:	2	110 ft	25 ft

Tree ID:

43

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Risk Assessment Components

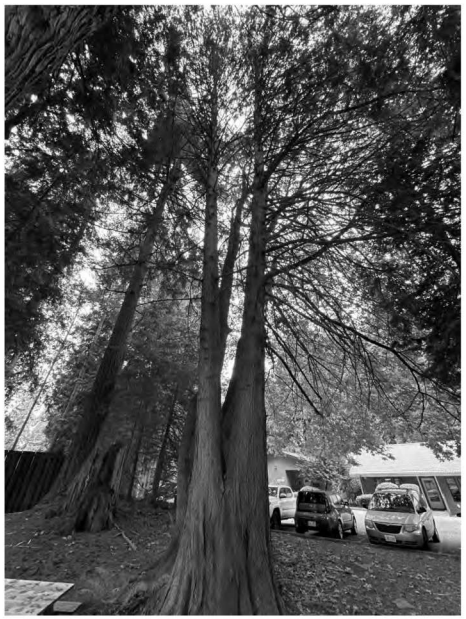
Target(s): Parking to the north, picnic/eating areas beneath, fence line, main facility to the south

Tree Parts(s) of Concern: Codominant stems

Likelihood of Failure	Likelihood of Impact	Consequences
Improbable	High	Severe

Recommendations: Monitor.

Notes: This large tree has two codominant stems that bifurcate at around 7 feet from grade. This codominance may have started as two individual trees. The union of the codominant stems appears to be stable and has little to no included bark that is observable. Below the union are slight elephant ear formations on either side. Deadwood is present in the upper canopy, and the vigor is slightly diminished.



Species: Bigleaf maple (Acer macrophyllum)

DBH/QMD:	47.2 in	**Height**	**Dripline Ave.** *(r)*
Stems:	2	100 ft	34 ft

Tree ID:

44

Risk Assessment Summary

Risk Rating: Moderate

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Moderate

Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Risk Assessment Components

Target(s): Parking to the north, picnic/eating areas beneath

Tree Parts(s) of Concern: Codominant stems, large longer branches

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	High	Severe

Recommendations: Retain and monitor through a more frequent, annual inspection interval.

Notes: This large tree has two codominant stems that bifurcate at around 4 feet from grade. The union of the codominant stems appears to be stable and has little to know included bark that is observable. Below the union are slight elephant ear formations on either side. Deadwood is present in the upper canopies, and the vigor is slightly diminished. There is a hollow stilted area at the base of this tree that does not appear to be compromising its structure.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	12.2 in	Height	Dripline Ave. *(r)*
Stems:	1	40 ft	12 ft

Tree ID:

45

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north, picnic/eating areas beneath

Tree Parts(s) of Concern: None

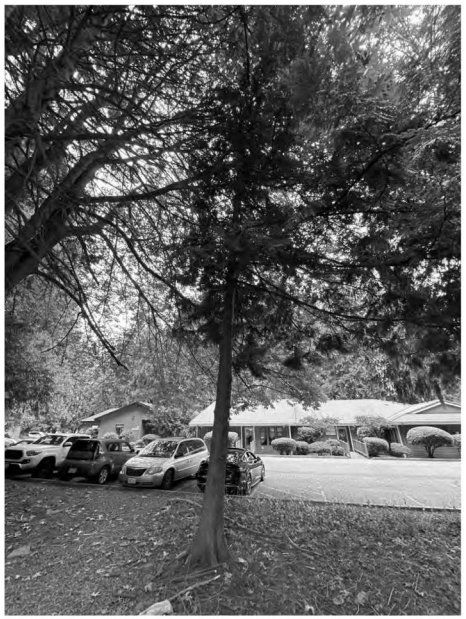
Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree is slightly suppressed by neighboring trees. Damage has occurred to buttress roots on the west side of the tree.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	7.8 in	Height	Dripline Ave. *(r)*
Stems:	1	35 ft	12 ft

Tree ID: **46**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north

Tree Parts(s) of Concern: None

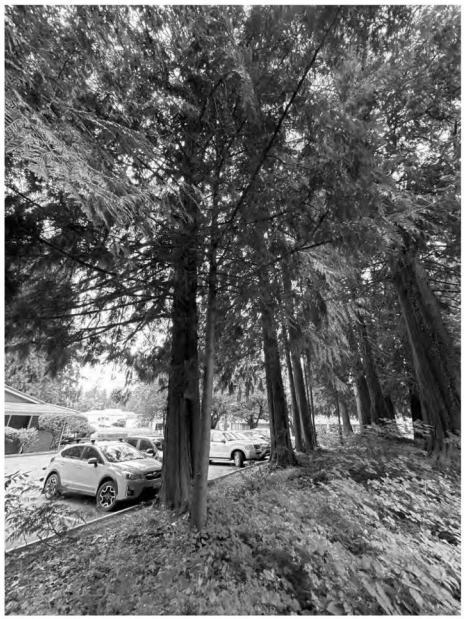
Condition Rating: Fair (73%)

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree is suppressed by neighboring trees.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	38.5 in	Height	Dripline Ave. *(r)*
Stems:	1	80 ft	16 ft

Tree ID: **47**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north

Tree Parts(s) of Concern: None

Condition Rating: Fair (66%)

Health	Structure	Form
Fair	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes:

Species: Western red cedar (Thuja plicata)

DBH/QMD:	23.4 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	16 ft

Tree ID: **48**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north

Tree Parts(s) of Concern: None

Condition Rating: Fair (66%)

Health	Structure	Form
Fair	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree contains small codominant tops in the very uppermost portion of the canopy.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	25.5 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	16 ft

Tree ID:

49

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north

Tree Parts(s) of Concern: None

Condition Rating: Fair (66%)

Health	Structure	Form
Fair	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	12.6 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	16 ft

Tree ID: **50**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north

Tree Parts(s) of Concern: None

Condition Rating: Fair (66%)

Health	Structure	Form
Fair	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	24.4 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	16 ft

Tree ID:

51

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north

Tree Parts(s) of Concern: None

Condition Rating: Fair (66%)

Health	Structure	Form
Fair	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	21.5 in	Height	Dripline Ave. *(r)*
Stems:	1	75 ft	16 ft

Tree ID:

52

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north

Tree Parts(s) of Concern: None

Condition Rating: Fair (66%)

Health	Structure	Form
Fair	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	60 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: **53**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Risk Assessment Components

Target(s): Parking to the north, path to the south and parking to the west

Tree Parts(s) of Concern: Codominant upper stems.

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Conduct a Level 3 Advanced Assessment - aerial inspection of codominant union.

Notes: This large cedar has two codominant stems in the very upper portion of the canopy. It is hard to tell what the condition of the union is. English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	38.6 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: **54**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (53%)

Health	Structure	Form
Fair	Poor	Fair

Risk Assessment Components

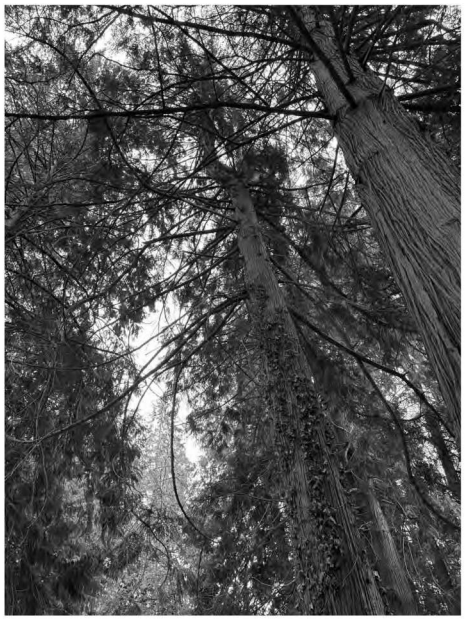
Target(s): Path to the south

Tree Parts(s) of Concern: Codominant upper stems.

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Conduct a Level 3 Advanced Assessment - aerial inspection of codominant union.

Notes: This large cedar has multiple codominant stems in the very upper portion of the canopy. It is hard to tell what the condition of the unions is. English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	52.7 in	Height	Dripline Ave. *(r)*
Stems:	1	120 ft	25 ft

Tree ID:

55

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north, path and road to the south

Tree Parts(s) of Concern: None

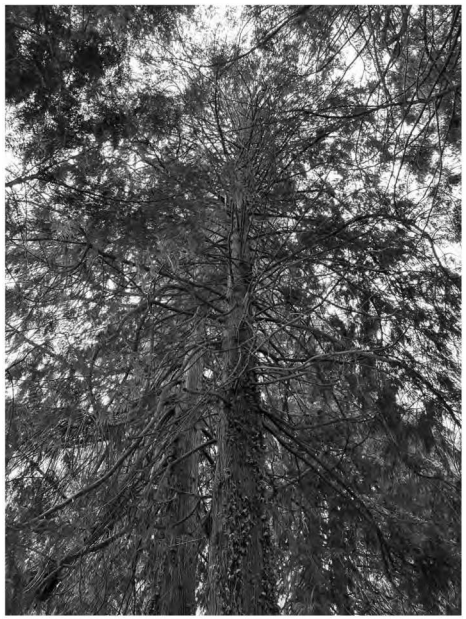
Condition Rating: Fair (73%)

Health	Structure	Form
Fair	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	47.8 in	Height	Dripline Ave. *(r)*
Stems:	1	120 ft	25 ft

Tree ID: **56**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking to the north, path and road to the south

Tree Parts(s) of Concern: None

Condition Rating: Fair (73%)

Health	Structure	Form
Fair	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree exhibits a history of branch failure on north side. English ivy is growing on the stem of this tree and throughout its root zone.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	49.5 in	Height	Dripline Ave. *(r)*
Stems:	1	140 ft	30 ft

Tree ID: **57**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Good (80%)

Risk Assessment Components

Target(s): Parking to the north, path and road to the south

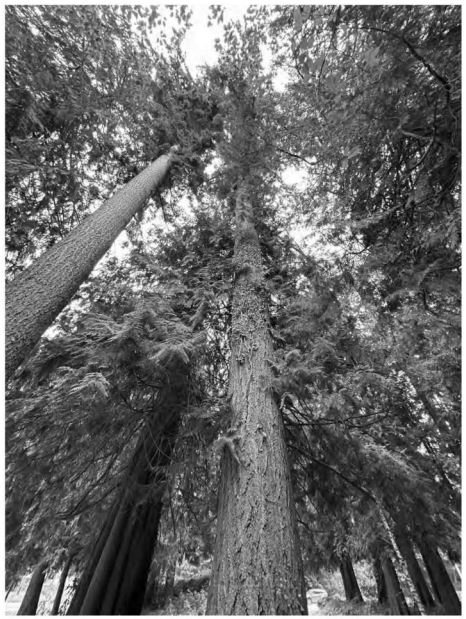
Tree Parts(s) of Concern: Large long branches

Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	37.5 in	Height	Dripline Ave. *(r)*
Stems:	2	90 ft	25 ft

Tree ID: **58**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (66%)

Risk Assessment Components

Target(s): Path below

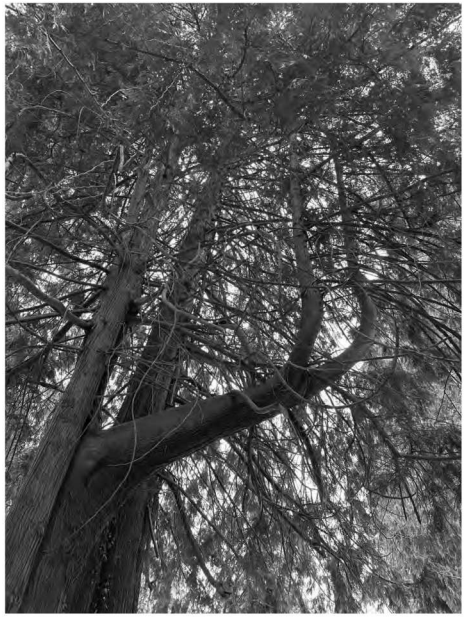
Tree Parts(s) of Concern: Largest southmost branch

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Improbable	High	Severe

Recommendations: Monitor.

Notes: This tree appears to be two trees that have grown together and intertwined over the years. There is a very large lateral branch on the south side that contains two upright stems toward the end. There is significant reaction growth to support this branch at the main stem; the attachment seems very robust. English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	65.8 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID:

59

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): path and road to the south

Tree Parts(s) of Concern: None

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	38.9 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: 60

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Good (80%)

Risk Assessment Components

Target(s): Parking to the north, path and road to the south

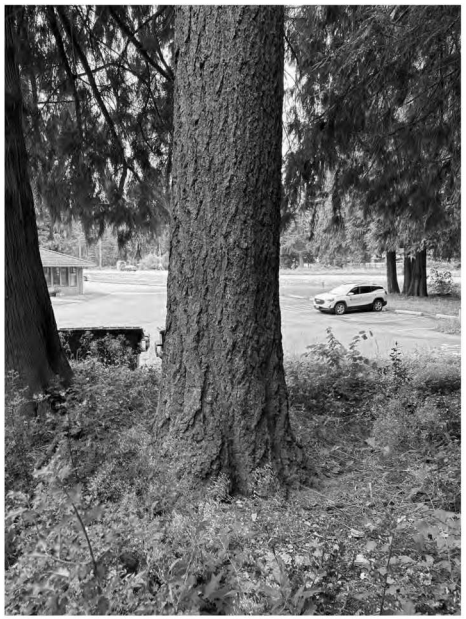
Tree Parts(s) of Concern: Large long branches

Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	43.6 in	Height	Dripline Ave. *(r)*
Stems:	1	100 ft	26 ft

Tree ID: **61**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Road and parking to the East

Tree Parts(s) of Concern: Large long branches on east side

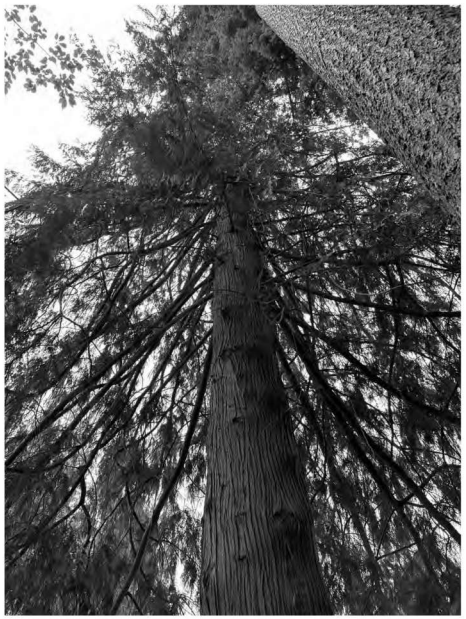
Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree contains some very long branches on the east side that may be prone to failing during abnormal weather events. English ivy is growing on the stem of this tree and throughout its root zone.



Species: Paperbark birch (Betula papyrifera)

DBH/QMD:	8.7 in	Height	Dripline Ave. *(r)*
Stems:	1	60 ft	

Tree ID: 62

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Path to the north and road to the east

Tree Parts(s) of Concern: None

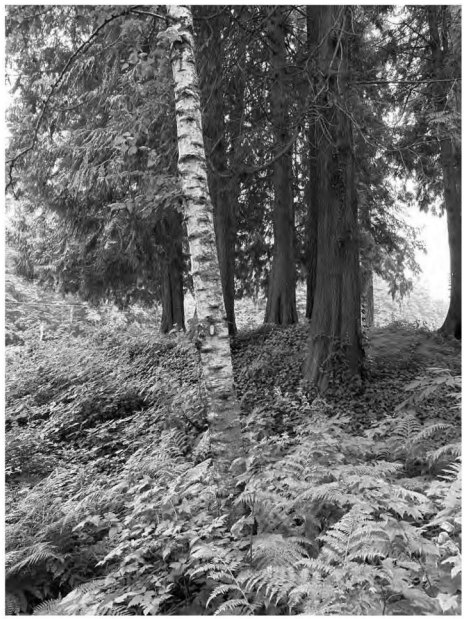
Condition Rating: Fair (73%)

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing throughout this tree's root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	50.2 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: **63**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Path to the north and parking to the southwest

Tree Parts(s) of Concern: None

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	37 in	Height	Dripline Ave. *(r)*
Stems:	1	125 ft	25 ft

Tree ID: 64

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: TBD

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Risk Assessment Components

Target(s): Path to the north and parking below and to the south

Tree Parts(s) of Concern: Large long branches on north side. Upper stem above kink.

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Conduct a Level 3 Advanced Assessment - aerial inspection of the kink-like defect.

Notes: This tree has been limed up in the past. There are some very long branches on the north side of the tree that may be prone to failing during abnormal weather events. The trunk exhibits a kink-like defect at about 80 feet that may be from an old topping cut. The defect appears stable at this time; however, I have observed similar defects fail during high winds.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	45.5 in	Height	Dripline Ave. *(r)*
Stems:	1	120 ft	25 ft

Tree ID: **65**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: Low

Risk Assessment Components

Target(s): Parking and path below

Tree Parts(s) of Concern: Large long branches on west side

Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Reduce the length of the longest lower branches on the west side of this tree to lower the likelihood of failure and impact to targets below. Use proper reduction pruning cuts - 10 -15% reduction - pruning back to viable lateral branches.

Notes: There are some large longer branches on the west side of this tree that may be prone to failing during abnormal weather events.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	27.6 in	Height	Dripline Ave. *(r)*
Stems:	1	100 ft	25 ft

Tree ID: 66

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: Low

Risk Assessment Components

Target(s): Parking and path below

Tree Parts(s) of Concern: Large long branches on west side

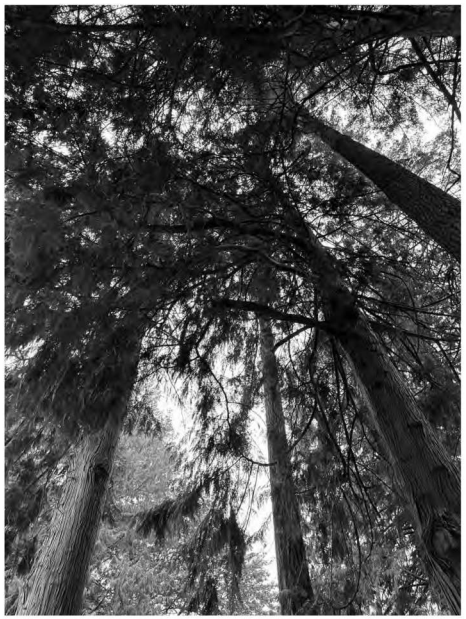
Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Reduce the length of the longest lower branches on the west side of this tree to lower the likelihood of failure and impact to targets below. Use proper reduction pruning cuts - 10 -15% reduction - pruning back to viable lateral branches.

Notes: There are some large longer branches on the west side of this tree that may be prone to failing during abnormal weather events.



Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	26.8 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	20 ft

Tree ID: 67

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking and path below

Tree Parts(s) of Concern: None

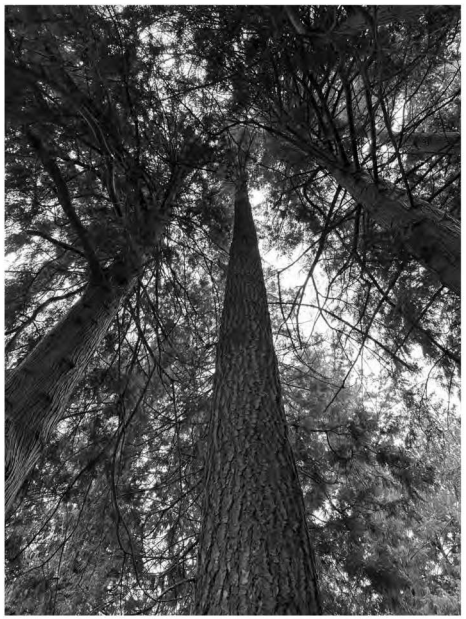
Condition Rating: Fair (73%)

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	37 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: 68

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: TBD

Risk Assessment Components

Target(s): Parking below to the west

Tree Parts(s) of Concern: Codominant upper stems.

Condition Rating: Fair (53%)

Health	Structure	Form
Fair	Poor	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Conduct a Level 3 Advanced Assessment - aerial inspection of codominant union.

Notes: This large cedar has two codominant stems in the upper portion of the canopy. It is hard to tell what the condition of the unions is. English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	28.1 in	Height	Dripline Ave. *(r)*
Stems:	1	60 ft	25 ft

Tree ID: **69**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: Low

Risk Assessment Components

Target(s): Parking and path below

Tree Parts(s) of Concern: Large long branches on west side

Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Reduce the length of the longest lower branches on the west side of this tree to lower the likelihood of failure and impact to targets below. Use proper reduction pruning cuts - 10 -15% reduction - pruning back to viable lateral branches.

Notes: There are some large longer branches on the west side of this tree that may be prone to failing during abnormal weather events.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD: 33.5 in	**Height**	**Dripline Ave.** *(r)*
Stems: 1	120 ft	20 ft

Tree ID:

70

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking below

Tree Parts(s) of Concern: None

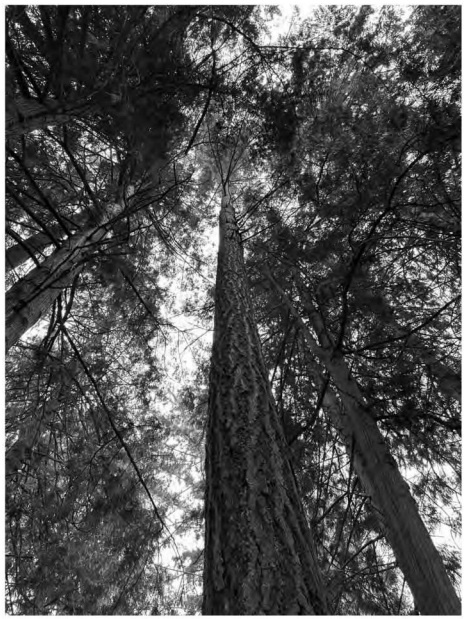
Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	16.8 in	Height	Dripline Ave. *(r)*
Stems:	1	70 ft	12 ft

Tree ID: 71

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: Low

Risk Assessment Components

Target(s): Parking to the west, path to the north

Tree Parts(s) of Concern: Primary stem

Condition Rating: Poor (46%)

Health	Structure	Form
Poor	Poor	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Probable	Low	Severe

Recommendations: Option 1: Monitor. Option 2: Remove the tree or convert it to a snag.

Notes: Sounding indicates significant hollows throughout the lower stem. Similar trees with extensive decay of this nature can be prone to contorting and folding in on themselves during storm and wind events. The tree is relatively well protected by surrounding trees but is still vulnerable to failure. Targets are not necessarily within striking distance.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	37 in	Height	Dripline Ave. *(r)*
Stems:	1	120 ft	25 ft

Tree ID: 72

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Path to the north and parking to the east and west

Tree Parts(s) of Concern: None

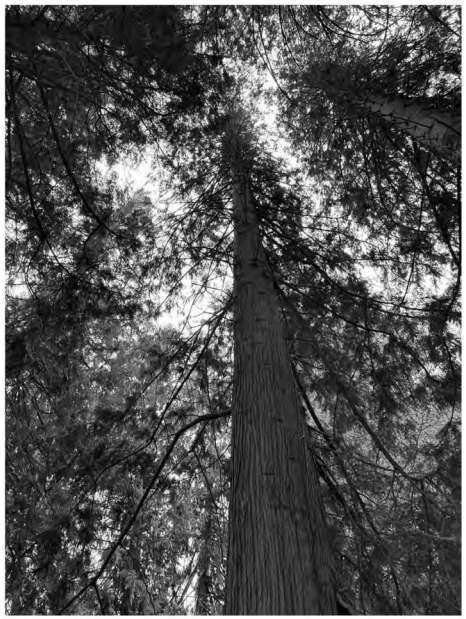
Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	36.2 in	Height	Dripline Ave. *(r)*
Stems:	1	100 ft	25 ft

Tree ID:

73

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Path to the north and parking to the east and west

Tree Parts(s) of Concern: None

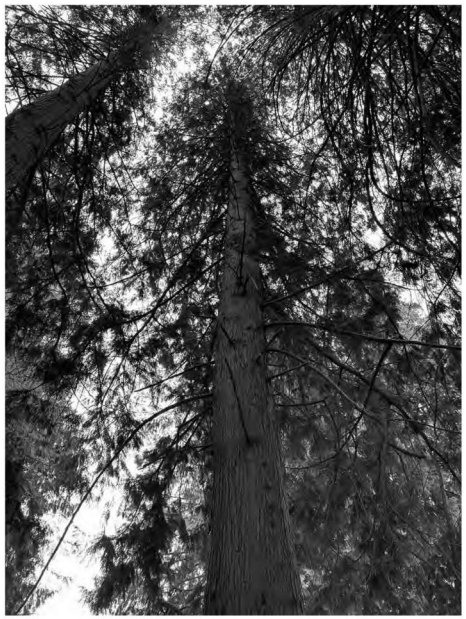
Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	40.2 in	Height	Dripline Ave. *(r)*
Stems:	1	100 ft	25 ft

Tree ID: **74**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Path to the north and parking to the east and west

Tree Parts(s) of Concern: None

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: English ivy is growing on the stem of this tree and throughout its root zone.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD: 44.1 in
Stems: 1

Height 140 ft

Dripline Ave. *(r)* 28 ft

Tree ID:

75

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking below, road to the East

Tree Parts(s) of Concern: Large longer branches

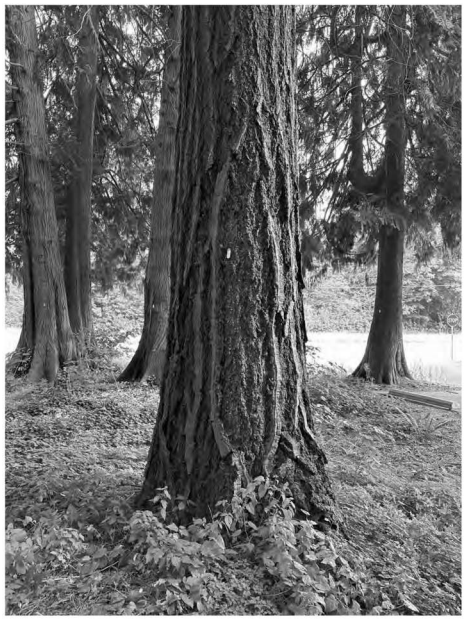
Condition Rating: Fair (66%)

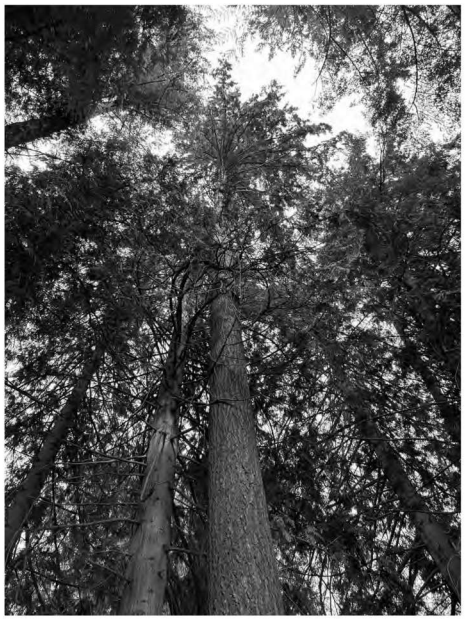
Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: This tree exhibits slightly diminished vigor in the canopy. Some dead branches are present in the lower canopy. A previous failed western hemlock was growing within 10 feet of this tree to the west.





Species: Western red cedar (Thuja plicata)

DBH/QMD:	41.6 in	Height	Dripline Ave. *(r)*
Stems:	1	90 ft	25 ft

Tree ID: **76**

Risk Assessment Summary

Risk Rating: High

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: High

Condition Rating: Poor (46%)

Risk Assessment Components

Target(s): Road to the south, entry road, parking below

Tree Parts(s) of Concern: Primary stem, lower portion

Health	Structure	Form
Fair	Very Poor	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Probable	High	Severe

Recommendations: Option 1: Remove the tree or convert it to a snag. Option 2: Significantly reduce the height of the tree and retain it as a living snag.

Notes: This large cedar leans slightly to the west. The base of this tree contains advanced decay and an open cavity. The cavity is approximately 8 feet tall and around 3 feet wide. Sounding indicates hallows and decay. English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	66 in	Height	Dripline Ave. *(r)*
Stems:	2	90 ft	25 ft

Tree ID: 77

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Entry/exit road

Tree Parts(s) of Concern: None

Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree has two codominant stems. This may be two trees that have grown together over time. The stems appear stable and strongly attached at their union. English ivy is growing on the stem of this tree and throughout its root zone.

Species: Western red cedar (Thuja plicata)

DBH/QMD:	20.2 in	Height	Dripline Ave. *(r)*
Stems:	1	50 ft	14 ft

Tree ID:

78

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Entry/exit road

Tree Parts(s) of Concern: None

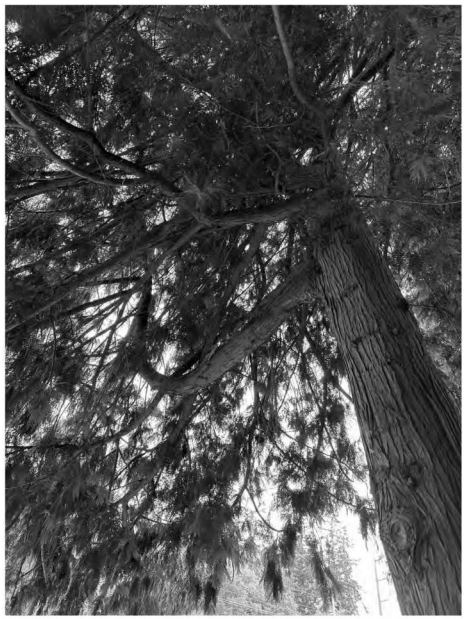
Condition Rating: Fair (66%)

Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences

Recommendations: Monitor.

Notes: This tree has some longer larger branches on the south side, but they appear to be relatively stable and unlikely to contact targets.



Species: Western red cedar (Thuja plicata)

DBH/QMD:	34.6 in	Height	Dripline Ave. *(r)*
Stems:	1	70 ft	24 ft

Tree ID: **79**

Risk Assessment Summary

Risk Rating: Moderate

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Moderate. Option 2: Low

Condition Rating: Fair (53%)

Risk Assessment Components

Target(s): Entry/exit road

Tree Parts(s) of Concern: Candelabra type branching and codominant stem behavior

Health	Structure	Form
Good	Poor	Poor

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	High	Severe

Recommendations: Option 1: Monitor. Option 2: Reduce the height of candelabra branches; use proper reduction pruning cuts - 10 -15% reduction - pruning back to viable lateral branches.

Notes: This tree lost its top at one point and has since compensated with advantageous growth from lateral branches. This reaction growth has resulted in characteristic candelabra branch formations seen typically with old-growth cedar trees. This growth appears to be stable at this time, though it should be monitored. An option to reduce these candelabra branches is offered to further lower the likelihood of failure if desired.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	39.5 in	Height	Dripline Ave. *(r)*
Stems:	1	140 ft	28 ft

Tree ID: **80**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Parking below, facilities to the west

Tree Parts(s) of Concern: Large longer branches

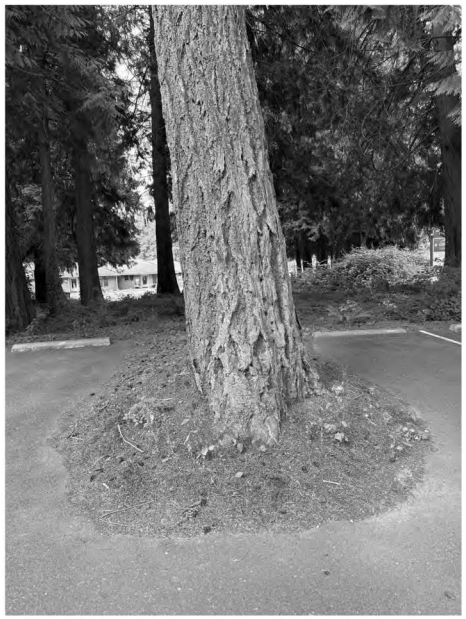
Condition Rating: Fair (66%)

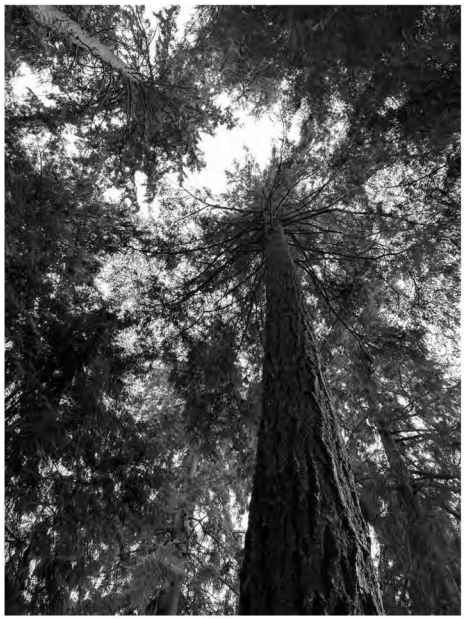
Health	Structure	Form
Good	Fair	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes: Dead branched are present within the lower canopy of this tree. A previous failed hemlock was growing within 10 feet of this tree to the east.





Species: Western red cedar (Thuja plicata)

DBH/QMD:	35.6 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	25 ft

Tree ID: **81**

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Option 1: Low. Option 2: TBD

Condition Rating: Fair (60%)

Health	Structure	Form
Fair	Fair	Fair

Risk Assessment Components

Target(s): Option for advanced decay assessment to evaluate ant colony.

Tree Parts(s) of Concern: Primary stem, lower portion

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Option 1: Monitor. Option 2: Conduct a Level 3 Advanced Assessment - Tomography and diagnostics to evaluate ant colony extent if present.

Notes: The lower portion of this tree's stem appears to be weathered and inconsistent in its shape. There are locations where there are voids and hollows at the base and deep fluting. Significant ant activity was also observed, especially on the west portion of the trunk. There may be significant ant activity which could be compromising the internal wood structure, though sounding indicates mostly solid wood.

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	36.6 in	Height	Dripline Ave. *(r)*
Stems:	1	110 ft	26 ft

Tree ID:

82

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Condition Rating: Fair (73%)

Risk Assessment Components

Target(s): Entry/exit road

Tree Parts(s) of Concern: Large longer branches

Health	Structure	Form
Good	Good	Fair

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes:

Species: Douglas fir (Pseudotsuga menziesii)

DBH/QMD:	45.7 in	Height	Dripline Ave. *(r)*
Stems:	1	150 ft	28 ft

Tree ID:

83

Risk Assessment Summary

Risk Rating: Low

Assessment Time Frame: 3 years

Residual Risk *(see recs blow)*: Low

Risk Assessment Components

Target(s): Entry/exit road, highway

Tree Parts(s) of Concern: Large longer branches

Condition Rating: Good (80%)

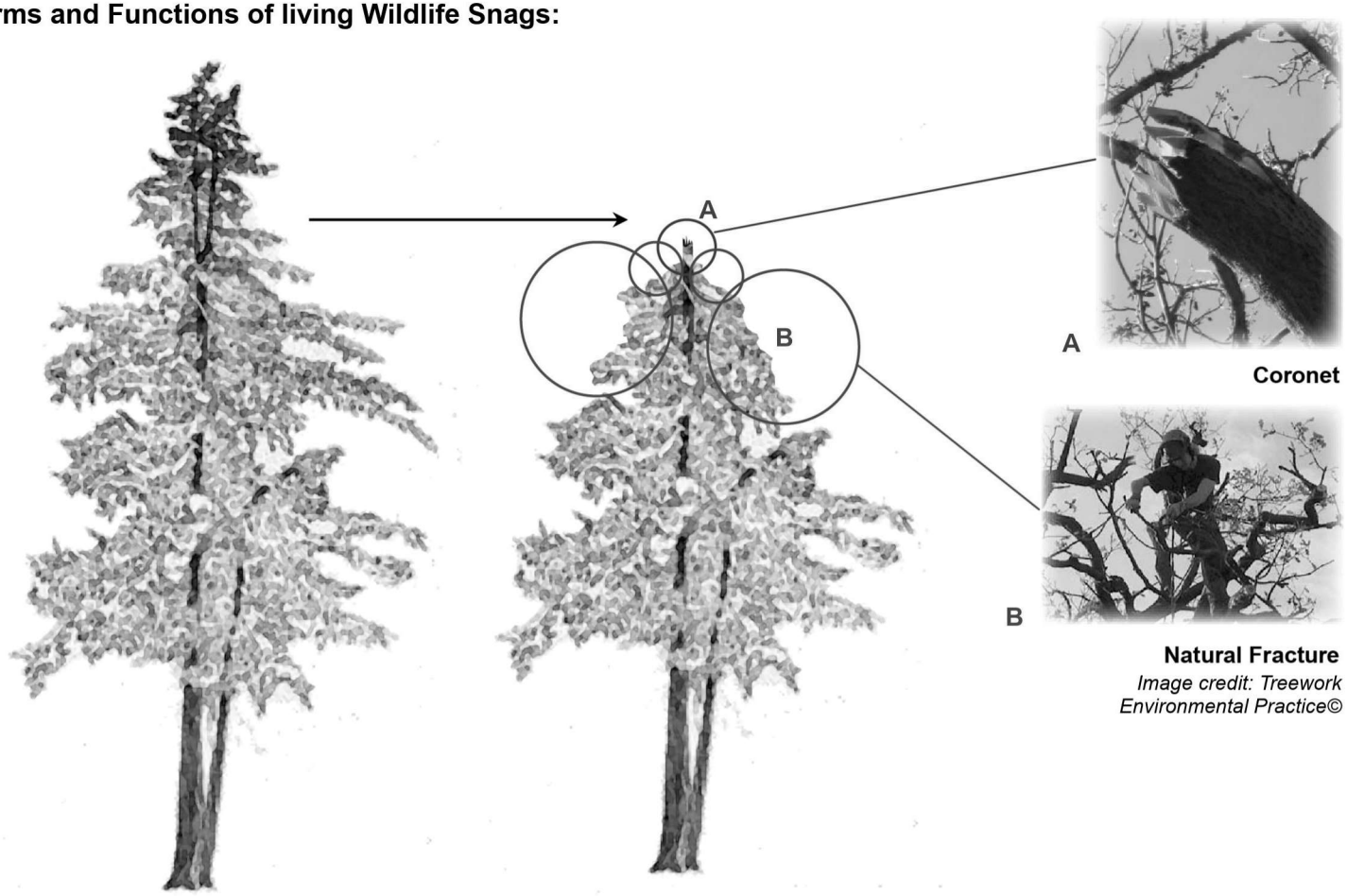
Health	Structure	Form
Good	Good	Good

Likelihood of Failure	Likelihood of Impact	Consequences
Possible	Medium	Severe

Recommendations: Monitor.

Notes:

Forms and Functions of living Wildlife Snags:



A. Coronet Cut

The aim of this technique is to create a cut that will quickly develop the characteristics of a naturally occurring fracture. Jagged, naturalized fracture shapes encourage the development of wood decay and attract insect activity. As such, coronet cuts can function as feeding sites for certain bird and bat species. The rough surface of the coronet can also function as the foundation for the construction of nests. As wood below the coronet softens over time cavities and sloughing bark may develop, offering places for birds and bats to nest and roost within and between.

B. Fracture Technique

The aim of this technique is to tear and rip branch ends to create a condition in the live branches that mimics a natural failure that might occur as a result of high winds or snow loading. This method can produce a response in the tree that maintains a live crown by stimulating re-growth of the live branches. Maintaining a live crown will allow the tree to sustain its structural integrity for a longer period. Re-growth may require further maintenance over time. The retention of a live crown functions as essential cover animals using the tree for nesting (cavity or external) and roosting.

Optimal Methods for finished cut

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Terms for Commercial Consulting Services

The F.A. Bartlett Tree Expert Company ("**Bartlett Tree Experts**") provides tree-care and related consulting services to commercial and government clients. The agreed upon "Work" has been expressed in a separate Client Agreement between Bartlett Tree Experts and the Client, and is identified within the portion of the Client Agreement communicating the Scope of the Work, the Goals, the Specifications, the Schedule of the Work, and the Payment Terms. These terms combine with the approved Client Agreement and form the complete agreement between the parties.

Article 1
TREE RISK

1.1 Tree Risk

(a) The Client acknowledges that having trees on one's property involves risk, including the risk that a tree or tree limb might fall. As part of the Work, Bartlett Tree Experts may recognize the risk posed by failure of trees within the Scope of Work and recommend to the Client ways to reduce that risk, but the Client acknowledges that Bartlett Tree Experts cannot detect all defects and other conditions that present the risk of tree failure and cannot predict how all trees will respond to future events and circumstances. Trees can fail unpredictably, even if no defects or other conditions are apparent. Bartlett Tree Experts will not be responsible for damages caused by subsequent failure of a tree, or tree part, within or around the Scope of Work due to defects or other preexisting structural or health conditions.

(b) Unless the Work includes having Bartlett Tree Experts perform a tree risk assessment for designated trees, the Client acknowledges that in performing the Work Bartlett Tree Experts is not required to inspect and report to the Client on risks to, and risks posed by, trees on or near the Client's property.

(c) The Client also acknowledges that because trees are living organisms that change over time, the best protection against the risk associated with having trees on the Client's property is for the Client to arrange to have them inspected by a qualified arborist annually and after each major weather event to identify any defects or other conditions that present the risk of tree failure. Then, once inspected, the Client should review any possible defects or conditions that present the risk of failure and request recommendations for, and implement, remedial actions to mitigate the risks.

Article 2
THE WORK

2.1 Ownership

The Client states that all trees and other vegetation within the Scope of Work are owned by the Client or that the Owner has authorized the Client to include them within the Scope of Work.

2.2 Specified Trees or Work

The specific trees, shrubs, plant materials or work described in the Scope of Work or in the Agreement will be the only trees, shrubs, plant materials, or work included in the scope of the consultative services or Work performed by Bartlett for the Client.

2.3 Insurance

(a) Bartlett Tree Experts states that it is insured for liability resulting from injury to persons or damage to property while performing the Work and that its employees are covered under workers' compensation laws.

(b) The scope of ongoing operations of the Work shall be defined as beginning when the performance on the site begins and ending when the performance on the site concludes.

2.4 Compliance

Bartlett Tree Experts shall perform the Work competently and in compliance with the law and industry standards, including the American National Standards Institute's A-300 Standards for tree care.

2.5 Access Over Roads, Driveways, and Walkways

The Client shall arrange for Bartlett Tree Experts' representatives, vehicles, and equipment to have access during working hours to areas where the Work is to be performed. The Client shall keep roads, driveways, and walkways in those areas clear during working hours for the passage and parking of vehicles and equipment. Unless the Client Agreement states otherwise, Bartlett Tree Experts is not required to keep gates closed for animals or children.

2.6 Personnel

Bartlett Tree Experts will determine and provide the correct Bartlett personnel for completing the Work based scope of the project, the expertise needed, and the geographic location of the work, in order to meet the goals of the Client.

2.7 Accuracy of Information Provided By the Client or By Third Parties Acting on Behalf of the Client

(a) The Client acknowledges that Bartlett Tree Experts cannot be held responsible for the accuracy of or content of information provided by the Client or third parties acting on behalf of the Client, including but not limited to; the legal description of the property, issues of title and/or ownership of the property, software programs, property and property line locations and/or boundaries, or other pieces of information provided which are integral to the final outcome of the consulting Work.

(b) The Client agrees to correct any errors in any such inaccurate information that it or any third party acting on its behalf, provides Bartlett Tree Experts, once the inaccuracy is known, if such information will be necessary for Bartlett Tree Experts to base its final analysis, management plans, written reports, information or recommendations on for the finalization of the Work.

2.8 Information Provided By Reliable Sources

In certain circumstances, Bartlett Tree Experts may need to engage outside reliable sources to provide specialized information, cost estimates, or opinions. Bartlett Tree Experts will make every effort to engage reputable and reliable sources, and will communicate the use of these sources to the Client if such sources are used to help determine an integral part of the Work.

2.9 Tree Locations, Maps, Sketches, and Diagrams

The Client acknowledges that Bartlett Tree Experts may use several means and methods to provide tree locations on maps, sketches, or drawings, and that the use of tree locations on maps, sketches, diagrams, and/or in pictures are intended to aid the Client in understanding the deliverables provided, and may not be to scale and should not be considered precise locations, engineering surveys, or architectural drawings.

2.10 Global Positioning Systems

The Client acknowledges that all global positioning system (GPS) devices used to locate trees, shrubs, and plant material, have some accuracy limitations, and regardless of the methodologies or software programs used to enhance the accuracy of the locations, there will always be some level of meter or sub meter locational discrepancies within any deliverable product.

2.11 Advice, Opinions, Conclusions, and Recommendations

(a) The Client Acknowledges that all advice, opinions, conclusions, and recommendations provided represent the professional objective opinion(s) of Bartlett Tree Experts; which are in no way predetermined, or biased toward any particular outcome.

(b) The Client acknowledges that all advice, opinions, conclusions, and recommendations provided verbally or in written format such as email, management plans, or reports will be based on the present status of the tree(s), property(s), environmental conditions, and industry standards. Any advice, opinions, conclusions, and recommendations provided do not take into account any future changes in environmental conditions or changes to current industry standards which are unknown and unforeseen at the time the Work is performed.

2.12 Tree Risk Assessments and Inventories

(a) If the Client Agreement is specifically for Bartlett Tree Experts to provide a Level 1 Limited Visual, Level 2 Basic, or Level 3 Advanced assessment of tree risk for any tree or group of trees for the Client in accordance with industry standards, the Client understands that any risk ratings and recommendations for mitigating such risks will be based on the observed defects, conditions, and factors at the time of the tree risk assessment or inventory.

(b) The Client acknowledges that any recommendations made to mitigate risk factors will be made in accordance with industry best practices and standards, but that the decision to implement the recommended mitigation or remove the risk factors rests solely with the Client.

(c) The Client understands that all risk ratings used are intended to assist the Client with understanding the potential for tree or tree part failure, and are not meant to be used to declare any tree or tree part to be safe or free from any defect. As such, the Client should not infer that any tree not identified as having an imminent or probable likelihood of failure, or not identified with a moderate, high, or extreme risk rating, or not having a condition rating of poor or dead is “safe” or will not fail in any manner.

(d) The Client understands that it is the Client's responsibility to ensure that the assessed tree or trees are continually inspected and reassessed periodically, or after any major weather event, in order to ensure that risk rating information is kept current, and to enter any changes to risk ratings or mitigation measures to the inventory or tracking system used by the Client.

2.13 Tree or Plant Value Appraisals

(a) The Client acknowledges that tree appraisal is not an exact science. If the Client Agreement is for Bartlett Tree Experts to provide the Client with an appraisal estimate of cost or value, or estimated tree asset value, for specified trees or plant materials, the Client understands that those estimates will be based on a combination of visible conditions at the time of appraisal, information or pictures provided by the Client, local knowledge, information and/or cost estimates provided by local nurseries or plant wholesalers, information and/or costs provided by tree care or landscape installation and maintenance companies, industry best practices, and/or asset value software.

(b) The Client understands that while any such appraisal will be based on one or several accepted industry methods of appraising plant material values, the appraised values provided may or may not be accepted as the final value by third parties, or decision makers in disputes over plant values, such as courts, arbitrators, insurers, or mediation efforts.

2.14 Local and Tree-Related Permits

Unless the Client Agreement states differently, the Client is responsible for obtaining and paying for all required local or tree related permits required. If the Work stated in the Client Agreement involves Bartlett Tree Experts submitting for, or assisting the Client in submitting for, any kind of local or tree-related permit, the Client understands that Bartlett Tree Experts cannot guarantee the successful outcome. If Bartlett Tree Experts submits a local or tree permit application on behalf of the Client, the Client must provide all necessary information for Bartlett to make such a submittal, and the Client will be responsible for paying for, or reimbursing Bartlett Tree Experts for, all fees and expenses related to the application process, regardless of the outcome.

2.15 Expert Witness and Testimony

The Client acknowledges that unless the Scope of Work in Client Agreement is specifically to perform Expert Witness services and testimony for the Client, then nothing in the Client Agreement will obligate Bartlett Tree Experts to perform Expert Witness services or provide expert testimony for or on behalf of the Client.

2.16 Environmental Benefits Assessments

(a) The Client understands that Bartlett Tree Experts may use one or more software, or other programs, developed by other companies or government agencies, which are designed to help provide estimates on the environmental benefits of trees, shrubs, or other plant materials if the Work involves providing an environmental benefit assessment for the Client.

(b) The Client acknowledges that while Bartlett Tree Experts will be responsible for the correct collection and input of data into any such software or other program used to help estimate environmental benefits of trees, shrubs, and other plant materials, the determinations of the data made by any such program may vary based on the method, software, type, year, or version used at any given time. The Client understands that any such method, software, type, year, or version used is meant to provide a sound, scientific method to help the Client understand the environmental benefits of the collected data.

2.17 Tree and Property Hazards and Safety Issues

The Client understands that in no way does Bartlett Tree Experts imply, nor should the Client infer that Bartlett Tree Experts assumes the responsibility for inspecting, identifying, and correcting tree or property hazards or safety issues on or near the Client's property, or conducting tree risk assessments, for which the Client Agreement does not specify, during the course of any of its ongoing consultative or other activities related to this Agreement.

2.18 Remote Sensing and Tree Canopy Assessments

(a) If the Work requires Bartlett Tree Experts to evaluate aerial imagery to classify land cover classes, classify random points, or create or manipulate shapefile boundaries, the Client understands that certain factors can prohibit the accuracy of the final Work product, such as; the availability of imagery, files, and shapefiles for the property or site from reliable sources, the accuracy and quality of imagery, files, or shapefiles obtained from reliable sources or provided by the Client, the date of when the imagery, files, or shapefiles were taken or created, and the ability for a person to visually discern the difference between the pixels of aerial imagery.

(b) If such factors inhibit the accuracy of the Work, Bartlett Tree Experts may choose to conduct visual assessments, or use other means, to verify or classify points or imagery into the required specifications. If such alternate methods are used, Bartlett Tree Experts will communicate the use of such methods to the Client in the final work product. If it is not possible or feasible to use alternative methods, then the Client acknowledges that the final work product may have some gaps in accuracy.

2.19 Use of Drones and Drone-Related Equipment

(a) If the Work specifies the use of Drones or Drone-related equipment to help collect information, the Client acknowledges that in some cases the use of Drones and Drone-related equipment can provide detailed information, imagery, views, and pictures of a tree(s) or property(s); however, in some cases, not all aspects of a tree(s) or property(s) can be seen or accessed by a Drone. The Client understands that this technology can be limited and should not be used by the Client as the sole decision-making criteria, but rather one of many factors used by the Client in the decision-making process.

(b) The Client agrees that other methods of obtaining the required information must be included in the Client Agreement, and may be required to be utilized, in addition to or separate from the use of Drones or Drone related equipment in the event that the limitations are too severe to perform the required Work.

2.20 Decay and Wood Analysis Devices

(a) The Client acknowledges that all decay and wood analysis devices have limitations, and the use of any such device should be used to supplement information regarding the decay or structural deficiencies within a tree(s), and not as the sole source of information.

(b) If the Work requires the use of a decay or wood analysis device, unless the Client Agreement specifies the type of device, Bartlett Tree Experts will decide the most appropriate type of decay and/or wood analysis device to use based on the conditions present and the information needed to supplement and complete the Work.

(c) The Client acknowledges and understands that the presence of decay or other structural weaknesses, such as air pockets, voids, cracks, burned wood, or other structural deficiencies, will more than likely lead the inspecting arborist to the same result with respect to the determination made on the overall structural integrity of the tree in question based on results from the decay and/or wood analysis device used, so the presence of any of these items in sufficient quantities will preclude the need to verify the presence of another, and in many cases it may not even be necessary for the type of device used to distinguish between the specific types of structural issues for the arborist to make a determination given all other objective evidence.

2.21 Diagnostic Services

Bartlett Tree Experts may offer diagnostic services as a means of attempting to isolate certain plant pest or soil problems for the Client, and determining the most logical possibility as to the cause of the condition of the trees, shrubs, or plants in question. The Client understands that in some cases government quarantines may prohibit samples from being sent to a diagnostic clinic, and in some cases, determinations on samples may be inconclusive.

2.22 Tree Preservation, Tree Protection, and Construction and Site Monitoring

(a) If the Work includes Bartlett Tree Experts conducting or providing tree preservation or tree protection evaluations, tree impact evaluations, recommendations, specifications, and/or documents required by the governing agency, the Client understands that Bartlett Tree Experts will review the project, materials or plans that are provided by the Client, combined with industry best practices and current tree conditions, to arrive at the recommendations and specifications. The Client also understands that trees are living organisms and that even following all industry best practices and specifications cannot guarantee that a tree will survive construction impacts, which may include but are not limited to soil compaction, root damage, inadequate soil moisture, and decrease in tree stability.

(b) If the Work includes Bartlett Tree Experts conducting or providing tree monitoring during project construction, the Client understands that Bartlett Tree Experts will review the project, materials, or plans that are provided by the Client and/or described by the Client representative at the site, and provide recommendations to the Client to assist with tree preservation or protection, but that the Client will be responsible for ensuring the implementation of such recommendations by the Client or any third parties.

2.23 Irrigation and Recycled Water Assessments

If the Work requires Bartlett Tree Experts to provide irrigation or recycled water assessments as a means of aiding the Client with their tree care needs, the assessments will be provided using the best known site

conditions, the best available water quality information, or the best available water quality test results provided to Bartlett Tree Experts; however, the Client acknowledges that Bartlett Tree Experts cannot provide information on water source, delivery systems, water chemistry, water quality testing methodology, or distribution systems.

2.24 Bird, Water Fowl, and Wildlife Habitat Assessments

If the Work requires Bartlett Tree Experts to provide bird, water fowl, and wildlife habitat assessments or identifications as a means of aiding the Client with their tree care needs and wildlife considerations, the assessments will be based on known site conditions and available industry bird, waterfowl, and wildlife management information.

2.25 Endangered or Protected Species and Habitats

(a) If the Work is for Bartlett Tree Experts to identify trees or plant materials that may be endangered or protected species, or to identify trees or plant materials that may be primary or secondary habitat for endangered or protected species, or to provide any analysis for a project that may affect any endangered species or protected species or its habitat, then Bartlett Tree Experts will base all reports and information on the existence of any known endangered or protected species and known habitats using government approved endangered or protected species or habitat information.

(b) The Client acknowledges that Bartlett Tree Experts cannot be responsible for identifying unknown endangered species or habitats.

2.26 Wetland and Riparian Habitat Mapping

The Client understands that if the Work involves wetland or riparian habitat mapping, such maps will require the Client to provide the tree or plant species considered to be the primary or secondary habitat for the specific species of animal in question, and such maps will be limited to the species information provided as it overlays within the known designated wetland areas.

2.27 Representation Services

If the Work involves a member of Bartlett Tree Experts acting as a representative for, or decision-maker for, the Client, including but not limited to activities such as reviewing, approving or declining tree-related permits, plants, designs, or selections submitted by third parties, then the Client agrees to be the final decision-maker in the event of a third party appeal of an adverse decision or recommendation made by Bartlett Tree Experts with respect to granting or denying a tree related permit, plant, design, or selection submitted by a third party. The Client also agrees to defend Bartlett Tree Experts against any claims made by third parties regarding such decisions or recommendations, and represent the decisions and recommendations of Bartlett Tree Experts, as if such decisions or recommendations were made by the Client.

2.28 Integrated Pest Management

(a) If the Work includes consultation for integrated pest management services, the Client understands that the final product may involve recommendations for plant health care treatments that will be tailored to meet the Client's needs for specific trees, shrubs, turf areas, or plants. In creating these recommendations, Bartlett Tree Experts will consider the Client's objectives, priorities, budgetary concerns, plant materials, site conditions, pest and disease infestation levels and the expectations of those levels, and timing issues.

(b) The Client acknowledges that such recommendations may involve one or more inspections of specific plants to help determine insect and disease concerns, the sampling of specific plant materials or soil areas, an understanding of the cultural needs of certain plants, consideration of biological control concepts and limitations (natural and/or introduced predators), recommended improvements to physical site conditions, or the use of pesticide treatments. The integrated pest management service does not combine all possible controls and concepts for every tree, shrub, turf area, or plant, but rather it considers the most reasonable option or options for control of and mitigation of insect and disease damages to the specific trees, shrubs, turf areas or plants as designated by the Client to meet the Client's goals.

(c) The Client understands and acknowledges that during the course of an integrated pest management program, as inspections are taking place, and treatments or other services are being performed to certain trees or shrubs, not every tree or shrub inspected will require a specific treatment or other service, and in fact, some trees or shrubs may not require any specific treatment or other service throughout the course of a season to maintain health and vigor if the inspections show insignificant pest thresholds, and sound environmental and cultural conditions.

(d) The Client also understands that tree, shrub, plant and turf inspections conducted during the integrated pest management program are for the purpose of determining plant health issues and, insect and disease thresholds; and are not conducted for the purposes of determining tree, shrub, plant, or turf safety.

2.29 Plant Species Selection

If the Work involves Bartlett Tree Experts providing advice and guidance on plant species selection to aid the Client with their landscape site needs, Bartlett Tree Experts will provide the advice and guidance based on the known site conditions, the available plant species locally at the time, and the plant species characteristics. The Client will be responsible for the planting and maintenance, and ensuring the survival of such plant selections in the landscape.

2.30 Trees and Subsidence Assessments

(a) If the Work involves Bartlett Tree Experts providing an assessment of relationship between certain trees or tree parts and the subsidence or movement of a building or structure, the Client understands that certain inferences and assumptions will be made given the location, visibility, soil and drainage conditions, size, species, and condition of the tree or trees, and other factors, in order to perform the Work in the least intrusive manner possible.

(b) Bartlett Tree Experts recommends that the Client reviews any tree related report recommendations, prior to having the work completed, with their structural engineer or other qualified building contractor to help the client determine any potential adverse impact to the buildings or structures.

2.31 Investigation of Covenants, Easements, Constraints, or Restrictions

The Client is responsible for investigating and identifying to Bartlett Tree Experts any covenants, easements, constraints, or other restrictions to the title or deed on the property that may adversely impact Bartlett Tree Experts' ability to perform the Work.

2.32 Cancellation

If the Client cancels or reduces the Work after the Work has started, the Client shall pay Bartlett Tree Experts for all the items of the Work that have been completed and all reasonable costs Bartlett Tree Experts has incurred in preparing to perform the remainder of the Work.

2.33 Payment

The Client shall pay for the Work when the Client receives Bartlett Tree Experts' invoice for the Work, unless specific payment terms have been agreed upon by the parties. If any amount remains unpaid 30 days after the date of the invoice or any period stated in the Client Agreement, whichever is longer, as a service charge the unpaid amount will accrue interest at the rate of 1.5% per month (or 18% per year) or the maximum rate permitted by law, whichever is lower. The Client shall reimburse Bartlett Tree Experts for any expenses (including attorneys' fees and court costs) it incurs in collecting amounts that the Client owes under the Client Agreement.

Article 3
TREE CONDITIONS

3.1 Cables, Braces and Tree-Support Systems

(a) The Client acknowledges that cables, braces or tree-support systems are intended to reduce the risk associated with tree part breakage by providing supplemental support to certain areas within trees and in some cases by limiting the movement of leaders, limbs, or entire trees, and are intended to mitigate the potential damage associated with tree part breakage; but that such supplemental support systems cannot eliminate the risk of breakage or failure to trees or tree parts entirely, and future breakage and damage is still possible.

(b) The Client acknowledges that for cables, braces or tree-support systems to function optimally, the Client must arrange for them to be inspected and maintained by a qualified arborist periodically and after each major weather event.

3.2 Lightning Protection Systems

(a) The Client acknowledges that lightning protection systems are intended to direct a portion of the electricity from a lightning strike down through the system into the ground, and mitigate the potential damage to the tree from a lightning strike, but that such systems cannot prevent damage to structures, nor can such systems prevent damage to trees caused by lightning entirely.

(b) The Client acknowledges that for lightning protection systems to function optimally, the Client must arrange for them to be inspected and maintained by a qualified arborist periodically and after each major weather event.

3.3 Recreational Features

(a) The Client acknowledges that Bartlett Tree Experts recommends stopping the use of, and removing, any tree house, ropes course, swing, or other recreational feature attached to a tree. Regardless of the health or condition of the tree, such features might be unsuited for the intended use or might place unpredictable forces on the feature or the tree, resulting in failure of the feature or the tree and injury to persons or damage to property. Bartlett Tree Experts is not responsible for the consequences of use of any such feature.

(b) The Client acknowledges that if a recommendation is made to mitigate an observed and immediate safety issue on a tree with any such device or feature attached, such as the removal of a dead, dying, or broken limb that could fall and injure a person or damage property, the Client should not infer that following the recommendation and mitigating the immediate safety issue makes the tree in question safe for the use of the attached device or feature.

3.4 Root Pruning

In the right circumstances, root pruning is a valuable and necessary service, but it might pose a risk to the health and structural integrity of trees. To limit that risk, Bartlett Tree Experts performs root pruning to industry standards, but the Client acknowledges that the health and structural integrity of trees within the Scope of Work might nevertheless be adversely affected by any root pruning performed as part of the Work. Bartlett Tree Experts shall assist the Client in understanding the risks involved before opting for root pruning, but the Client will be responsible for deciding to proceed with root pruning.

3.5 Stumps, Stump Grinding, Tree Grates

The Client acknowledges that if any recommendations call for the removal of certain trees, that the remaining stumps may present tripping hazards, and that it is the Client's responsibility to remove any such tripping hazard, whether such hazard is created by the stump, the grindings if the stump is ground down, or any tree grates that exist.

3.6 Client Trees in Hazardous Condition

If the Client Agreement specifies that one or more trees within the Scope of Work are in hazardous condition, have an extreme, high or moderate risk rating, or should be removed for safety reasons, the Client acknowledges that removing those trees would prevent future damage from trees or tree limbs falling. If the Client requests that one or more of those trees be pruned instead of removed, the Client acknowledges that although pruning might reduce the immediate risk of limbs falling, it does not preclude the possibility of future limb, stem, or root failure. Bartlett Tree Experts is not responsible for any such future failure.

3.7 Trees in Poor Health or a Severe State of Decline

The Client acknowledges that if a tree is in poor health or in a severe state of decline, Bartlett Tree Experts cannot predict how that tree will respond to any recommended plant health care or soil care and fertilization treatment and might not be able to prevent that tree from getting worse or dying.

3.8 Trees Planted and Maintained by Other Contractors

The Client acknowledges that if trees within the Scope of Work were recently planted or are being maintained by one or more other contractors or if one or more other contractors will be watering and providing services with respect to trees within the Scope of Work, how those trees respond to treatment in the course of the Work might be unpredictable, and Bartlett Tree Experts cannot be responsible for the health of such trees or plants.

3.9 Trees with Cones and Large Seed Pods

The Client acknowledges that large tree cones or seedpods on some trees can become dislodged and fall without notice, creating a hazard to persons or property. If the Client has the type of tree on their property that produces large, heavy cones or seedpods, and the Client does not wish to remove the tree, Bartlett Tree Experts recommends that the Client marks off and restricts the area under and near the tree from pedestrian and vehicle traffic whenever possible, places a warning sign near the tree, remains aware of the

hazardous conditions the falling cones can create, and inspects the tree annually and removes any observable cones if possible in order to mitigate the potential for damage from falling cones.

3.10 Fire Damage

(a) Regardless of the species, trees exposed to fire can suffer structural damage that goes beyond whatever external damage might be visible. Fire can cause cracking and brittleness in tree structure and integrity; it can make pre-existing defects worse; it can make roots less stable; and it can weaken the overall health of the tree, making it susceptible to disease and pest infestations. The effects of fire damage are unpredictable and difficult to determine. Bartlett Tree Experts is not responsible for any injury to persons or damage to property resulting from services performed on fire-damaged trees as part of the Work.

(b) The Client acknowledges that if trees and shrubs on the Client's property have been exposed to fire, the Client should have qualified arborist periodically inspect trees and shrubs on the property for fire damage.

Article 4
DISPUTE RESOLUTION

4.1 Arbitration

(a) As the exclusive means of initiating adversarial proceedings to resolve any dispute arising out of or related to the Client Agreement or Bartlett Tree Experts' performance of the Work, a party may demand that the dispute be resolved by arbitration administered by the American Arbitration Association in accordance with its commercial arbitration rules, and each party hereby consents to any such dispute being so resolved. Any arbitration commenced in accordance with this section must be conducted by one arbitrator. Judgment on any award rendered in any such arbitration may be entered in any court having jurisdiction. The parties also agree that the issue of whether any such dispute is arbitrable will be decided by an arbitrator, not a court.

(b) The arbitrator must not award punitive damages in excess of compensatory damages. Each party hereby waives any right to recover any such damages in any arbitration.

4.2 Third Party Liability

The Client acknowledges that the use of any management plans created, reports written, recommendations, maps, sketches, and conclusions made are for the Client's use and are not intended to benefit or cause damage to any third party. Bartlett Tree Experts accepts no responsibility for any damages or losses suffered by any third party or by the Client as a result of decisions made or actions based upon the use of reliance of the management plans created, reports written, recommendations, maps, sketches, and conclusions made by any third party.

4.3 Limitation of Liability

The maximum liability of Bartlett Tree Experts for any losses incurred by the Client arising out of the Client Agreement or Bartlett Tree Experts' performance of the Work will be the amount paid by the Client for the Work, except in the case of negligence or intentional misconduct by Bartlett Tree Experts.

Article 5
MISCELLANEOUS

5.1 Client Responsibilities

(a) The Client is responsible for the maintenance of the Client's trees, shrubs, and turf and for all decisions as to whether or not to prune, remove, or conduct other types of tree work on each respective tree, or when to prune, remove, or conduct other tree work on any respective tree, and all decisions related to the safety of each respective tree, shrub, and turf area.

(b) Nothing in this Agreement creates an ongoing duty of care for Bartlett Tree Experts to provide safety maintenance or safety inspections in and around the Client's property. It is the responsibility of the Client to ensure the safety of its trees and landscape, and to take appropriate actions to prevent any future tree or tree part breakage or failures, or otherwise remove any hazardous conditions which may be present or may develop in the future.

5.2 Severability

If any portion of this Client Agreement is found to be unenforceable, then only that portion will be stricken from the Client Agreement, and the remainder of the Client Agreement will remain enforceable.

5.3 Unrelated Court Proceedings

The Client acknowledges that Bartlett Tree Experts has prepared the Client Agreement solely to help the Client understand the Scope of Work and the related costs. If a court subpoenas Bartlett Tree Experts' records regarding, or requires that a Bartlett representative testify about, the Client Agreement or the Work in connection with any Proceeding to which Bartlett Tree Experts is not a party or in connection with which Bartlett Tree Experts has not agreed to provide expert testimony, the Client shall pay Bartlett Tree Experts Two Hundred Dollars ($200.00) per hour for time spent by Bartlett representatives in collecting and submitting documents for those Proceedings and attending depositions or testifying as part of those Proceedings.

5.4 Use of Information

The Client acknowledges that the information provided within the Client Agreement and any deliverables provided is solely for the use of the Client for the intended purpose of helping the Client understand and manage their tree care needs. All deliverables must be used as a whole, and not separated or used separately for other purposes.

5.5 Notices

For a notice or other communication under the Client Agreement to be valid, it must be in writing and delivered (1) by hand, (2) by a national transportation company (with all fees prepaid), or (3) by email. If a notice or other communication addressed to a party is received after 5:00 p.m. on a business day at the location specified for that party, or on a day that is not a business day, then the notice will be deemed received at 9:00 a.m. on the next business day.

5.6 Amendment; Waiver

No amendment of the Client Agreement will be effective unless it is in writing and signed by the parties. No waiver under the Client Agreement will be effective unless it is in writing and signed by the party granting the waiver. A waiver granted on one occasion will not operate as a waiver on other occasions.

5.7 Conflicting Terms

If these terms conflict with the rest of the Client Agreement, the rest of the Client Agreement will prevail. If these terms conflict with any other Client documentation, terms, or purchase order agreement, then the Client Agreement and these terms will prevail.

5.8 Entire Agreement

The Client Agreement with these terms constitutes the entire understanding between the parties regarding Bartlett Tree Experts' performance of the Work and supersedes all other agreements, whether written or oral, between the parties.