# **ARBORIST REPORT**

#### PROJECT:

#### North Rd Development

SITE ADDRESS:

#### 718 North Rd. Gibsons, BC

CLIENT:

CityState Consulting Group 200 – 2414 St. Johns St. Port Moody, BC

#### PREPARED BY:

#### BEECHWOOD LANDSCAPE SERVICES 260 Pym Street Parksville, B.C. V9P 1G7 Phone 604.614.3517 Email: austin@beechwoodconsultingarborists.ca

#### PROJECT ARBORIST

AUSTIN PETERSON ISA Certified Arborist PN 1570A ISA Tree Risk Assessment Qualified

November 29, 2023

# <u>Background</u>

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Beechwood Landscape Services was contacted by CityState Consulting Group to prepare an Arborist Report and Tree Plan for the property at 718 North Rd. Gibsons, BC.

#### <u>Assignment</u>

Beechwood Landscape Services have been retained by the client to perform an on-site groundbased Level 1 visual assessment of trees located on the subject properties. Assessment and preparation of a written report detailing health & condition of onsite trees, straddling and or offsite trees suitable for submission to the Town of Gibsons.

#### Limitations of the Assignment

The project arborist's observations were limited to site visits on September 01, 2023. No tissue or soil samples were sent to a lab for identification or analysis.

This report is valid for the day the trees were reviewed. This report is not to be re-printed, copied, published or distributed without prior approval by Beechwood Landscape Services.

Sketches, diagrams and photographs contained in this report being intended as visual aids, should not be construed as engineering reports or legal surveys.

Only the subject trees were inspected and no others. This report does not imply or in any other way infer that other trees on this site or near this site are sound and healthy.

The tendency of trees or parts of trees to fall due to environmental conditions and internal problems are unpredictable. Defects are often hidden within the tree or underground. The project arborist has endeavored to use his skill, education and judgment to assess the species, size, and distribution of the live on-site trees with reasonable methods and detail.

#### Testing and Analysis

The Project Arborist used a tree mensuration tool (DBH tape) and visual assessment to inventory the species, sizes, and distribution of the on-site trees.

#### Purpose and Use of Report

The purpose of this report is to assist the property owner to attain compliance with the jurisdiction's tree protection bylaw requirements as relate to the development application.

#### Site Conditions and Description

The subject property at 718 North Rd, is located in the Creekside/Hillcrest Neighbourhood.

The vegetation on site is composed of native conifers ornamental landscape trees and shrubs associated with the existing residences.

There are no stream/watercourse associated with this property. The arborist did not find visual evidence of raptors nests, osprey nests or heron colonies on the site.

## Site Location



**Fig. 1** – Subject property at 718 North Rd. Source: SCRD Maps

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**Fig. 2** – Subject property at 718 North Rd. Source: SCRD Maps

#### Proposed Development

The client is proposing the creation of a mid-rise, mixed-use building(s).

#### **Tree Preservation Summary**

All the trees identified in the report and within the Tree Assessment Data table have been assessed based on their current condition at time of the site review.

As no trees will be removed as part of this development application the following information is provided for reference purposes only.

Long-term tree preservation success is dependent on minimizing the impact caused during preconstruction clearing operations, construction, and post construction activities. Ongoing monitoring of any offsite trees with a drip line extending over the project site is essential for protection of these trees including maintaining tree protection barriers at the drip line.

Arborist presence would be required for any excavation or other site disturbances that would occur on the subject development site where an off-site tree drip line extends over development site.

Tree removal and site clearing operations need to be undertaken by a qualified professional tree faller or in conjunction with the use of land clearing equipment with all parties involved having a full understanding and agreement of the tree retention/ protection protocols being utilized to prevent impact to any retained or off-site trees.

Arborist presence will be required for all construction activities that are occurring within 1 meter of a tree protection zone. The project arborist will assess impacts of proposed construction activities and provide recommendations as required for mitigating impacts on the retained trees. The findings and recommendations will be documented in a field report for submission to the Owner, Contractor and City as required.

#### Tree Protection Plan

Trees identified in this report and on the Tree Protection Plan are assessed for retention or removal based on the proposed development. Both documents are required for proper identification of trees in the field prior to proceeding with any approved tree removals.

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#### **Tree Protection – Best Practices**

#### General Notes

• Prior to the commencement of any site activity such as site alteration, demolition or construction, the tree protection measures specified in this report and on the Tree Protection Plan must be undertaken to the satisfaction of the Consulting Arborist.

• Once all tree/site protection measures have been installed, the Consulting Arborist must be contacted to arrange for an inspection of the site and approval of the tree/site protection requirements.

• Tree protection barriers must remain in place and in good condition during demolition, construction and/or site disturbance, including landscaping, and must not be altered, moved or removed until authorized by the Consulting Arborist.

• No construction activities including grade changes, surface treatments or excavation of any kind are permitted within the area identified on the Tree Protection Plan or Site Plan as a minimum tree protection zone (TPZ). No root cutting is permitted. No storage of materials or fill is permitted within the TPZ. No movement or storage of vehicles or equipment is permitted within the TPZ. The area(s) identified as a TPZ must be always protected and remain undisturbed.

• If the minimum tree protection zone (TPZ) must be reduced to facilitate construction access, the tree protection barriers must be maintained at a lesser distance and the exposed portion of TPZ must be protected using a horizontal root protection method approved by the Consulting Arborist

• Any roots or branches which require pruning, as approved by the Consulting Arborist, must be undertaken by an arborist. All pruning of tree roots and branches must be in accordance with good arboricultural practice.

Roots that have received approval from the Consulting Arborist to be pruned must first be exposed using pneumatic (air) excavation, by hand digging or by a using low pressure hydraulic (water) excavation. The water pressure for hydraulic excavation must be low enough that root bark is not damaged or removed. This will allow a proper pruning cut and minimize tearing of the roots. The arborist retained to carry out crown or root pruning must contact the Consulting Arborist no less than three working days prior to conducting any specified work.

#### Prohibited Activities Within a TPZ

Except where authorized by the Consulting Arborist, any activity which could result in injury or destruction of a protected tree or alteration of grade is prohibited within a TPZ, including, but not limited to, any of the following examples:

• Demolition, construction, replacement or alteration of permanent or temporary buildings or structures, parking pads, driveways, sidewalks, walkways, paths.

• Altering grade by adding or removing soil or fill, excavating, trenching, topsoil or fill scraping, compacting soil or fill, dumping or disturbance of any kind.

• Storage of construction materials, equipment, wood, branches, leaves, soil or fill, construction waste or debris of any sort.

• Application, discharge or disposal of any substance or chemical that may adversely affect the health of a tree.

• Cutting, breaking, tearing, crushing, exposing or stripping tree's roots, trunk and branches.

• Nailing or stapling into a tree, including attachment of fences, electrical wires or signs, stringing of cables or installing lights on trees.

· Soil remediation, removal of contaminated fill.

• The above mentioned prohibitions are for area(s) designated as a TPZ. If possible, these prohibitions should also be implemented outside the TPZ in areas where tree roots are located. The roots of a tree can extend from the trunk to approximately 2-3 times the distance of the dripline.

#### Tree Replacement Requirements

In accordance with Tree Preservation Bylaw No.1282, 2020

5.2.2 For all other Lots, as a condition of permit issuance under this Bylaw, the Owner shall plant and maintain two (2) Replacement Trees for each Protected Tree Cut or Removed on the subject Lot in accordance with the requirements of Schedule "D."

DBH of Tree Cut or Removed	Coniferous Replacement Trees	Deciduous Replacement Trees
Up to 30 cm	2 x 2 = 4	1 x 2 = 2
30 – 60 cm	10 x 2 = 20	
60 cm +	18 x 2 = 36	

#### Tree Assessment Data

Tag	Tree Species	DBH	Dripline	CRZ	Comments	Retain/
#		(cm)	(m)	(m)		Remove
26	Douglas Fir Pseudotsuga menziesii	72	5	5	Fair form and condition. Open grown tree. Located within proposed development footprint.	Remove
27	Western Red Cedar Thuja plicata	73/75	7	7	Fair form and condition. Open grown tree. Die back throughout upper crown, Co-dominant tree growing as part of a group Located within proposed development footprint.	Remove
28	Western Red Cedar Thuja plicata	96	8	8	Fair form and poor condition. Moderate dieback in upper crown of tree. Located within proposed development footprint.	Remove
46	Western Red Cedar Thuja plicata	83	7	7	Fair form, poor condition due to significant die back in upper crown of tree. Located within proposed development footprint.	Remove
47	Western Red Cedar Thuja plicata	91	8	8	Fair form, poor condition due to significant die back in crown. Located within proposed development footprint.	Remove
48	Western Red Cedar Thuja plicata	81	5	5	<b>Off site tree</b> ,located very close to P/L. Growing as part of a grouping of trees. Fair form and condition. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by proposed development activity. Attain permission from tree Owner to remove tree.	Remove
49	Douglas Fir Pseudotsuga menziesii	91	7	7	<b>Off site tree</b> ,located close to P/L. Growing as part of a grouping of trees. Fair form and condition. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by proposed development activity. Attain permission from tree Owner to remove tree.	Remove
50	Western Red Cedar Thuja plicata	84	7	7	Fair form and condition. Dead spire among the co-domint tops. Growing as part of a grouping of trees. Located within proposed development footprint.	Remove
51	Western Red Cedar Thuja plicata	94	7	7	Fair form and condition. Multiple naturally occuring tops. Growing as part of a grouping of trees. Located within proposed development footprint.	Remove
52	Western Red Cedar Thuja plicata	77	5	5	Poor form and condition. Dead top, sparce foliage in upper canopy, Growing as part of a grouping of trees. Located within proposed development footprint.	Remove

Tag	Tree Species	DBH	Dripline	CRZ	Comments	Retain/
# 53	Western Red Cedar Thuja plicata	99	(m) 7	(m) 7	Fair form and condition. Open narrow cavity in tree trunk. Growing as part of a grouping of trees. Located within proposed development footprint.	Remove
54	Western Red Cedar Thuja plicata	88	7	7	Fair form and condition. Growing as part of a grouping of trees. Located within proposed development footprint.	Remove
55	Western Red Cedar Thuja plicata	94/60	7	7	<b>Off site tree</b> , located close to P/L. Fair form and condition. Dead top. Growing as part of a grouping of trees. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by proposed development activity. Attain permission from tree Owner to remove tree.	Remove
56	Bigleaf Maple Acer macrophyllum	62	11	11	<b>Off site tree</b> , located close to P/L. Fair form and condition. Growing as part of a grouping of trees. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by proposed development activity. Attain permission from tree Owner to remove tree.	Remove
57	Flowering Cherry Prunus (spp.)	28/24/27	5	5	<b>Off site tree</b> , located close to P/L. Poor form and condition. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by proposed development activity. Attain permission from tree Owner to remove tree.	Remove
58	Western Red Cedar Thuja plicata	84	5	5	Off site tree, located close to P/L. Fair form and condition. Co- dominant trunks at 3m hieght. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by proposed development activity. Attain permission from tree Owner to remove tree.	Remove
59	Flowering Cherry Prunus (spp.)	43/44/42	7	7	<b>Off site tree</b> , located close to P/L. Poor form and condition. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by proposed development activity. Attain permission from tree Owner to remove tree.	Remove
60	Douglas Fir Pseudotsuga menziesii	61	5	5	<b>Off site tree</b> , located close to P/L. Fair form and condition. Critical Root Zone of tree located within proposed development footprint. Tree health and safety will be compromised by	Remove

Tag	Tree Species	DBH (om)	Dripline	CRZ	Comments	Retain/
#		(cm)	(11)	(11)	proposed development activity. Attain permission from tree	Remove
					Owner to remove tree	
61	Western Red Cedar	80	6	6	Fair form and condition	Pomovo
01	Thuia plicata	09	0	0	Located within proposed development footprint	Keniove
62	Dogwood -	10/17	1	1	Eair form and condition	Remove
02	Corpus (spp.)	13/14	-	-	Located within proposed development footprint	Remove
63	Douglas Fir	45	5	5	Eair form and condition	Remove
00	Pseudotsuga menziesii		5	5	Located within proposed development footprint	Remove
64	Western Red Cedar	96	5	5	Poor form and fair condition. Missing top	Remove
04	Thuia plicata		Ŭ	Ŭ	Located within proposed development footprint	Remove
65	Western Red Cedar	90	5	5	Eair form and condition	Remove
00	Thuia plicata	00	Ű	Ŭ	Located within proposed development footprint.	Romovo
66	Western Red Cedar	51	4	4	Fair form and condition.	Remove
	Thuia plicata				Located within proposed development footprint.	
67	Western Red Cedar	64	5	5	Fair form and condition.	Remove
	Thuia plicata		-	-	Located within proposed development footprint.	
68	Western Red Cedar	74	5	5	Fair form and condition.	Remove
	Thuja plicata		_		Located within proposed development footprint.	
69	Western Red Cedar	86	7	7	Fair form and condition.	Remove
	Thuja plicata				Located within proposed development footprint.	
70	Douglas Fir	39	5	5	Fair form and condition.	Remove
	Pseudotsuga menziesii				Located within proposed development footprint.	
71	Douglas Fir	98	7	7	Fair form and condition. Significant ivy presence on tree trunk.	Remove
	Pseudotsuga menziesii				Located within proposed development footprint.	
72	Douglas Fir	44/41	6	6	Fair form and condition. Co- dominant trunk.	Remove
	Pseudotsuga menziesii				Located within proposed development footprint.	
73	Douglas Fir	54	6	6	Fair form and condition.	Remove
	Pseudotsuga menziesii				Located within proposed development footprint.	
74	Douglas Fir	23	4	4	Fair form and condition.	Remove
	Pseudotsuga menziesii				Located within proposed development footprint.	
75	Douglas Fir	39	5	5	Fair form and condition.	Remove
	Pseudotsuga menziesii				Located within proposed development footprint.	
76	Western Hemlock	23	3	3	Off site tree. Fair form and condition.	Remove
	Tsuga heterophylla				Critical Root Zone of tree located within proposed development	
					footprint. Tree health and safety will be compromised by	
					proposed development activity. Attain permission from tree	
					Owner to remove tree.	

Tag #	Tree Species	DBH (cm)	Dripline	CRZ	Comments	Retain/
# 77		22		(11)	Fair form and condition	Remove
	Psoudotsuga monziesii	22	4	4	Located within proposed development footprint	Keniove
78	Zebrina Cedar	38	3	3	Eair form and condition	Remove
10	Thuia plicata Zebrina	50	5	5	Located within proposed development footprint	Remove
79	Norway Spruce –	44	3	3	Off site tree Fair form and condition	Remove
15	Picea abies		5	5	Critical Root Zone of tree located within proposed development	Remove
					footprint. Tree health and safety will be compromised by	
					proposed development activity. Attain permission from tree	
					Owner to remove tree	
80	Zebrina Cedar	36	3	3	Tree forms part of a row. Fair form and condition.	Remove
	Thuia plicata Zebrina		Ū	Ŭ	Located within proposed development footprint.	i tomovo
81	Zebrina Cedar	36	3	3	Tree forms part of a row. Fair form and condition.	Remove
_	Thuja plicata Zebrina			_	Located within proposed development footprint.	
82	Zebrina Cedar	35	3	3	Tree forms part of a row. Fair form and condition.	Remove
_	Thuja plicata Zebrina			_	Located within proposed development footprint.	
83	Zebrina Cedar	34	3	3	Tree forms part of a row. Fair form and condition.	Remove
	Thuja plicata Zebrina				Located within proposed development footprint.	
84	Fruiting Apple –	35	3	3	Off site tree. Poor form and condition.	Remove
	Malus (spp.)				Critical Root Zone of tree located within proposed development	
					footprint. Tree health and safety will be compromised by	
					proposed development activity. Attain permission from tree	
					Owner to remove tree.	
85	Japanese Maple –	10/11/9	4	4	Off site tree. Fair form and condition.	Remove
	Acer palmatum	11/8			Critical Root Zone of tree located within proposed development	
					footprint. Tree health and safety will be compromised by	
					proposed development activity. Attain permission from tree	
					Owner to remove tree.	

#### **Tree Protection Plan**



### <u>Photos</u>



Photo 1 – Large Cedar trees, looking east from entrance to property.



Photo 2 – Looking north across vacant lot



Photo 3 – Trees #28 & #46 with die back in upper crown.



Photo 4 – Cedar trees (Trees #69 to #64) showing signs of upper canopy die back from drought stress.



Photo 5 - Row of Zebrina Cedars (Trees #77 - #83) behind existing concrete building

#### **Tree Protection Detail**



#### APPENDIX A: GLOSSARY OF KEY TERMS

**Abutment:** A structure built to support the lateral pressure of an arch or span, e.g., at the ends of a bridge.

Adapted Trunk Diameter Method: This method uses the trees age and tolerance to construction damage to determine the factor that will be multiplied by the diameter to provide a sufficient tree protection zone given these factors.

Age: The relative age (young, intermediate, mature) within the particular stand of trees or forest.

**Algae:** Is a simple, nonflowering plant (includes seaweeds and many single-celled forms). They do contain chlorophyll (but lack true stems, roots, and vascular tissue)

ALR: The Agricultural Land Reserve in which agriculture is recognized as the priority.

Bole: The stem or trunk of a tree.

Chlorotic: Yellowing of plant tissues caused by nutrient deficiency &/or pathogen.

**Co-dominant Leaders:** Forked dominant stems nearly the same size in diameter, arising from a common junction.

**Co-dominant Within Stand:** Individual tree whose height is generally equal to trees (regardless of species) within the same stand.

**Compaction:** Compression of the soil that breaks down soil aggregates and reduces soil volume and total pore space, especially macropore space.

**Conk:** A fungal fruiting structure typically found on trunks and indicating internal decay.

Dead Standing: A tree that has died but is still standing erect.

**DBH:** The Diameter of the tree at 1.40 meters above the ground.

**Dominant Within Stand:** Individual tree whose height is significantly greater than adjacent trees (regardless of species) within the same stand.

**C-rad:** Crown radius, is the dripline measured from the edge of the trunk to the outermost branches of the crown.

**CRZ:** Critical Root Zone - The area between the trunk and to the end of the Drip Line.

Fair: Healthy but has some defects such as co-dominant trunk, dead branches.

**Feeder Roots:** The smaller roots responsible for water and nutrient absorption and gas exchange. These roots can extend far beyond the Drip Line (or outer canopy) of the tree.

**Fungus (singular) / Fungi (plural):** Unicellular, multicellular or syncytial spore-producing organisms that feed on organic matter (including molds, yeast, mushrooms and toadstools)

**Girdling Root:** Root that encircles all or part of the trunk of a tree or other roots and constricts the vascular tissue and inhibits secondary growth and the movement of water.

**Good:** Good form and structure, healthy with no defects.

**Hand Plotted Tree:** a tree present on the site but has not been included in the tree survey by the B.C.L.S land surveyor. Consulting arborist notes location of identified on the tree survey plan other wise known as hand plotting.

**Hazardous:** Significant hazard exists with a high risk of immediate failure; which could result in serious damage to property or person(s).

**Height:** Height of tree is approximate.

**LCR:** Live Crown Ratio – The ratio of crown length to total tree length.

**Level 1 Limited Visual Assessment:** Limited visual assessment looking for obvious defects such as, but not limited to dead trees, large cavity openings, large dead or broken branches, fungal fruiting structures, large cracks, and severe leans.

**Level 2 Basic Visual Assessment:** Detailed visual inspection (aboveground roots, trunk, canopy) of tree(s) may include the use of simple tools to perform assessment (i.e. sounding mallet, trowel, measuring tape, binoculars). The assessment does not include advanced resistance drilling of trunk.

**Level 3 Advanced Assessment:** To provide detailed information about specific tree parts, defects, targets, or side conditions. May included aerial inspection, resistance drilling of tree parts, laboratory diagnosis of fungal or plant tissue.

**Mildew:** Is a minute powdery or web-like fungi (of different colours) that is found on diseased or decaying substances.

**No Disturbance Zone:** (Trunk Diameter x 6) + Trunk Radius + (60 cm excavation zone). For example, a 50-cm diameter tree would have a No Disturbance Zone = 3.85 meters measured from the edge of the trunk.

**Poor:** multiple defects, disease, poor structure and or form, root and or canopy damage.

**Phototropic:** Growth toward light source or stimulant.

Retain & Monitor: Monitor health and condition of tree every 12 months for signs of deterioration.

**Root Crown:** Also, called the root collar, it includes the flare at the base of the trunk and the initial roots that develop below the trunk. These roots generally taper and subdivide rapidly to form the root system of the tree.

**SPEA:** Streamside Protection and Enhancement Area

**Spiral Decline:** The health and condition of the tree is deteriorating.

**Sub-dominant Within Stand:** Individual tree whose height is significantly less than adjacent trees (regardless of species) within the same stand.

**Suppressed:** Individual tree whose growth, health and condition is negatively impacted by adjacent tree(s).

**TPZ:** Tree Protection Zone - The area between the trunk and the Tree Protection Barrier.

**Wildlife Tree:** A tree or a group of trees that are identified to be retained to provide future wildlife habitat. Wildlife habitat can exist in tree risks (cavities, dead snags, broken tops). Often times the tree risk to potential targets (people & property) is reduced by removing that part of the tree posing the risk of failure, but the tree (or portion of) is retained to provide future habitat.

**Witches Broom:** A dense mass of shoots growing from a single point, with the resulting structure resembling a broom or a bird's nest.

#### APPENDIX B – LIMITATIONS

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The tendency of trees or parts of trees to fall due to environmental conditions and internal problems are unpredictable. Defects are often hidden within the tree or underground. The project arborist has endeavored to use his skill, education and judgment to assess the potential for failure, with reasonable methods and detail. It is the owner's responsibility to maintain the trees and inspect the trees to reasonable standards and to carry out recommendations for mitigation suggested in this report.

#### APPENDIX C - REFERENCES

Bond, Jerry & Buchanan, Beth (2006) Best Management Practices: Tree Inventories, International Society of Arboriculture, Champaign, IL.

Dunster, Dr. Julian (2003) *Preliminary Species Profiles for Tree Failure Assessment*. ISA Pacific Northwest Chapter, Silverton, OR, USA

Dunster, Dr. Julian & Edmonds, Dr. R. (2014) Common Fungi Affecting Pacific Northwest Trees, ISA Pacific Northwest Chapter, Silverton, OR, USA

Fite, Kelby & Smiley, E. Thomas (2016) Best Management Practices: Managing Trees During Construction, International Society of Arboriculture, Champaign, IL.

Sibley, David Allen (2009) The Sibley Guide to Trees. Alfred A. Knopf, New York, NY

Smiley, E.T., Matheny, N., Lilly, S. (2011) Best Management Practises: Tree Risk Assessment. International Society of Arboriculture, Champaign, IL.