# NOTICE OF MEETING AND AGENDA ENVIRONMENTAL ADVISORY COMMITTEE

**Wednesday, August 7, 2024, 9:00 AM**
**Village Office, 495 Hot Springs Road,**
**Harrison Hot Springs, BC V0M 1K0**

**THIS MEETING WILL BE CONDUCTED IN-PERSON AND VIA ZOOM VIDEO CONFERENCE**

| | |
|---|---|
| **1. CALL TO ORDER** | |
| Meeting called to order by Deputy Mayor Facio.<br>Acknowledgement of Sts'ailes traditional territory. | |
| **2. INTRODUCTION OF LATE ITEMS** | |
| | |
| **3. APPROVAL OF AGENDA** | |
| | |
| **4. ADOPTION OF MINUTES** | |
| (a) THAT the Environmental Advisory Committee Meeting minutes of July 10, 2024 be adopted. | **Page 1** |
| **5. ITEMS FOR DISCUSSION** | |
| (a) Tree Risk Assessment Report from Urban Environment Ltd. dated July 16, 2024 Re: Oak Trees on Lillooet Avenue | **Page 5** |
| **6. ADJOURNMENT** | |
| | |

Amanda Graham
Corporate Officer

**VILLAGE OF HARRISON HOT SPRINGS**
**MINUTES OF THE ENVIRONMENTAL ADVISORY COMMITTEE**

**DATE:** Wednesday, July 10, 2024
**TIME:** 9:00 a.m.
**PLACE:** Council Chambers, Village Office
495 Hot Springs Road, Harrison Hot Springs, BC

**IN ATTENDANCE:** Deputy Mayor Facio
Susan Galvao
Cheri Norris
Mark Schweinbenz
Gary Webster

Amanda Graham, Corporate Officer
Christy Ovens, Community Services Manager

**ABSENT:**

## 1. CALL TO ORDER

Deputy Mayor Facio called the meeting to order at 9:00 am.
Deputy Mayor Facio acknowledged the traditional territory of Sts'ailes.

## 2. INTRODUCTION OF LATE ITEMS

## 3. APPROVAL OF AGENDA

**Moved by Cheri Norris**
**Seconded by Susan Galvao**

THAT the agenda be approved.

**CARRIED**
**UNANIMOUSLY**
*EAC-2024-07-01*

## 4. ADOPTION OF MINUTES

**Moved by Mark Schweinbenz**
**Seconded by Cheri Norris**

THAT the Environmental Advisory Committee Meeting minutes of June 26, 2024 be adopted.

**CARRIED**
**UNANIMOUSLY**
*EAC-2024-07-02*

## 5. ITEMS FOR DISCUSSION

(a) Update from July 8, 2024 Regular Council Meeting

The Corporate Officer advised that at the July 8, 2024 Regular Council Meeting, Council unanimously voted in favour of referring the new arborist report on the four oak trees on Lillooet Avenue West to the Committee.

(b) Tour of Village Facilities

The Committee will be going on a tour of the Water and Waste Water Treatment Plants tomorrow, Thursday, July 11, 2024 at 9:00 am.

(c) Update on Meeting with Miami River Streamkeepers (Susan)

Susan Galvao provided an update on the June 3, 2024 Miami River Streamkeepers meeting. She advised that the Streamkeepers discussed bank stabilization and planting willow sticks to aid in stabilization. The area is hard to get into and would not be a suitable project to involve elementary school students in. The Streamkeepers will be planting 93 ferns in the fall with grant funding. They have 200 fish marking stickers to try out, although they're unsure of how well they'll work because they need to be hammered into place. They provided Susan with a "Think Tank" binder and Susan will go through and pull out the highlights.

The Streamkeepers indicated to Susan that there is invasive periwinkle behind the Branches condo units. The Committee discussed that the Fraser Valley Regional District sprays pesticides in public spaces and the need for larger signage. Deputy Mayor Facio advised that he would bring this forward at the next Fraser Valley Regional District Board meeting.

(d) Update on Miami River and Delegations from the Department of Fisheries and Oceans and Sts'ailes

The Committee agreed to change this agenda item to Riparian Zone Jurisdiction and refer the matter to staff to connect with the Department of Fisheries and Oceans and return to the Committee with more information about what can and cannot be done in a riparian zone and by whom.

(e) Action Plan for Portion of the Lagoon

The Committee discussed the Lagoon Master Plan and various details of the lagoon including the depth of the lake, where the water comes from, how many aerators there are and the impact of opening up the water flow to the lake.

## 6. ADJOURNMENT

**Moved by Cheri Norris**
**Seconded by Mark Schweinbenz**

THAT the meeting be adjourned at 9:58 am.

**CARRIED**
**UNANIMOUSLY**
*EAC-2024-07-03*

Leo Facio, Chair
Environmental Advisory Committee

Amanda Graham
Corporate Officer

urban environment.

# TREE RISK ASSESSMENT

SITE ADDRESS: Lillooet Ave.
Harrison Hot Springs

PREPARED FOR: Village of Harrison Hot Springs
495 Hot Springs Road
Harrison Hot Springs, BC
V0M 1K0

PROJECT ARBORIST: **Kyle MacGregor**

ISA PN 9111A, TRAQ

Wildlife Tree Risk Assessor P2769

2024-07-16

## ASSIGNMENT

Urban Environment Ltd. was retained by The Village of Harrison Hot Springs to assess four Red Oak (*Quercus rubra)* planted along a boulevard on the North side of Lillooet ave. The trees are located on Municipal property (fig.17). An initial assessment was conducted in July of 2023.

At the request of the municipality and following recommendations made in the original report, the project arborist returned to site in July 2024 to further assess.

## LIMITS OF THE ASSIGNMENT

Arborist, Kyle MacGregor's observations are limited to site visits on July 20th 2023, and July 12th 2024. This report supersedes all previous versions. For further limitations, see the last page of this report.

## METHODOLOGY

The trees were inspected in the round using visual assessment techniques including binoculars as well mallet sounding, light soil excavation, core sampling and review of literature specific to Red Oak pathogens. Past failures, environmental conditions and the presence of fungal fruiting bodies also helped determine hazard ratings. The trees have been assessed for risk as well general health. Only trees within striking distance to targets were tagged and included in the report. Trees are identified using numbered 1¼" diameter tags.

The rating system follows that of the TRAQ method (Level 2 Assessment). The method considers the likelihood of failure, impact to targets and consequence of a failure based on; tree species, load, defects, lean, environment and other factors to provide a risk categorization. The risk categorization presented in the data table is derived from a set of matrices (TRAQ Matrix l & ll). Recommendations are then provided to mitigate risk, factoring in the ability to relocate targets and long-term retention suitability of trees after any management techniques are applied.

## OBSERVATIONS

Four mature Red Oak line a boulevard with several driveway crossings laid on top of root zones as well significant fill and gravel. According to aerial images, there were originally 6 trees along this row, with two removed in recent years. The trees are in striking distance to pedestrians, cars and structures along Lillooet Ave. All four were previously topped to a height of appx. 40' and have since sprouted epicormic growth to an additional 30'.

When originally assessed in July 2023, trees showed chlorotic foliage and stunted leaf crops. All trees since have continued to exhibit these conditions.

All trees continue to grow within limiting environments; soil compaction, lack of irrigation, lack of available soil volume and mechanical injury have presented challenges to their root systems. All root flares were and continued to be buried by heavy fill and gravel. Soil substrate beneath initial compacted layers is a sandy loam and leads to further challenges in providing available water.

It was observed in July 2023, that two trees had recently suffered random branch failure several feet above the point of previous topping. Each branch was significant in size and did not break at a union but several feet above. Both wounds exhibited spongy bark in phloem and cambium layers, and with a whitish appearance – consistent with rot pathogens such as *Armillaria sp.* Throughout all crowns indicators of rot were present, such as cavities, poor response growth at large pruning cuts, a single canker was observed several feet up the trunk of a single tree. At that time the phloem (inner bark) appeared spongy, showing loss of lignin. This was discovered through random trunk sampling by means of tissue extraction.

Along with continued trends previously noted in 2023, additional discoveries were made in July of 2024.

Tree #301 shows branch dieback advanced to affect 3 additional North scaffold limbs. A 12" core sample was taken from this tree and showed spongy tissue and decay extending from sapwood into heartwood.

Branches 3-4" in diameter had fallen and remained onsite within the protection zone beneath tree #407. City staff had attended to a more severe branch failure beneath the trees, which were removed from the roadway earlier this summer.

In general, the trees' overall health has continued to decline.

## CONCLUSION

Invasive pruning and mechanical wounds along the lower trunk provided entry points for fungal pathogens to thrive, the trees concurrently face environmental stress from soil compaction and root asphyxiation.

The trees have classic signs of environmental and fungal stress; crown dieback, spongy wet tissue at site of branch failure, chlorosis of leaves from nutrient deficiency (either in soil or inability to reach crown) and leaves which are small in form (stunted). The pathogen is behaving like Armillaria or Phytophthora species.

Further to this, significant dieback and branch failure has increased along with new information showing presence of white rot within internal tree layers.

It is my professional opinion that these Oak trees suffer from complex of long-term abiotic stress factors. This is evidenced both by the specific environment in which the trees live and indications of decline consistent with rot pathogen. This species of tree is native to Eastern North America and in ideal conditions the tree can live up to 400 years old. The species has been found to see increased fungal pathogen markers in warmer climate locations where they have been introduced and these Red Oak trees along Lillooet Ave. have been poorly cared for within such a climate.

Given the increased decline of the trees, significant pruning to reduce loading and branch failure as well removal of fill from root zone would further stress the trees. They are structurally in poor condition. They are in poor health.

- It is recommended that trees numbered 290,301, 407 and 427 are removed prior to Winter of 2024.

- Replacement trees should be replanted after fill is removed and soil amended. Recommended replacement species include Gingko bilboa, Carpinus sp. and Acer macrophyllum. To provide soil volume beyond the boulevard I encourage the village to research silva cells and other soil vaults to allow adequate soil volume extensions beneath the adjacent roadways and driveway letdowns. Trees should be planted following CLA specifications.

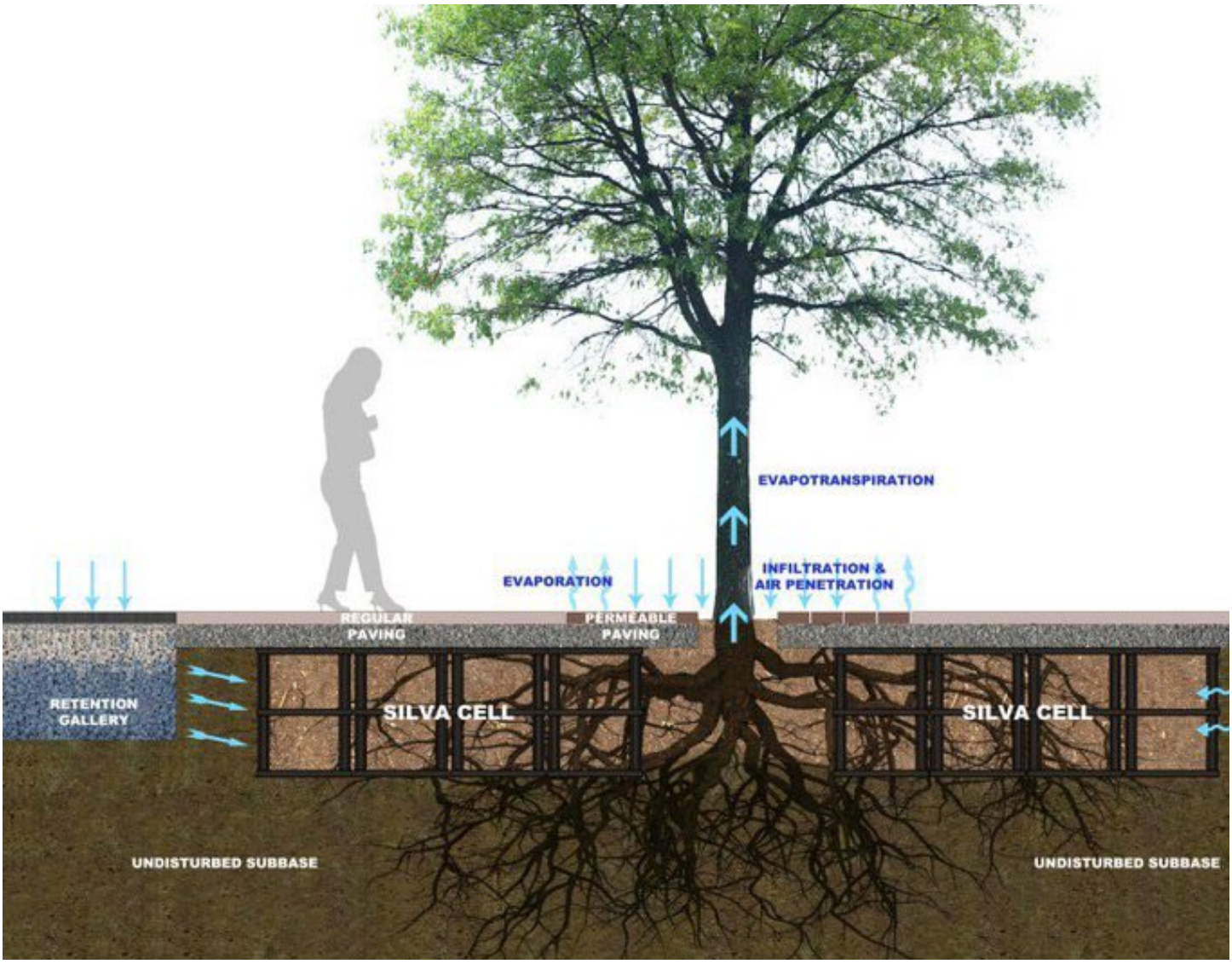



*Fig.1 Silva Cell soil vault system, image sourced from www.deeproot.com. Recommended infrastructure around replacement trees.*

## PHOTOS – JULY 2023

*Fig. 2 –Tree 407, previous point of topping at red line*

*Fig. 3 –Tree 429 past branch failure.*

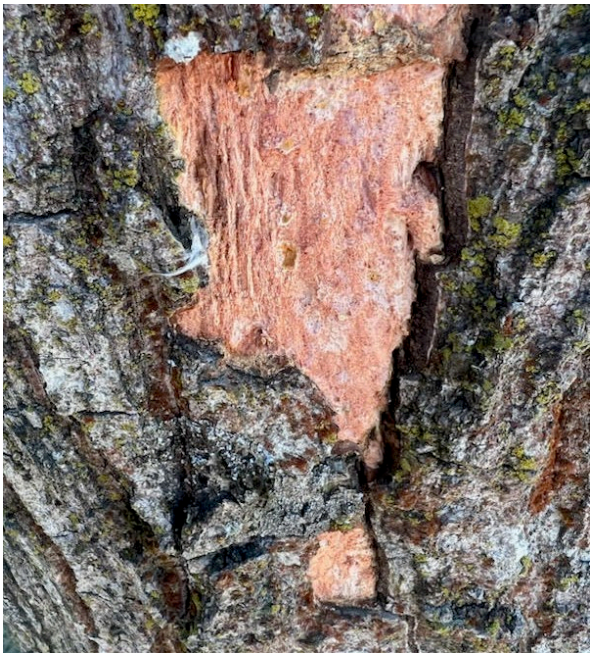


*Fig.4 –Phloem showing spongy tissue and small lesions.*

*Fig.5 – Recent branch failure, tree 407.*

*Fig.6 – Example of root flare buried on all trees.*

*Fig. 7 – Tree 407 mechanical wound lower trunk*

*Fig.8 – Canker at branch wound in upper canopy.*

*Fig .9 – Tree 301 thinning canopy*

*Fig. 10 - Example of thinning canopy*

*Fig .11 – Decay at pruning wound, tree 429.*

*Fig. 12 - Trentepohlia Algae near spongy inner bark.*

## PHOTOS – JULY 2024

*Fig.13 - New crown dieback.*

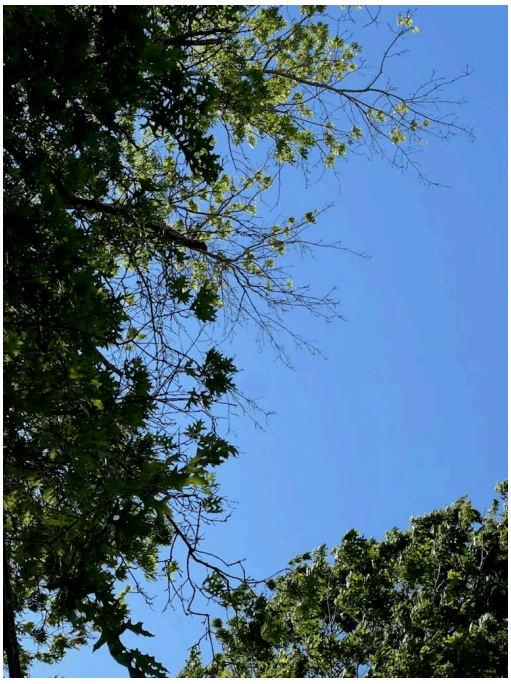


*Fig.14 – Increase in crown dieback.*

*Fig.15 – Branch failures. Recent branch failure over road, removed.*

*Fig.16 – Spongey texture observed with indication of decay throughout core sample.*

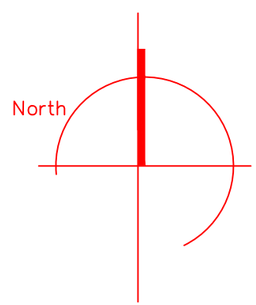
# TREE MANAGEMENT PLAN (FIG.1)

NW Lillooet Ave.


IMAGE SOURCE: GOOGLE EARTH (NOT TO SCALE)

## LEGEND

| LEGEND | |
|---|---|
| **Symbol** | **ITEM** |
| | TREE TO BE RETAINED |
| | TREE TO BE REMOVED |



| TAG # | COMMON NAME<br>*BOTANICAL NAME* | TRAQ RISK RATING | DBH (CM) | C-RAD (M) | LCR (%) | COMMENTS | PRESCRIPTION |
|---|---|---|---|---|---|---|---|
| 429 | Red Oak<br>*Quercus rubra* | High (Branch failure + decline) | 88 | 6.5 | 70 | • Previous branch failure, scaffold branch appx. 20+ cm diameter. Wound wood appears spongy.<br>• Root flare is buried with compacted fill and gravel.<br>• Leaf tissue chlorotic, predominately south facing crop as well is stunted.<br>• Previous pruning wounds have not adequately healed, canker present and various cavity throughout crown. | Remove |

| TAG # | COMMON NAME<br>*BOTANICAL NAME* | TRAQ RISK RATING | DBH (CM) | C-RAD (M) | LCR (%) | COMMENTS | PRESCRIPTION |
|---|---|---|---|---|---|---|---|
| 407 | Red Oak<br>Quercus rubra | High (Branch failure + decline) | 92 | 6.75 | 60 | • Recent (within 1 week) branch failure, scaffold branch 30cm diameter. Wound wood is spongy.<br>• Root flare buried, small mechanical wound at grade with poor response growth.<br>• Various poorly healed wounds, drilled into wound on East side of trunk 1m from grade, little resistance and shavings indicate presence of decayed wood up to 4" at site of drilling.<br>• Small reddish-brown lesions observed on NE trunk from grade to 2m.<br>• Bark easily removed in 10 cm2 patch at site of lesion. Inner bark / phloem is spongy. Sapwood appears healthy.<br>• Chlorotic and stunted leaf crop. | Remove |

| TAG # | COMMON NAME<br>*BOTANICAL NAME* | TRAQ RISK RATING | DBH (CM) | C-RAD (M) | LCR (%) | COMMENTS | PRESCRIPTION |
|---|---|---|---|---|---|---|---|
| 301 | Red Oak<br>Quercus rubra | High (Branch failure + terminal decline) | 75 | 5.0 | 60 | • Codominant main branch union<br>• Crown dieback, thinning upper canopy North side.<br>• End of scaffold branch at previous pruning cut – hollow (NW side above service line)<br>• Various dead branches over 5cm diameter laying on ground. Recent large branch failure onto road.<br>• Core sample taken, showing spongy decay throughout 12" core. | Remove |
| 290 | Red Oak<br>Quercus rubra | Medium (Branch Failure + decline) | 63 | 4.5 | 60 | • Chlorotic leaf tissue, stunted crop.<br>• Various Abiotic stressors.<br>• Previously topped, poor response at wounds.<br>• Codominant stems. | Remove |

## LIMITATIONS

Sketches, diagrams and photographs contained in this report being intended as visual aids, should not be construed as engineering reports or legal surveys. No tissue or soil samples were sent to a lab for analysis. Urban Environment accepts no liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any person because of the use of or reliance on this report.

No tissue or soil samples were sent to a lab for identification or analysis.

The information included in this report only reflects the condition of the trees that were examined, as of the time and date of inspection. This report is valid for the day of inspection only as this is natural entity and weather conditions, and the surrounding site can change.

This report and the opinions expressed herein are not intended nor should they be construed as any type of warranty or guarantee regarding the condition of the subject trees in the future. The tendency of trees or parts of trees to fall due to environmental conditions and internal problems are difficult to predict. Most trees have the potential for failure and this risk can only be eliminated if the risk is removed. 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.

The findings, conclusions and recommendations made in this report reflect our service's professional judgment based on current scientific procedures and facts. This report has been prepared according to accepted arboriculture standards and practices for British Columbia. Loss or alteration of any part of this report invalidates the entire report. Nothing in this report is intended to constitute or provide a legal opinion.

## REFERENCES

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

Murray, Marion (2020) *Identifying and Managing Cankers on Landscape Tree*, International Society of Arboriculture

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

(2017), *Recognize Common Diseases of Oaks in the Midwest: A Quick Guide*, US Forest Service Northeastern Area State & Private Forestry