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**PENINSULA
ENVIRONMENTAL**

— Consultant & General Contractor —

Client

Sunland North HOA
Contact: Shirley Legg
320 Blakely Blvd | Sequim, WA 98382
206-550-5604 | vicepresident@sunlandnorth.org
Clallam County Parcels: 033008760006 and 033008760002

Project Address

320 Blakely Blvd | Sequim, WA 98382
Clallam County Parcels: 033008760006 and 033008760002

Consultant

Written by Jessica Mullin, Registered Consulting Arborist, ISA, TRAQ certified, RCA
Reviewed by John Bornsworth, BCMA, RCA

Thank you for the opportunity to work on your project. We appreciate your business and look forward to working with you in the future. If you have questions do not hesitate to contact us. Peninsula Environmental Group Inc. is small environmental services company based in Port Angeles Washington, with satellite offices in Olympia Washington and Petoskey Michigan. We provide expert natural resource consulting and design services, and highly specialized contractor services, to a variety of clients across the Pacific Northwest and Midwest. Our sectors including private homeowners & private business, private and municipal development, local, state and federal government, tribes and non-profits.



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SUMMARY

Sunland North Homeowner's Association (Sunland North HOA) owns the trees on Clallam County Parcel numbers 033008760006 and 033008760002 in Sequim. Sunland North HOA asked Peninsula Environmental Group to perform a tree risk assessment on trees bordering property target zones and to prepare a map and a report with detailed findings.

On June 2nd and June 3rd, 2022, Jessica Mullin, Tree Risk Assessment Qualified Certified Arborist, evaluated these trees on the Sunland North HOA property. Her observations and recommendations are in this report.

BACKGROUND

Shirley Legg with Sunland North HOA (the "Client") requested a tree risk assessment of trees in the common area bordering property target zones at Sunland North HOA, Clallam parcel numbers 033008760006 and 033008760002 (the "Site"). The Client asked Peninsula Environmental Group, Inc. (the "Consultant") to perform this assessment and prepare this report and simple map. Our assessment, opinions and recommendations are included in this letter. Please contact us with questions you may have regarding this report.

Assignment & Purpose

1. Perform a site and tree risk assessment of trees near property target zones.
2. Provide a simple map, and a report with conclusions and recommendations.

Professional Assumptions & Limitations

This report summarizes the data collected during our site reconnaissance and assessment, our conversations regarding the project, and our professional opinions and recommendations. The results and recommendations of this report represent our professional opinion compiled from biological forensics, information provided to us, referenced material and our experience. Our recommendations are compiled with industry standards, best-available-science and currently accepted best management practices.

Additional project specific limitations:

- Consultant assessed the Site on June 2nd and June 3rd, 2022. This report summarizes site characteristics as they were observed these days only.
- This report is intended for the exclusive use of the Client and their agents and only for specific application to the referenced property. This report should not be applied to any other tree or other property for any purpose.
- Our evaluation assesses only the tree identified within the scope of this project.
- Fungal isolation, laboratory diagnostics, subsurface explorations, aerial inspections, and other advanced diagnostics were not applied unless specifically identified in this report.



OBSERVATIONS

Table 1: Site properties as of assessment date.

City/County	Clallam
Parcels	033008760006 and 033008760002
Descriptions	PTN TRACT A EXC DEEDED R/W SUNLAND DIV 17 PH 6 V15 OF PLATS P46 LINE SURV V71 P32 OPEN SPACE AREA
Owner	SUNLAND DIVISION 17 OWNERS ASSOCIATION
Land Use Code	95
Critical Areas Inventory	No
Shoreline Designation	No

Consultant split the Site into four different zones:

- Zone 1 consists of trees on the east side of the property that border the RV park.
- Zone 2 consists of trees on the eastern section of houses on the Site.
- Zone 3 consists of trees on the western section of house on the Site.
- Zone 4 consists of trees on the northern border of the property just south of Woodcock Road. These trees were assessed using a Level 1 Tree Risk Assessment since they were not located near property target zones. Consultant drove by the line of trees to look for any obvious defects. Nothing was noted on these trees.

Words in bold are defined in *Appendix A: Glossary*.

In general, trees that were assessed as low risk with no notes or recommended actions were not commented on or tagged in the map, as agreed upon between Consultant and Client.



Figure 1: The Site was split into four zones showed below.



Zone 1

Zone 1 consists of a line of trees on the east side of the property, just south of Clallam County Parcel number 033008219020 that consists of the Sunland Water District and some RV's parked just north of the trees and north of a fence. This line of trees was dominated by mature Douglas-fir (*Pseudotsuga menziesii*) trees with some younger western redcedar (*Thuja plicata*) trees scattered throughout and one cherry (*Prunus* sp.) tree. The understory consisted of grass, tree duff, and the invasive Himalayan blackberry (*Rubus armeniacus*), English holly (*Ilex aquifolium*), and thistle (*Cirsium* sp.). Native understory in the eastern part of this zone includes elderberry (*Sambucus racemosa*), osoberry (*Oemleria cerasiformis*), and snowberry (*Symphoricarpos albus*).

Consultant assessed and labeled the trees from west to east.

See *Table 2* below for specific tree, species, notes, and recommendations.



Figure 2 and Figure 3: Close up of Zone 1 map of trees and numbered trees.



<p>Legend</p> <ul style="list-style-type: none"> ● Tree locations Management Zones ■ Zone 1 ■ Zone 2 ■ Zone 3 		<p>Peninsula ENVIRONMENTAL</p> <p>— Consultant & General Contractor —</p>	<p>Tree Map Zone 1</p>	
<p>Prepared for: Sunland HOA</p>			<p>June 2022</p>	



Table 2: Trees in Zone 1

Tree #	Common Name	Scientific Name	Risk Rating	Notes and Recommendations
1	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Some dead branches below. Remove dead branches.
2	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Some dead branches. Remove dead branches. Note broken lamp fixture next to branch.
3	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low to moderate	Multiple leaders at about 5 feet from ground, though there is one dominant leader . Remove dead and further reduce secondary leaders. Remove dead wood at base.
4	Western redcedar	<i>Thuja plicata</i>	Moderate	Two tops intertwined together starting around 15 to 20 feet. Included bark. Targets are RV park and house. Consider removal.
5	Western redcedar	<i>Thuja plicata</i>	Low	Young. Multi-stemmed. Consider removal. Low risk currently but will likely grow into higher risk- there is included bark and the weak attachment will likely continue to grow.
6	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature. Remove dead branches.
7	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature. Remove dead branches.
8	Western redcedar	<i>Thuja plicata</i>	Low	Young tree, located within 5 feet of mature Douglas-fir. Consider removing it and one two over (Tree # 10). Low risk but is crowded in the forest setting and should be thinned (removed) for forest health.
9	Western redcedar	<i>Thuja plicata</i>	Low	Young tree. Remove western redcedar trees on either side (within 5 feet) to make room. Then this tree is about 10 feet away from mature Douglas-fir trees on either side.



10	Western redcedar	<i>Thuja plicata</i>	Low	Young tree with multiple stems about two feet up. Five feet from more mature western redcedar with good structure and mature Douglas-fir. This is low-risk now but will likely develop into higher risk in the future with the multiple stems. It is crowded in the forest setting and should be thinned (removed) for forest health.
11	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature tree. Remove dead wood.
12	Western redcedar	<i>Thuja plicata</i>	Low	About 15 east of mature Douglas-fir tree. Bifurcated at base about 3 feet high with one larger leader. Low-risk now but could develop into moderate-risk. Consider reducing small leader.
13	Cherry tree	<i>Prunus</i> sp.	Low	Healthy tree, no recommendations. (Remove two limbs on Douglas-fir to the east to create more space for this tree.)
14	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature tree. Remove two lowest western branches that are growing into cherry tree to the west. Irrigation is located too close to trunk-remove or make longer if in use.
15	Western redcedar	<i>Thuja plicata</i>	Low	Young. Tangled in Douglas-fir to west but okay for now. Remove Himalayan blackberry from canopy. Located about 5-feet east of mature Douglas-fir.
16	Western redcedar	<i>Thuja plicata</i>	Low	Multi-stemmed. Covered with Himalayan blackberry. Consider removal and planting with lower tree like cherry to reduce competition and for forest health.
17	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature tree. Remove dead branches and Himalayan blackberry.
18	Western redcedar	<i>Thuja plicata</i>	Low to moderate	Remove small trees to south of tree and remove Himalayan blackberry. Has a bifurcated stem at about 20 feet high. Consider removal and replace with a cherry tree.



19	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature tree. Remove blackberry and dead branches.
20	Western redcedar	<i>Thuja plicata</i>	Low	Young, topped tree. Low-risk for now but consider removal for long term based on future structure.
21	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature. Irrigation is located too close to trunk-remove or make longer if in use. Thin out branches on southside and remove dead branches. There are many close larger branches that could be thinned to avoid future breakage.
22	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature. Removing dead branches that have been cut and left to about 5 feet. Remove invasive species below including thistle and poison hemlock (<i>Conium maculatum</i>).
23	Western redcedar	<i>Thuja plicata</i>	Low	Young western red cedar with decay at base and a lean to the east. Consider removal and replacing with shorter tree.
24	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature. Remove invasive Himalayan blackberry underneath tree. Remove dead branches and prune a few branches on north side of tree hanging over RV park for end weight reduction of.
25	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature. Remove dead branches and branches with previous stub cuts .
26	Western redcedar	<i>Thuja plicata</i>	Low	Young tree. Close to mature Douglas-fir but fine for now.
27	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Mature. Remove dead branches.
28	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Remove off fence and remove vertical branch.



Zone 2

Zone 2 consists of trees located around the eastern section of houses on the Site. These are mostly street trees and trees located between or behind houses.

See *Table 3* below for specific tree, species, notes, and recommendations.

Figure 4: Zone 2 labeled in green.





Table 3: Trees in Zone 2

Tree #	Common Name	Scientific Name	Risk Rating	Notes and Recommendations
48	Cherry	<i>Prunus</i> sp.	Low	Irrigation is too close the trunk and being strangled by roots. Replace or move irrigation further from trunk.
49	Cherry	<i>Prunus</i> sp.	Low	Prune branches away from roof.
50	Shore pine	<i>Pinus contora</i> 'Contorta'	Low	Prune rubbing and crossing branches. Reduce competing leaders. There are the two biggest that are very close to each other. Reduce one. Prune branches away from roof.
51	Pine	<i>Pinus</i> sp.	Low	Prune branches away from roof.
54	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from house.
55	Japanese maple	<i>Acer palmatum</i>	Low	Touching sides of house and roof. Prune back and consider replacing with more suitable option.
56	Deodar cedar	<i>Cedrus deodara</i>	Moderate	Consider higher level Tree Risk Assessment and using micro resistance drill . Wound at base about 1 to 2-feet wide and 3-feet high.
57	Weeping Nootka cypress	<i>Chamaecyparis nootkatensis</i> 'Pendula'	Moderate	Three trunks with included bark at base. One of them splits into two more trunks close together. The way they are most likely to fail will be into the grass, but the tree is located close to two houses. Consider cabling or remove and replace with smaller tree.
58	Norway spruce	<i>Picea abies</i>	Low	Appears healthy and low-risk but there is large amounts of sap running down the trunk. There is sapsucker (<i>Sphyrapicus</i> sp.) presence and damage, which is usually relatively benign. Continue to monitor tree.



59	Nootka cypress	<i>Cupresses nootkatensis</i>	Low	Growing very close to Norway spruce but appears to straighten out at the end, displaying phototropism .
60	Norway maple	<i>Acer platanoides</i>	Low	Very dense. Thin for health.
61	Red maple	<i>Acer rubrum</i>	Low	Prune branches away from roof.
62	Deodar cedar	<i>Cedrus deodara</i>	Low	Prune branches away from roof. Trunk is over buried . Unbury trunk.
63	Blue spruce	<i>Picea pungens</i>	Low	Roots are starting to get damaged from lawnmower. Do not mow over roots.
64	Deodar cedar	<i>Cedrus deodara</i>	Low	Prune branches away from roof.
65	Japanese cherry	<i>Prunus serrulata</i>	Low	Prune branches away from roof.
66	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Planted too close the driveway. Low-risk but consider planting more appropriately sized tree.
67	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
68	Japanese maple	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
69	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
70	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
71	Quaking aspen	<i>Populus tremuloides</i>	Low	Prune branches away from roof.

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72	Maple	<i>Acer sp.</i>	Low	Prune branches away from roof.
73	Maple	<i>Acer sp.</i>	Low	Prune branches away from roof.
74	Quaking aspen	<i>Populus tremuloides</i>	Low	Prune branches away from roof.
75	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
76	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
77	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
78	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
79	Japanese cherry	<i>Prunus serrulata</i>	Low	Very close to Douglas-fir. Low-risk but consider replacing with something more size appropriate.
80	Vine maple	<i>Acer circinatum</i>	Low	In general in this corridor, make sure anything that has been topped continues to be topped. We do not want trees growing tall with multiple topped leaders. This applies to all trees along this corridor.
81	Multiple	See notes	See notes	There are a handful of tightly spaced trees just west of house number 80. Unsure if private property or Client's property so did not assess close up. They should at the very least be pruned back from the houses.
82	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from house.

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83	Douglas-fir	<i>Pseudotsuga menziesii</i>	Low	Bifurcated trunk about 20 feet high. Low-risk but reduce secondary leader for future structure.
84	Deodar cedar	<i>Cedrus deodara</i>	Low	Low-risk but reduce secondary leader for future structure.
85	Deodar cedar	<i>Cedrus deodara</i>	Low	Topped. Continue to top so structure does not become issue.
86	Giant sequoia	<i>Sequoiadendron giganteum</i>	Low	Stop damaging roots when mowing.
87	Blue atlas cedar	<i>Cedrus atlantica</i>	Low	Wound at base of trunk and tear further up. Appears that there was a wire wrapped around the tree at some point. Multi trunked. Low-risk now but monitor in 3 years. Likely will be moderate-risk in future.



Zone 3

Zone 3 consists of trees located around the western section of houses on the Site. These are mostly street trees and trees located between or behind houses.

See Table 4 below for specific tree, species, notes, and recommendations.

Figure 5: Zone 3 labeled in red.





Table 4: Trees in Zone 3

Tree #	Common Name	Scientific Name	Risk rating	Notes and Recommendations
29	Blue spruce	<i>Picea pungens</i>	Low	Low-risk now but reduce competing leaders.
30	Cherry tree	<i>Prunus sp.</i>	Low	Low-risk but multiple dead branches near fence. Could possibly break off on roof with minimal damage. Remove dead branches. Consider replacing with more appropriate tree.
31	Spruce	<i>Picea sp.</i>	Low	Continue to monitor for structure.
32	Juniper	<i>Juniperus sp.</i>	Low	Fix old wounds to proper pruning cuts . Reduce secondary leader for long term structure.
33	Western redcedar	<i>Thuja plicata</i>	Low	Multi stemmed at base. Will be an issue in the future. Consider removal and replace. Trees # 33 and 34 look like one tree from the outside but are two separate trees.
34	Western redcedar	<i>Thuja plicata</i>	Low	This tree is healthy and will benefit from Tree 33 being removed and replaced with a more appropriate tree further away.
35	Blue cedar	<i>Cedrus atlantica</i>	Low	Soil is buried too high around base of trunk. Unbury trunk. Prune rubbing and crossing branches as needed.
36	Blue cedar	<i>Cedrus atlantica</i>	Low	Soil is buried too high around base of trunk. Unbury trunk. Prune branches away from roof. Thin out and reduce competing leaders. Low-risk that could eventually be a higher risk if not pruned correctly.
37	Blue spruce	<i>Picea pungens</i>	Low	Reduce competing/smaller leader to help with structure overtime.



38	Deodar cedar	<i>Cedrus deodara</i>	Low	Low-risk because only target is neighboring purple leaf plum but consider reducing smaller leader for structure.
39	Deodar cedar	<i>Cedrus deodara</i>	Low	Tree is planted within 3 feet of structure on either side. Branches are touching roof. Prune branches away from roof and consider planting a more appropriate species.
40	Deodar cedar	<i>Cedrus deodara</i>	Low	Low-risk for now but consider reducing competing leaders overtime. There are at least three.
41	Pine	<i>Pinus sp.</i>	Low	Tree looks like it was topped at some point. Reduce and thin competing leaders or consider removal. It is low-risk for now but future structure will be an issue.
42	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
43	Deodar cedar	<i>Cedrus deodara</i>	Low	Prune branches away from roof.
44	Japanese maple	<i>Acer palmatum</i>	Low	Prune branches away from roof.
45	Japanese maple	<i>Acer palmatum</i>	Low	Prune branches away from roof.
46	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
47	Maple	<i>Acer sp.</i>	Low	Prune branches away from structures.
52	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Low-risk but be careful of roots in grass. They are being damaged by lawnmower. There is also a machine scar on one of the branches.
53	Japanese cherry	<i>Prunus serrulata</i>	Low	Branches are getting close to roof. Prune branches back. Careful of roots in grass. Watch out for lawnmower damage.



88	Blue atlas cedar	<i>Cedrus atlantica</i>	Low	Wound at base around 3 to 4 feet high. Someone has painted it black, which is not helpful. Tree has multi trunks at top but appear to be okay. Monitor health from wound every year.
89	Norway spruce	<i>Picea abies</i>	Low	Some root damage and sapsucker damage on trunk but overall appears healthy. Too dense to see structure at top of tree.
90	Deodar cedar	<i>Cedrus deodara</i>	Low	Broken branch and canopy and some multi-stem branching near middle of tree height but structure appears okay.
91	Giant sequoia	<i>Sequoiadendron giganteum</i>	Low	Low-risk but consider reducing northeast leader or long term cabling for structure.
92	Purple leaf plum	<i>Prunus cerasifera</i>	Low	Prune branches away from roof.
93	Norway spruce	<i>Picea abies</i>	Low	Some sapsucker damage but overall health seems okay.
94	Deodar cedar	<i>Cedrus deodara</i>	Low to moderate	Bifurcated at base with possible included bark. Consider cabling.
95	Blue atlas cedar	<i>Cedrus atlantica</i>	Low	Consider reducing some small rubbing competing leaders to improve long term structure.
96	Leyland cypress	<i>Cupressus × leylandii</i>	Moderate	Bifurcated at base with one trunk leaning towards house. Consider removal and replacing or cabling.
97	Blue atlas cedar	<i>Cedrus atlantica</i>	Low	Consider thinning out competing leaders for future structure.
98	European mountain ash	<i>Sorbus aucuparia</i>	Low	Some included bark but not a concern for now. Tree is small and mostly leaning away from any structure.
99	English Hawthorn	<i>Crataegus monogyna</i>	Low	Some included bark and a girdling roots at the base but low-risk. If it doesn't grow that tall it will stay low-risk. But consider reducing some competing leaders and monitor.



Zone 4:

These trees were located on the northern side of the property just south of the road. There were no buildings as targets. Consultant performed a Level 1 Tree Risk Assessment and slowly drove by the trees. Trees were all assessed as low-risk.

Figure 6: Zone 4 trees labeled in purple.





CONCLUSIONS & RECOMMENDATIONS

In conclusion, we recommend the following actions for trees on the Site (more details provided in *Table 5*):

- 1) Review tree tables (*Table 2*, *Table 3*, and *Table 4*) above for detailed notes and recommendations for trees assessed.
- 2) Prune 7 trees for end-weight reduction, thinning, to reduce rubbing and crossing branches, and/or to prune away from other trees.
- 3) Remove dead wood from 17 trees.
- 4) Prune 33 trees away from roofs or structures.
- 5) Remove soil from base of 3 trees.
- 6) Consider removal of 9 trees for risk or health.
- 7) Consider replacing 7 trees with a more suitable tree.
- 8) Monitor 5 trees.
- 9) Consider a more in-depth risk assessment with the micro resistance drill on 1 tree
- 10) Reduce competing leaders on 15 trees.
- 11) Control noxious weeds in and around 7 trees.
- 12) Control girdling roots or irrigation on 3 trees.
- 13) Observe and fix, if necessary, broken streetlight near 1 tree.
- 14) Consider cabling 4 trees.
- 15) Do not mow or weed whack over roots of 4 trees (do not mow over or weed whack any exposed roots, but these 4 were observed damaged from this activity).
- 16) Continue to retop/perform modified coppicing pruning on the corridor of trees by Tree 80 and one other tree.



Table 5 below shows the final tally of recommended actions of the assessed trees. It also references photos that show trees with examples for the different recommended actions.

Table 5: Recommended actions with which trees

Recommended Action	Total number of trees	Specific Tree Numbers	Reference Photo(s)
Prune, thin, reduce end weight, reduce rubbing and crossing branches, and prune away from other trees	7	14, 21, 24, 28, 35, 50, 60	Photo 1 and Photo 2
Remove dead wood	17	1,2, 3, 4, 6, 7, 11, 17, 19, 21, 22, 24, 25, 27, 30, 32, 90	Photo 3
Prune off roof or structure	33	36, 39, 42-47, 49-51, 53-55, 61, 62, 64, 65, 67-78, 82, 92	Photo 4
Unbury trunk	3	35, 36, 62	Photo 5
Consider removal due to risk or health	9	4, 5, 8, 10, 20, 33, 41, 57, 96	Photo 6
Consider removing and replacing with a more suitable tree	7	16, 23, 30, 39, 55, 66, 79	Photo 7
Monitor tree	5	31, 58, 87, 88, 99	Photo 8
Perform a more in-depth risk assessment with micro-resistance drill	1	56	Photo 9
Reduce competing leaders	15	3, 12, 29, 32, 36, 37, 38, 40, 41, 83, 84, 91, 95, 97, 99	Photo 10
Control noxious weeds in and around tree	7	15-19, 22, 24	Photo 11
Control girdling roots or irrigation around tree	3	14, 21, 48	Photo 12
Note broken streetlight near tree	1	2	Photo 13
Consider cabling	4	57, 91, 94, 96	Photo 14
Do not mow or weed whack over roots	4	52, 53, 63, 86	Photo 15
Continue to retop/perform modified coppicing pruning	2	80 (that entire corridor), 85	Photo 16 and Photo 17



CLOSING

Work for this project was performed and this report prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. No warranty, expressed or implied, is made. Neither the Consultants, nor Peninsula Environmental Group, Inc., has any current or prospective interest in the plants or properties discussed. Acceptance of this report acknowledges receipt and agreement with Peninsula Environmental Groups, Inc. attached Assumptions & Limiting Conditions.

Thank you for the opportunity to evaluate your project. We appreciate your business and look forward to working with you in the future. If you have questions now, or in the future, do not hesitate to contact us.

As always, during *extreme* weather events, we recommend staying away from large trees, whether healthy or not. Even healthy trees that have a low potential for failure under normal conditions, could fail if their load limits are surpassed.

ascaRCA
Registered Consulting Arborist®



Jessica Mullin | Consulting Arborist

Certified Arborist® #WE-12226A

Tree Risk Assessment Qualified® | Registered Consulting Arborist #765

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General Assumptions & Limitations

1. Any legal description provided to Consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. Consultant assumes no responsibility for verification of ownership or locations of property lines, or for results of any actions or recommendations based on inaccurate information. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes or other governmental regulations, unless explicitly stated otherwise.
2. Consultant assumes no responsibilities for legal matters in character. Consultant assumes all property appraised or evaluated is free and clear and is under responsible ownership and competent management.
3. Any evaluation or assessment carried out was restricted to the property and the plants or landscapes within the Scope of Assignment. No assessment of any other plants or landscapes has been undertaken by Consultant. The conclusions of this report do not apply to any zones, landscapes, trees, plants, or any other property not explicitly covered in the Scope of Assignment.
4. The total monetary amount of all claims or causes of action the Client may have as against Consultant, including but not limited to claims for negligence, negligent misrepresentation, and breach of contract, shall be strictly limited to solely the total amount of fees paid by the Client to Consultant pursuant to the Agreement for Services as dated for which this Assignment was carried out. Further, under no circumstance may any claims be initiated or commenced by the Client against Consultant, or any of its directors, officers, employees, contractors, agents, or Assessors, in contract or in tort, more than 12 months after the date of this Assignment.
5. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.
6. Consultant shall not be required to testify or attend court due to any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services as described in a Consulting Arborist Agreement.
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13. This report is based on the condition of the trees, landscape, or plants at the time of inspection.
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APPENDIX A: GLOSSARY

Bifurcated- dividing into two stems or trunks.

Cabling- use of cables between limbs or leaders to limit movement and thereby stabilize an established tree growing in a manner that isn't sustainable if left uncorrected.

Dominant leader/trunk/stem- the stem that grows much larger than all other stems and branches.

Girdling- girdling can constrict the vascular tissue, inhibit growth, inhibit the movement of water and photosynthesis, and can eventually kill a branch or tree if it is not addressed in time.

Included bark- ingrown bark that weakens the branch union.

Micro resistance drill- using a very fine drill (1.2-millimeters wide and 500 long) made of high-quality steel, we drill into the trunk of a tree to test resistance. The resistance tells us the structural conditions of cell walls (have these walls broken down and decayed or are they structurally sound?), the variation between early and late wood in the annual growth rings (what season did the tree grow the most?), and the tree's response to environmental factors like drought and excess rain.

Over buried trunk- an over buried trunk, or root collar burial predisposes trees to a variety of health problems. Root collars with damaged bark are more susceptible to infection and disease. (See *Photo 5*)

Phototropism- growth of a tree towards the light.

Proper pruning cuts- there are multiple proper pruning cuts, but for this report we look at branch removal cuts-a pruning cut that removed the smaller of two branches at a union, or parent stem. Removal cuts retain the branch bark ridge or branch collar and do not create a stub.

Sap sucker damage- without other stresses, sapsucker holes alone often do not cause much damage to a tree. However, holes made by the sapsucker can provide points of entry for wood-decaying fungi and bacteria. The physical damage may weaken trees or shrubs, making them more susceptible to secondary diseases and insects.

Stub cuts- pruning cuts made too far outside the branch bark ridge or branch collar, that leave branch tissue attached to the stem. Stub cuts leave a stub of branch that doesn't allow the tree to seal off disease.



APPENDIX B: PHOTOS

Photo 1: Prune Douglas-fir (Tree 14) branches away from cherry tree (Tree 13).





Photo 2: Prune Douglas-fir (Tree 24) for end-weight reduction.





Photo 3: Tree 1 with dead wood to remove.





Photo 4: Prune away from roof and structures (Tree 43).





Photo 5: Unbury trunk (Tree 36).





Photo 6: Consider removal due to health or risk (Tree 4).





Photo 7: Consider removal and replacing with more suitable tree (Tree 55).

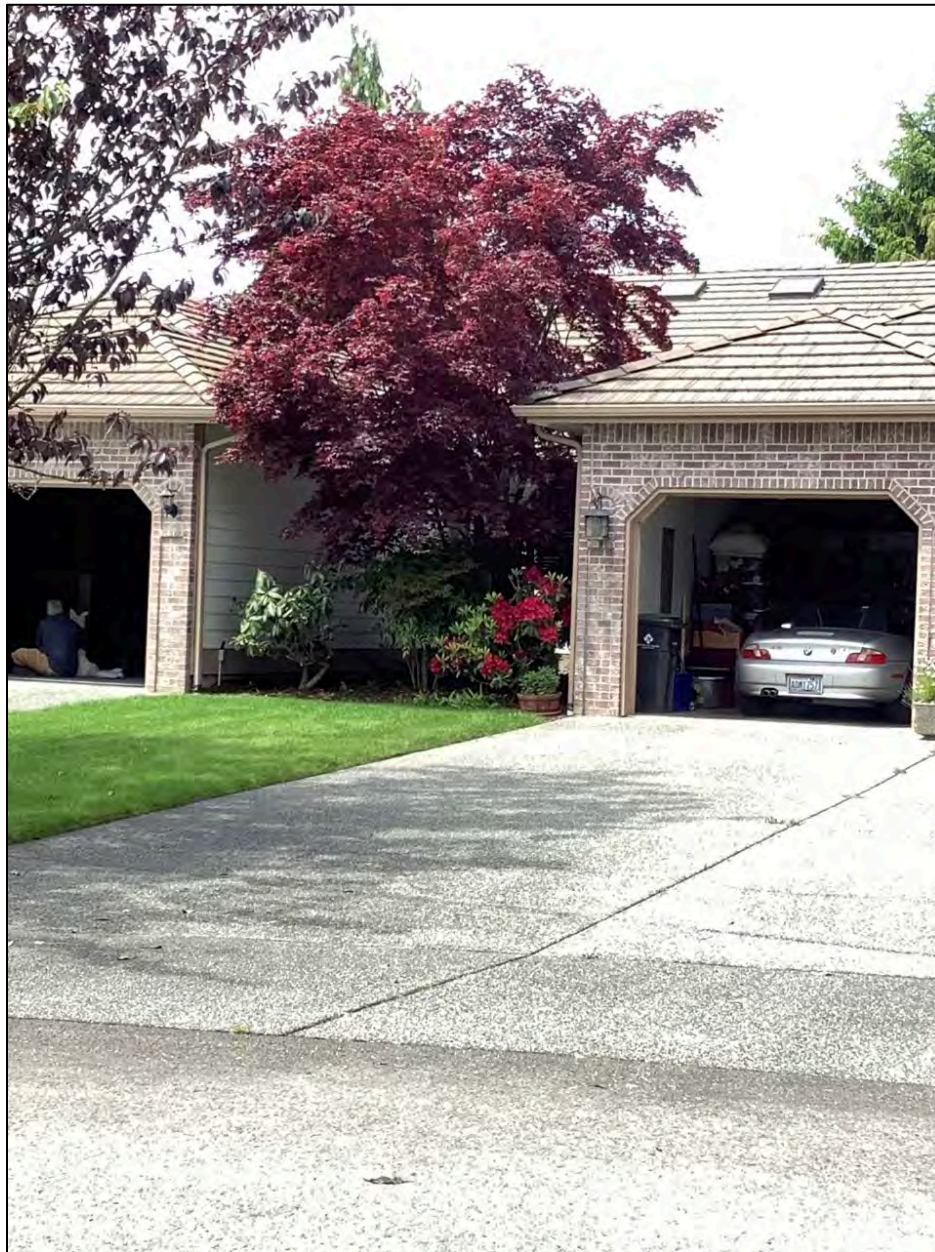




Photo 8: This tree (Tree 58) has an excessive amount of sap running down the trunk. Continue to monitor for signs of stress.





*Photo 9: Perform a more in-depth risk assessment with micro-resistance drill (also consider removing).
Tree 56.*





Photo 10: Reduce competing leaders (Tree 97).





Photo 11: Control noxious weeds around tree (Tree 16).





Photo 12: Tree 14 with girdling irrigation around trunk.





Photo 13: Note broken streetlight near Tree 2 (circled in red).





Photo 14: Consider cabling (Tree 57).





Photo 15: Do not mow or weed whack over roots in grass (Tree 57).





Photo 16: Continue to retop/perform modified coppicing pruning to previously topped trees (this is in corridor with Tree 80).





Photo 17: Continue to retop previously topped trees.





APPENDIX C: TREE RISK EVALUATION METHODOLOGY

Tree risk assessment methods used on this project were developed by the International Society of Arboriculture in 2013. The Tree Risk Assessment Manual authored by Dr. Julian Dunster and published by the ISA is the standard for qualifying and managing tree risk. This systematic approach to tree risk incorporates *likelihood of failure*, *likelihood of impact* and *consequence of failure* to measure the tree risk of specific targets. See Table 1 for details. The ANSI standard for risk assessment and ISA's Best Management Practices: Tree Risk Assessment defines three levels of tree risk assessment.

Level 1: Limited visual

Level 2: Basic

Level 3: Advanced

Level 1 is a tree analysis from a single perspective taken from a vehicle, while walking, aerially, or other mode of limited eyesight. Level 1 is used to ascertain high-priority, conspicuous tree features and defects, rapidly from a large population of trees. Street trees and other municipally owned trees are often prioritized with a Level 1 assessment. Level 2 involves a full spectrum visual evaluation of an individual tree. The perspective includes 360° of the trees, and with an adequate level canopy assessment from the ground. Level 2 allows the tree assessor to identify conspicuous and some inconspicuous features, defects, conditions, diseases, and pests on a tree. Tree health, structure, form, compensatory growth, and external influences are outlined in Level 2. Level 3 can be used when tree features/defects/conditions cannot be determined by other assessments. Level 3 includes aerial inspections, resistance-drill tests, sonic-tomography, UAVs, LIDAR and more.

Tree risk exposure is measured through targets. A target must be present for the presence of risk. Targets may include houses, vehicles, driveways, utility wires, infrastructure, other plants, and environmentally critical areas. Using the Matrix 1 and 2, we identify a likelihood of tree part failure. This can be root, trunk, branch, or twig failure. We then evaluate the likelihood of this failure impacting a predetermined target. Finally, we evaluate the consequences of failure shall a tree part both fail and impact a target.

Some options for mitigation of tree risk include:

Acceptance of risk: All vegetation comes with some inherit risk. Most often this risk is tolerable and will have no significant effects on risk potential. Normally, tree benefits far outweigh associated risks.

Retain and monitor for changes: When a tree has some level of potential risk but not enough to warrant a more extensive mitigation. Most retain and monitor plans recommend a return timeframe of 1-10 years.

Move offending target from damage radius: If target is not fixed, this can be the simplest of mitigation techniques.

Modify probability of failure: This mitigation includes techniques like stress-load-reductions, propping, cabling, bracing and habitat conversions.

Full removal of tree risk: Full removal of offending tree or tree parts.

Limitations: The Science of Arboriculture cannot detect and predict with certainty tree failure or timing of tree failure. An "Act of God" is when a tree fails after tree owner due diligence and Standard of Care have been met. As always, during extreme weather events, we recommend staying away from large trees, whether healthy or not. Even healthy trees that have a low potential for failure under normal conditions, could fail if their load limits are surpassed.



Matrix 1. Likelihood of Failure and Impact (Dunstser, 2013)

	<i>Likelihood of Impacting Target</i>			
	Very Low	Low	Medium	High
<i>Imminent</i>	Unlikely	Unlikely	Likely	Very likely
<i>Probable</i>	Unlikely	Unlikely	Somewhat likely	Likely
<i>Possible</i>	Unlikely	Unlikely	Unlikely	Somewhat likely
<i>Improbable</i>	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk Rating

<i>Likelihood of Failure and Impact</i>	<i>Consequences of Failure</i>			
	Negligible	Minor	Significant	Severe
<i>Very likely</i>	Low	Moderate	High	Extreme
<i>Likely</i>	Low	Moderate	High	High
<i>Somewhat likely</i>	Low	Low	Moderate	Moderate
<i>Unlikely</i>	Low	Low	Low	Low

Roles and Responsibilities of Tree Risk:

The proper roles of Tree Risk Assessors (Certified Arborists with additional training and qualification as a Qualified Tree Risk Assessor) and Tree Risk Managers (owners of trees) are very different. These roles are clearly delineated in two publications which are generally accepted guidelines for tree risk assessment in the arboricultural industry, Tree Care Industry Association (2011) and Smiley et al. (2011).

The Tree Risk Assessor’s role includes the following responsibilities, as defined in a scope of work or project assignment:

Evaluate and classify the likelihood of a tree failure impacting a target, evaluate the potential consequences of a tree failure, record and explain findings to the client, determine tree risk, and provide options for treatment to mitigate risk.

Responsibilities of Tree Risk Managers (tree owner or controlling authority) may include the following:

Meet a duty of care, determine the scope of work, specify the desired level of assessment, choose among risk mitigation options, decide the level of acceptable risk, and, prioritize work.

References:

Dunster, J., Smiley, E. T., Matheny, N., and Lilly S. 2013. Tree Risk Assessment Manual. Champaign, Illinois: International Society of Arboriculture.

Smiley, E. T., N. Matheny, and S.J. Lilly. 2011. Best Management Practices: Tree Risk Assessment. International Society of Arboriculture, Champaign, IL. 81 pp.

Tree Care Industry Association. 2011. American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Tree Risk Assessment a. Tree Structure Assessment) (A300, Part 9) Tree Care Industry Association, Manchester, NH. 14pp.



APPENDIX D: PRUNING METHODS

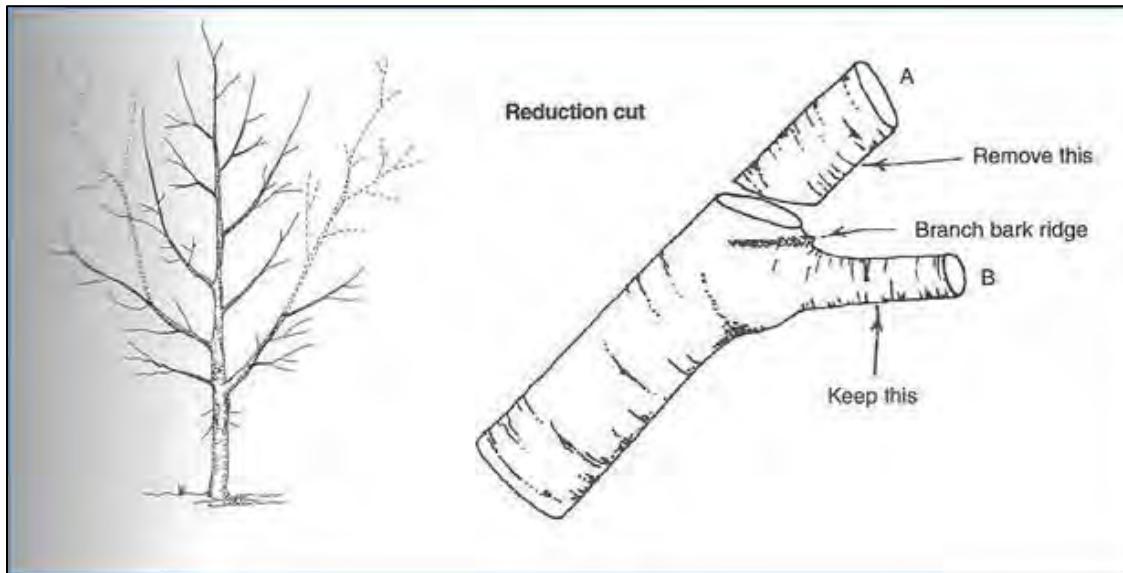
Pruning methods – Canopy Reductions:

Tree topping is frequently misused as a method of tree management. Tree-topping substantially reduces the longevity of trees and may cause the development of tree-related hazards through tree branch failure, internal structural damage to the trunk and reduced root vigor.

Proper tree height reduction is achieved through specified arboricultural pruning technique called *canopy reduction* pruning of dominant stems. Canopy reduction pruning is the selective removal of branches and stems to decrease the height and/or spread of a tree or shrub, preferably of a deliquescent or branching, non-excurrent (most coniferous) tree(s). Canopy reductions are not generally performed on coniferous trees, instead it is a method of managing height on branching trees.

Tree care professionals, such as ISA Certified Arborists, will make proper pruning cuts, such as those illustrated in Figure 6, to ensure the continued health, structural soundness, and stability of the tree.

Figure 7: Canopy reductions





Coppicing and Modified Coppicing

Many deciduous trees, such as bigleaf maple, are regenerative and will re-sprout from the base after being cut down, a practice known as coppicing. Coppicing is a traditional forestry method for producing firewood or pliable shoots for other uses such as bent twig furniture. Well-managed trees may be coppiced for decades on a 3 to 5-year rotation. Coppicing is normally performed by cutting and re-cutting stump sprouts at a height of 18 to 24 inches. At time of pruning, sprouts or branches pruned in this fashion should be no larger than 6 inches in diameter.

When managing branches larger than 6-inches in diameter, either prune the branch where it becomes less than 6-inches diameter, or fully remove the tree (or convert to wildlife snag). This pruning may occur at any height, at which time it should be called modified coppicing rather than coppicing. The consideration here is branches pruned larger than this threshold will likely die, which significantly reduces the overall functionality of the coppiced tree.

A coppiced tree should be repruned every 3 to 5 years. An unmanaged tree that has been initially coppiced has a high risk of stump sprouts breaking off at the base as they grow large enough to exert pressure on each other. Allowing the tree to continue to grow unmanaged (uncoppiced) increases risk of those stump sprouts/branches breaking off at their base.

Figure 8: Modified Coppicing



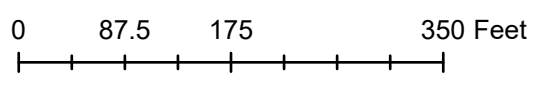


APPENDIX D: FINAL PRINTABLE MAP



Maxar, Microsoft

- Legend**
- Tree locations
 - Management Zones**
 - Zone 1
 - Zone 2
 - Zone 3
 - Zone 4



Sunland North HOA Tree Risk Assessment Site Map

Description: Management Zones 1 through 4 with labeled tree locations.

Prepared for: Sunland North HOA

Date: July 2022