



Valley Environmental

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July 15, 2022

Development Service & Planning
Regional District of Okanagan-Similkameen
101 Martin Street 604-644-1998

**Re: Hazard Tree & Disease/Infestation Assessment at 4535 and 4545 Mill Road,
Adjacent to Okanagan Lake.**

To Whom it May Concern.

Valley Environmental (VE) was hired by Mr. Rene Doucette to conduct a hazard tree & disease assessment at the above noted properties. The hazard assessment follows the BC Ministry of Forests, Lands & Natural Resource Operations Wildlife/Danger Tree Assessor's Guidelines for Parks and Recreation Sites (2012).

A total of 9 adult trees were assessed within 30 meters of Okanagan Lake on June 11, 2022. Eight trees were located on the north bank of Okanagan Lake approximately 1-8 meters from the high water along the subject properties and one tree was located along Mill Road approximately 15 m from the lake. All 9 trees assessed were located within the property boundaries of both lots. Four of the nine species are Black Locust (*Robinia pseudoacacia*), two are Weeping Willows (*Salix babylonica*), one is a Ponderosa Pine (*Pinus Ponderosa*), one Pacific Willow (*Salix lasiandra var. lasiandra*) and one is a Maple (*Acer spp.*). Based on the shape of the leaf, the maple is likely a sugar maple (*Acer saccharum*), native to eastern Canada.

All four Black Locust trees appear to be in significant stress and are either dying, have numerous dead limbs or the leaves are wilted and there was no significant growth. VE estimates that the trees with partial growth will not likely survive the next two years. In addition, the Pine tree is also dead. It should be noted that Black Locust trees are considered invasive and the seeds, leaves and bark are all considered neurotoxins which are poisonous to humans, pets and livestock.

The Pacific Willow appears to have significant growth however, this tree has significant lean, has a significant stress fracture in its main stem (likely from the extensive lean) and has several large dead branches. The root mass was also lifting due to the extensive tree lean.

The two Weeping Willow trees and the maple appear to be healthy.

In determining if a tree is considered a hazard the assessor must look at what a tree may be a danger to or what potential exposure there is from a danger tree. All trees inspected are within the falling distance (1.5 x height of the tree) to the existing cabins on each

property as well as an amenity beach area and proposed new dock on 4535 as well as an existing dock at 4545 Mill Road. If any of these trees were to fall, it could damage the cabins, dock(s) or injure any residents that may be recreating on the dock or along the beach area.

There are a total of 12 possible defects that can cause a tree to be dangerous. Only 1 defect is required to classify a tree as dangerous. Furthermore, the level of exposure from a hazard tree creates a higher risk for permanent structures (proposed home and dock) and amenity spaces such as the beach area.

During the assessment VE noted several defects which would automatically classify some of these trees as a danger given their proximity to proposed permanent structures and amenity spaces. Some of the trees contained: dead limbs, stem damage, souging bark, tree lean/lifting root mass, fungal infection, split trunks or were entirely dead and in danger of immediately falling. Stem damage included fractures which can cause structural weakness of the entire tree.

Given the above VE has classified 6 trees as hazardous and should be removed prior to further use of the properties as an amenity space. The four Black Locust trees (trees 2, 3, 5 & 8) will need to be removed as they are dead or dying and could fall on cabins, the dock or residents using the amenity space. The Pine tree (tree 6) is also dead and should be removed. The Pacific Willow (tree 7) is in danger of splitting where it could fall on a proposed new dock, swimmers or the main stem could snap and fall back and injure residents within the amenity area.

The two weeping willows and the maple (tree 1, 4 & 9) currently appear healthy, do not have any defects, are not a hazard to the cabins and amenity space and should not be removed. However, these trees will need to be inspected on a regular basis (ex. annually).

VE understands that the removal of danger, infested or diseased trees within a riparian areas is exempt from a Watercourse Development Permit under the Electoral Area "E" Official Community Plan Bylaw No. 2458, 2008 Watercourse Development Permit Exemptions #6.

Following Best Management Practices, removal of trees within a riparian area should be replaced using the BC Tree Replacement Criteria (1996). Using a combined DBH for all 6 trees, the total recommended replacement would include several dozen local native trees. However, given the size of the two properties, there is limited room to add this number of trees with spacing to grow properly. As such, VE alternately recommends following the Provincial Riparian Restoration Guidelines (2008), replacing the disturbed area of the trees at a ratio of 1 plant / 1 m². VE calculated that a 40 m² area will be disturbed for the removal of the 6 trees. As such a total of 40 native plants, 4 native trees and 36 local native shrubs will replace the 6 trees.

All plant stock must be a minimum of 2 years old and planted within 15 meters of Okanagan Lake. All shrub plantings must be successful to 90% while all trees planted must survive the 3 years. If more than 10% of the shrubs die during each of the 3 years, replanting to maintain a 90% survival rate is required. VE strongly recommends that each of the plants is watered each summer at least twice a week for two years.

VE has been hired to monitor the survival rate of the plantings during the 3 years and provide a yearly follow up summary report to the client as well as the RDOS. VE understands that planting will occur either in the fall of 2022 or spring 2023. Monitoring could occur up until the spring/fall of 2026. Planting must occur no later than the fall of

2023. If the planting does not occur by the fall of 2023, a summary report will be filed with the RDOS until the planting is completed. The developer must provide a planting plan to VE for pre-approval that includes the proposed species and locations.

Future development of the properties will need to include the provincial riparian areas protection (RAPR) review as all of the properties are within the 30 meter riparian assessment area. Future development of the properties will require a Watercourse Development Permit (WDP) with the RDOS along with a provincially approved and registered RAPR report from a Qualified Environmental Professional (QEP).

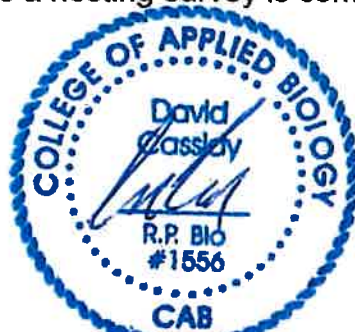
VE recommends the following local native tree species: Trembling Aspen (*Populus tremuloides*), Pacific willow (*Salix lucida ssp. Lasiantra*), Douglas maple (*Acer glabrum var. douglasii*), Douglas fir (*Pseudotsuga menziesii var. menziesii*), Ponderosa Pine (*Pinus Ponderosa*), Blue elderberry (*Sambucus cerulean*), Red elderberry (*Sambucus racemosa spp*), or Choke cherry (*Prunus virginiana var. demissa*).

Native shrubs may include but are not limited to: Oregon grape (*Mahonia aquifolium*), native rose (*Rosa spp*), snowberry (*Symphoricarpus alba*), blue elderberry (*Sambucus caerulea*), Sitka Mountain Ash (*Sorbus sitchensis*), Smooth sumac (*Rhus glabra*) and Oceanspray (*Holodiscus discolor*).

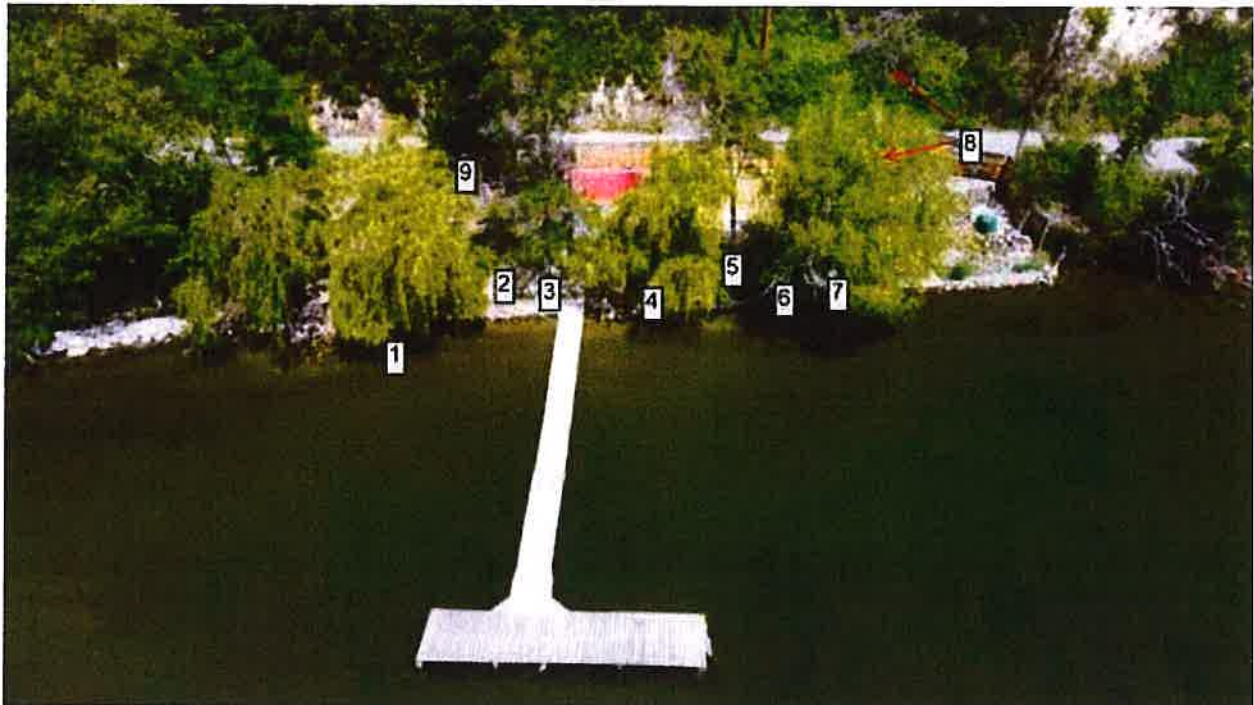
VE recommends the following best management practices when removing trees adjacent to streams and lakes and within riparian areas:

- Removal of the debris must be conducted by hand if all possible or by crane if tree sections are larger.
- Disturbance along the stream bank (surface soils etc.) must be minimized to prevent the removal or destruction of existing native shrubs and sedimentation of the stream bank.
- Damage to existing remaining trees will not occur.
- Work within the wetted perimeter and falling of branches and stems into the lake is not allowed.
- Use of a chainsaw within the wetted perimeter of the lake is not allowed as the chain saw oil may leak hydrocarbons into the creek causing environmental damage to aquatic life forms and fish.
- All machinery and equipment working adjacent to the stream and the stream bank must be in good working condition, clean and free of deleterious materials.

VE also conducted a nesting survey for each of the 6 trees and did not find any potential nests or nesting holes. As such, the property owners may remove the trees up to March 31, 2022, after which a new nesting survey will be required. No trees can be removed from April 1 to August 31 unless a nesting survey is completed by a QEP.



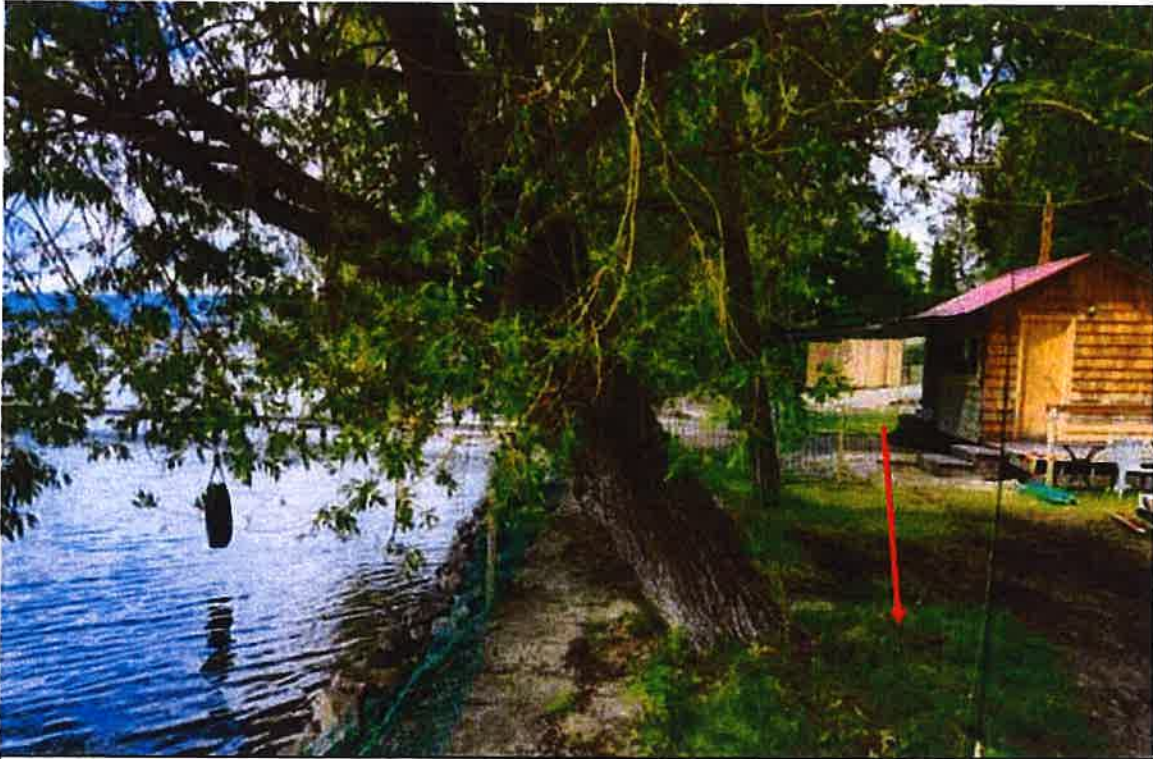
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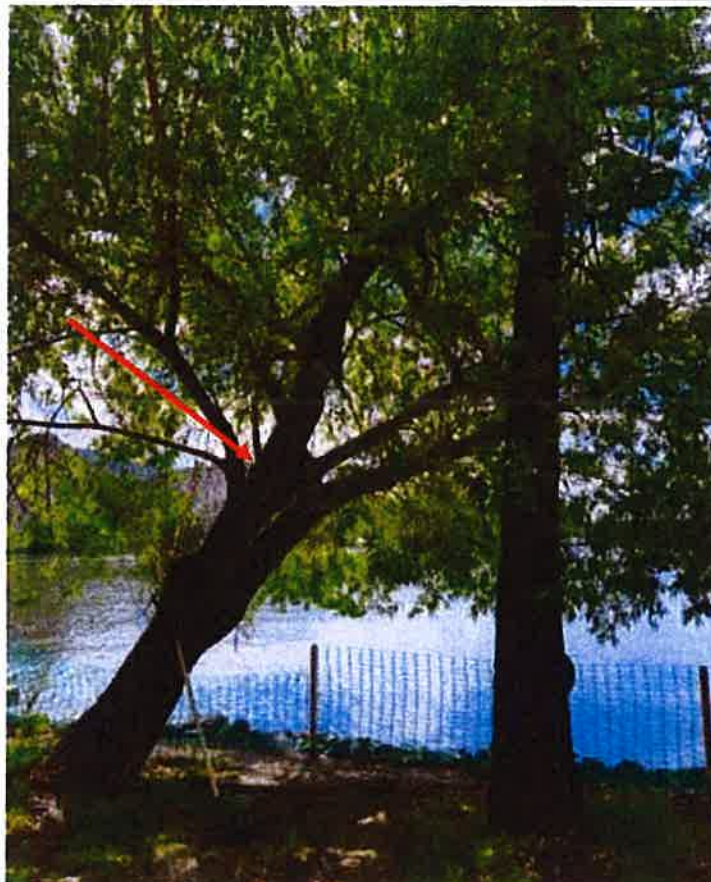
Pic 1 – June 11, 2022 – Drone view looking northward at the 4545 & 4535 Mill Road. Trees 1 – 4 & 9 are on 4545 Mill Rd and Trees 5-8 are on 4535 Mill Rd.



Pic 2 – June 11, 2022 – View looking at trees 2 & 3 which are Black Locust and need to be removed. Both of these trees are partially dead and have several large limbs that could fall on the existing cabin or dock area. Tree 1 on the far right is a weeping willow and is currently healthy.



Pic 3 – June 11, 2022 – View looking at the Pacific Willow on 4535 Mill Rd. The root wad on the base of the tree on the right is lifting due in part to the tree lean; several large roots are exposed. This tree is in danger of falling over from the tree lean alone. A large stress fracture was also observed (see photo below).




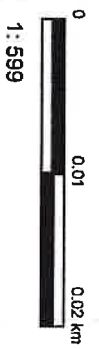
Pic 4 – June 11, 2022 – View looking at the dead pine (right) and the Pacific Willow (left). The willow has a large stress fracture in the main stem noted in the location of the red arrow.



Legend

 3 x trees to remain

 6 x trees to be removed



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Datum: NAD83
 Projection: WGS_1984_Web_Mercator_Auxiliary_Spheroid

Key Map of British Columbia

