Wildfire Hazard Assessment Report
5056 The Byway
West Vancouver, BC

January 29, 2025

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1. Executive Summary

This Wildfire Hazard Assessment Report (WHA) has been prepared to supplement the development permit application for the proposed development at 5056 The Byway ("The Property) in the District of West Vancouver (DWV). This WHA provides an assessment of the wildfire threat to this development and provide mitigation recommendations to mitigate that threat in the future development design. The following are a summary of key finding and recommendations:

1. The Property is within 15m of the nearest forest, however this is highly fragmented by urban development and discontinuous with landscape forests. This forest was assessed as having a mix of **low** and **moderate** wildfire threat.
2. The proposed development has been assessed and **no critical deficiencies** were identified. The following outstanding action items must be complete to ensure overall compliance with the recommendations in this WHA report:
    a. Ensure final architectural plan complies with the recommendations of this report.
    b. Ensure final landscape plan complies with the recommendations of this report.
    c. Manage trees as detailed in Table 6 to mitigate wildfire risk and increase the building setback from coniferous fuels.
3. A post-construction assessment is typically required to obtain an occupancy permit for new structures once development is complete. Deviations from the recommendations in this report may be unacceptable and result in a failure to obtain this permit. Typical deficiencies include:
    a. Use of non-approved materials in siding, soffits, and roofing.
    b. Combustible fences adjacent or connected to structures.
    c. Combustible landscaping within 1.5m of the structure.
    d. Flammable landscaping within 10m of the structure.
    e. Lack of tree management as per the recommendations of this report.

It is the responsibility of the development team to ensure that the recommendations of this WHA report are implemented.

Disclaimer

Wildfires are complex natural phenomena. As such, prediction, mitigation, and prevention are uncertain areas of professional practice. It is not possible to precisely estimate a potential wildfire's key drivers: wind, weather, topography, ignition cause, and location. With these uncertainties in mind, the authoring professionals used the best available science, standardized assessment methodologies, site information, and resources provided by the client when developing this report and providing recommendations.

2. Purpose

2.1. Introduction

Frontera Forest Solutions, Inc (Frontera) was retained by Gordon Wenstob (the Client) to provide a Wildfire Hazard Assessment (WHA) Report for 5056 The Byway (the Property) in the District of West Vancouver (DWV). The purpose of the WHA Report is to determine the wildfire risk associated with the property and proposed development, and to ensure compliance with the DWV's Wildfire Hazard Development Permit Area (Wildfire Hazard DPA).

The Property is located within the DWV's Wildfire Hazard DPA. This DPA was developed to reduce the risk to the community from wildfire by ensuring the properties at a highest risk of wildfire impacts are constructed to a high standard of wildfire resilience. Achieving this standard requires a Qualified Professional to complete a detailed assessment to provide recommendations on incorporating FireSmart principles into the proposed development design. FireSmart[1] principles are based on the latest guidelines from FireSmart BC, as well as the latest guidance from National Fire Protection Association (NFPA)[2]. This means that the Wildfire Hazard DPA guidelines may change as guidance from these bodies evolves and changes. The Wildfire Hazard DPA also allows for deviation from the guidelines depending on the wildfire risk of the site, as assessed by the Qualified Professional and based on their professional guidance. The complete details of this DPA can be found in Schedule ii of the District of West Vancouver Official Community Plan (Bylaw 4985, 2018)[3].

2.2. Qualified Professional

Conor Corbett is a Registered Professional Forester (RPF #5105) with over 10 years of wildfire experience. Conor has completed numerous WHA Reports in the lower mainland, including dozens in the District of West Vancouver. Conor is also an ISA Certified Arborist (PN-8429A) and is ISA Tree Risk Assessment Qualified.

[1] FireSmart BC. "FireSmart BC Begins at Home Guide." FireSmart BC, 2024. https://begins-at-home-guide.firesmartbc.ca/

[2] National Fire Protection Agency. "NFPA 1140: Standard for Wildland Fire Protection, 2022." *NFPA National Fire Codes.*

[3] District of West Vancouver, Bylaw 4985. *Official Community Plan,* 2018. https://westvancouver.ca/government-administration/strategies-reports/strategies-plans/official-community-plan

3. Project Description

3.1. Property Description

The Property consist of 5056 The Byway Road in the District of West Vancouver. The total area of this lot is approximately 4,700 m^2. The lot is located on the shores of Howe Sound, with steep slopes rising up from the west to a flat bench in the eastern third of the site. The eastern portion of the site is occupied by a detached home, a detached carport, and scattered trees and landscaping. The steep slopes in the western portion of the property are sparsely treed, with rocky bluffs throughout. Despite the sparse forest cover and rocky soils, trees on the site are large, dominated by spaced mature Douglas-fir (*pseudotsuga menziesii).* A short, unpaved driveway accesses the site from The Byway in the east.

The site is located 300m from the nearest large forested area, in Lighthouse Park south of the Property. However, this forest is separated from the broader landscape forests of the north shore by urban development. Overall, most of the area surrounding the Property is developed with intermixed forest and frequent disruptions in forest continuity.

3.2. Development

The proposed development of 5056 The Byway involves subdividing the lot into a new lot ("Lot A") and a remainder lot ("Remainder Lot 3"). Remainder Lot 3, in the north of the site, will not be altered or developed as part of this subdivision. As such, this WHA focuses on Lot A. Recommendations for trees located on Remainder Lot 3 are only included where they are pertinent to Lot A. The total area of Lot A is 975.5 m^2.

3.3. Documents Reviewed

The following documents were reviewed to prepare this WHA Report:

1. Topographic Survey. 5056 The Byway, DWV. Hobbs, Winter and MacDonald, BC Land Surveyors. November 18, 2024 (updated September 6, 2024).
2. Proposed Subdivision. 5056 The Byway, DWV. Hobbs, Winter, and MacDonald. Updated January 3, 2025.
3. Arborist Report. Frontera Forest Solutions. 5056 The Byway, DWV. January 24, 2025.

Note that Frontera has prepared the Arborist Report for this development application. This report identifies and makes recommendations for protected trees on the Property within the context of the proposed development. This WHA report also makes tree management recommendations to reduce wildfire hazard, and includes additional, unprotected trees not captured in the Arborist Report. These reports have been developed concurrently for consistency.

Figure 1. Subject site location and context.

4. Methodology

Wildfire risk is defined as the probability of severe wildfire combined with the consequences of severe wildfire at a specific location[4]. Each of these two factors must be assessed to describe wildfire risk.

The probability of severe wildfire is referred to by *wildfire threat*, and is driven by the structure and arrangement of vegetation. *Fuel types* are used to classify forests into standardized types based on their structure and arrangement, simplifying the wildfire threat assessment process. Fuel typing is completed using the Canadian Fire Behavior Prediction System (FPB)[5], which has standardized classifications for different types of common Canadian forests. Different fuel types are associated with different wildfire threats. There are no fuel classifications specific to coastal forests; instead, the most similar FPB fuel type is used. Fuel types on and adjacent the site are described in 5.1

Fuel types provide a coarse assessment of wildfire threat, however field assessing the wildfire threat of a particular forest is required to accurately capture wildfire risk. This is completed in BC using the Wildfire Threat Assessment Guide and Worksheets, last updated in 2020[6]. Representative plots are established in each fuel type to measure the wildfire threat. The vegetation that can act as fuel for wildfire is assessed at each plot, measuring:

- Surface fuel composition and continuity
- Ladder fuel composition and continuity
- Crown fuel composition and continuity
- Forest health issues
- Vertical continuity between surface, ladder, and crown fuels.

The findings of the wildfire threat assessment for this site are discussed in 5.2.

Wildfire threat provides an estimate of the probability of severe wildfire, a key component of wildfire risk. The final component of assessing the wildfire risk of a structure involves assessing the potential consequences of wildfire. This requires a detailed assessment of the vulnerability of the structure. This is completed using the FireSmart Hazard Assessment methodology[7], and is detailed in Section 7.

[4] British Columbia Wildfire Service, *Glossary of Wildfire Terms,* December 21, 2023. https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/glossary
[5] Natural Resources Canada, *Canadian Forest Fire Danger Rating System,*1992. https://cwfis.cfs.nrcan.gc.ca/background/summary/fdr
[6] British Columbia Wildfire Service, *2020 Wildfire Threat Assessment Guide and Worksheets,* 2020. https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/fire-fuel-management/fuel-management
[7]

5. Wildfire Threat Assessment

5.1. Fuel Types

The site is mostly occupied by a sparse coniferous forest, due to the steep slopes and thin soils. However, trees present are large and mature, primarily Douglas-fir (*pseudotsuga menziesii*) and western redcedar (*thuja plicata*). For the most part, these trees are very tall with high crowns. The western portion of the site is forested, with wide canopy gaps both vertically and horizontally. Surface fuels are moderate, however ladder fuels are highly discontinuous and minimal. The forest cover in the eastern portion of the site, adjacent the proposed lot, is much more fragmented by landscaping, structures, driveways, and paths. In this area, surface and ladder fuels are minimally present. All forest on the site has been classified as C-5 fuel type.

The nearest forested area to the Property is located in Lighthouse Park, approximately 300m south. Lighthouse Park is an isolated, but large forest dominated by the C-5 fuel type. The forests on the site have limited continuity with the Lighthouse Park forests, or any other landscape forests. Outside of Lighthouse Park, there is limited forested fuel types surrounding the site.

Photo 1. Facing west at the site from driveway. Forest cover is fragmented with minimal surface or ladder fuels.

Photo 2. Trees throughout the site are large and mature, with high crowns.

5.2. Wildfire Threat Assessment

The forests on and near the subject site were assessed to have a mix of low and moderate fuel wildfire threat. The nearest continuous forest cover from the proposed new lot will be setback 10m, located on the slopes west. These forests, although C-5, have been assessed as having a low wildfire fuel threat due to the minimal surface and ladder fuels. However, steep slopes may increase wildfire behaviour, and thus these forests have been assessed as a moderate wildfire threat.

The C-5 forests of Lighthouse Park have been assessed as having a moderate wildfire threat. These forests are comprised of slightly less mature conifers, with slightly higher surface fuel loading, as well as higher ladder fuel horizontal and vertical continuity. However, the C-5 fuel types of Lighthouse Park are non-continuous with the site, disrupted by urban development, ocean, and lower threat deciduous and mixed forests on private property.

A crown fire could generate in C-5 forests, however this would likely require extreme drought weather conditions combined with high winds. Nearby forests are likely too far from the proposed building to expose it to hazardous radiant heat. Ember spotting from nearby forests and igniting on-site vegetation or building surfaces poses the greatest ignition risk. Creating a FireSmart landscape and building, including establishing a 10m fuel break between the future structure and the nearest coniferous vegetation, is the best defense against the wildfire risk to this property.

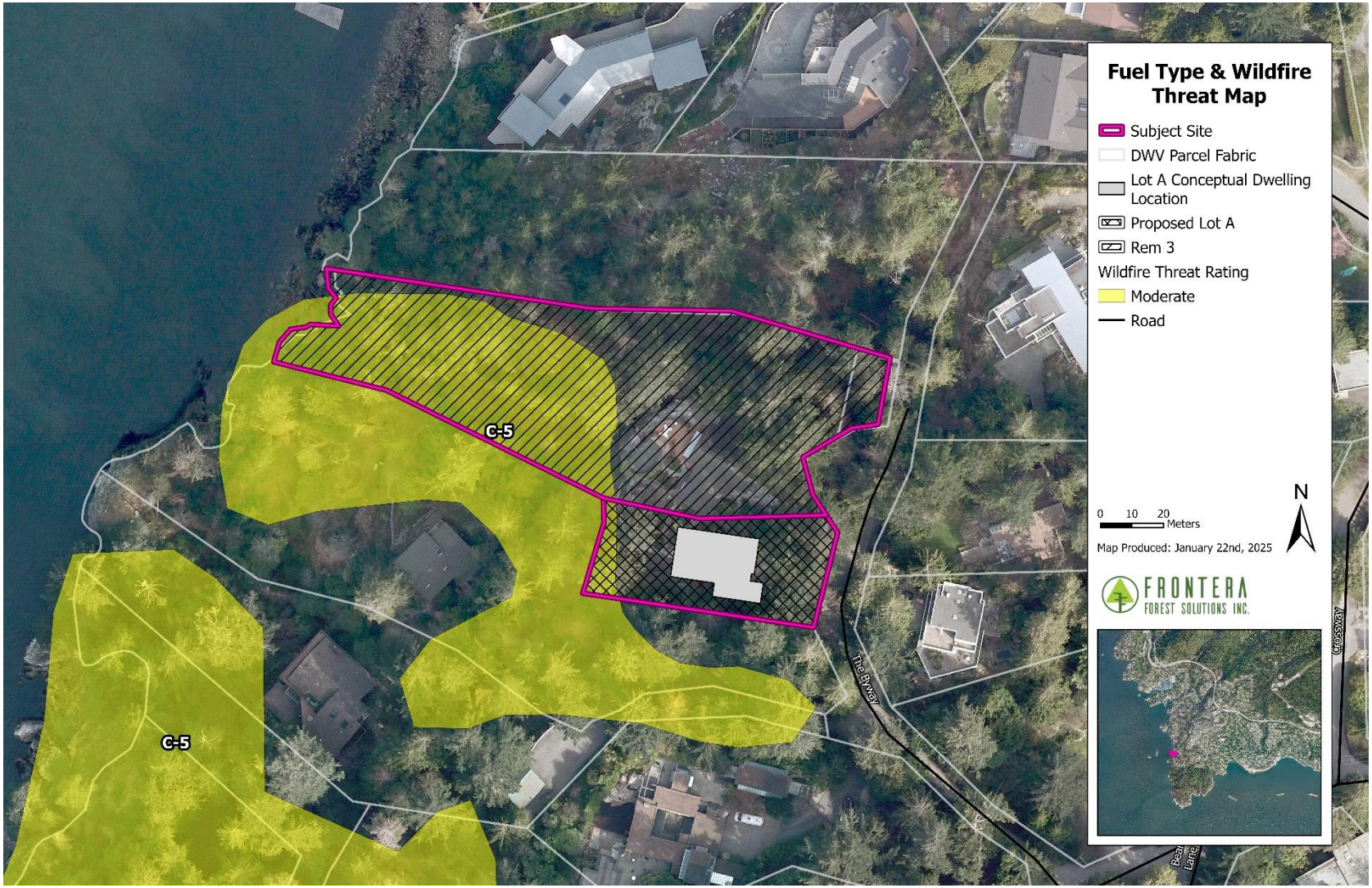


Figure 2. Fuel types and wildfire threat near the site.

6. Wildfire Threat Management

6.1. Introduction to FireSmart

The DWV Wildfire DPA guidelines are based on the best management practices established by FireSmart BC. This program provides guidance for building structures that are resilient to wildfire based on the latest wildfire science.

During an interface wildfire, structures can be involved through several ignition pathways. The first is direct flame, when wildfire in vegetation is directly in contact with the structure. The second is through convective heat, when a wildfire is near, usually within 10m, and the heat is sufficient to cause autoignition. The third pathway is through ember ingress, where embers travel through the air from the main body of a wildfire and involve a structure. These embers, which can travel several kilometers, can accumulate on combustible services or enter through structure openings, and cause the ignition of the structure. Building structures that are resilient to wildfire requires proactively mitigating these three pathways to ignition.

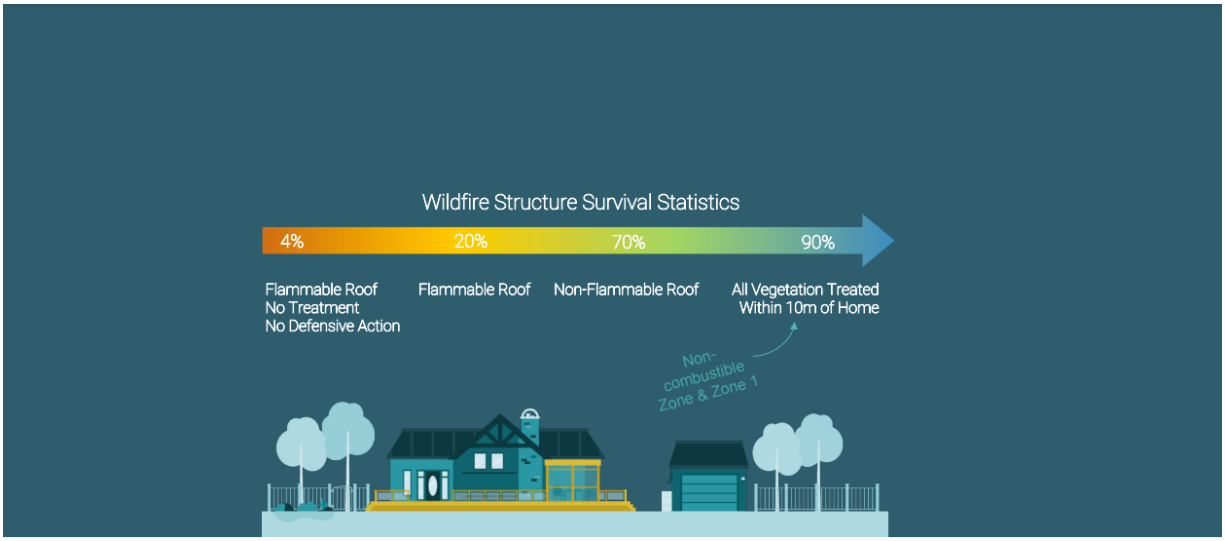


Figure 3. Benefits of FireSmart within 10 meters of structures. FireSmart compliance within 10 meters of structures can significantly increase the likelihood of home survival in the event of a wildfire. Graphic from FireSmart Canada (www.firesmartcanada.ca).

FireSmart refers to the structure and surrounding area into zones as the Home Ignition Zone, which extends out to 30m around the structure. This is subdivided into three smaller zones, each with different vulnerabilities that must be addressed to mitigate wildfire risk. The following page describes the general guidelines and goals of mitigation in the Home Ignition Zone. Following this general description, specific actions are outlined for the Property and proposed development in subsequent sections specific to each component of the Home Ignition Zone.

Figure 4. The Home Ignition Zone. Graphic from FireSmart Canada (www.firesmartcanada.ca)

The Immediate Zone includes the structure and the area within 0-1.5m surrounding the structure. The primary goal of mitigation in this zone is to prevent ember ingress and to prevent wildfire from spreading to directly adjacent the structure. The structure must be built in accordance with FireSmart building guidelines (described in detail in 6.2). No combustible materials, such as wooden fences or planter beds, vegetation, or bark mulch, is permitted within 1.5m of the building exterior. A 15cm inflammable ground to siding clearance must be established.

The Intermediate Zone refers to the area within 1.5 and 10m from the structure. The primary goal of this area is to limit wildfire from establishing in combustible materials or vegetation near the home. This area is primarily focused on suitable landscaping, including both vegetation and hardscape materials. Only fire resistant vegetation should be present in this zone, with no conifers or coniferous vegetation. No combustible materials such as firewood piles, combustible detached structures, combustible fences, or combustible decorative features should be present in this zone.

The Extended Zone refers to the area within 10 and 30m from the structure. The primary goal of this area is to reduce the intensity of a wildfire. Flammable vegetation should be limited in density and continuity. This can be done through selective tree removal, tree pruning, debris management, and surface vegetation clean up. This zone is often located partially or completely off the property, where mitigation actions are not feasible.

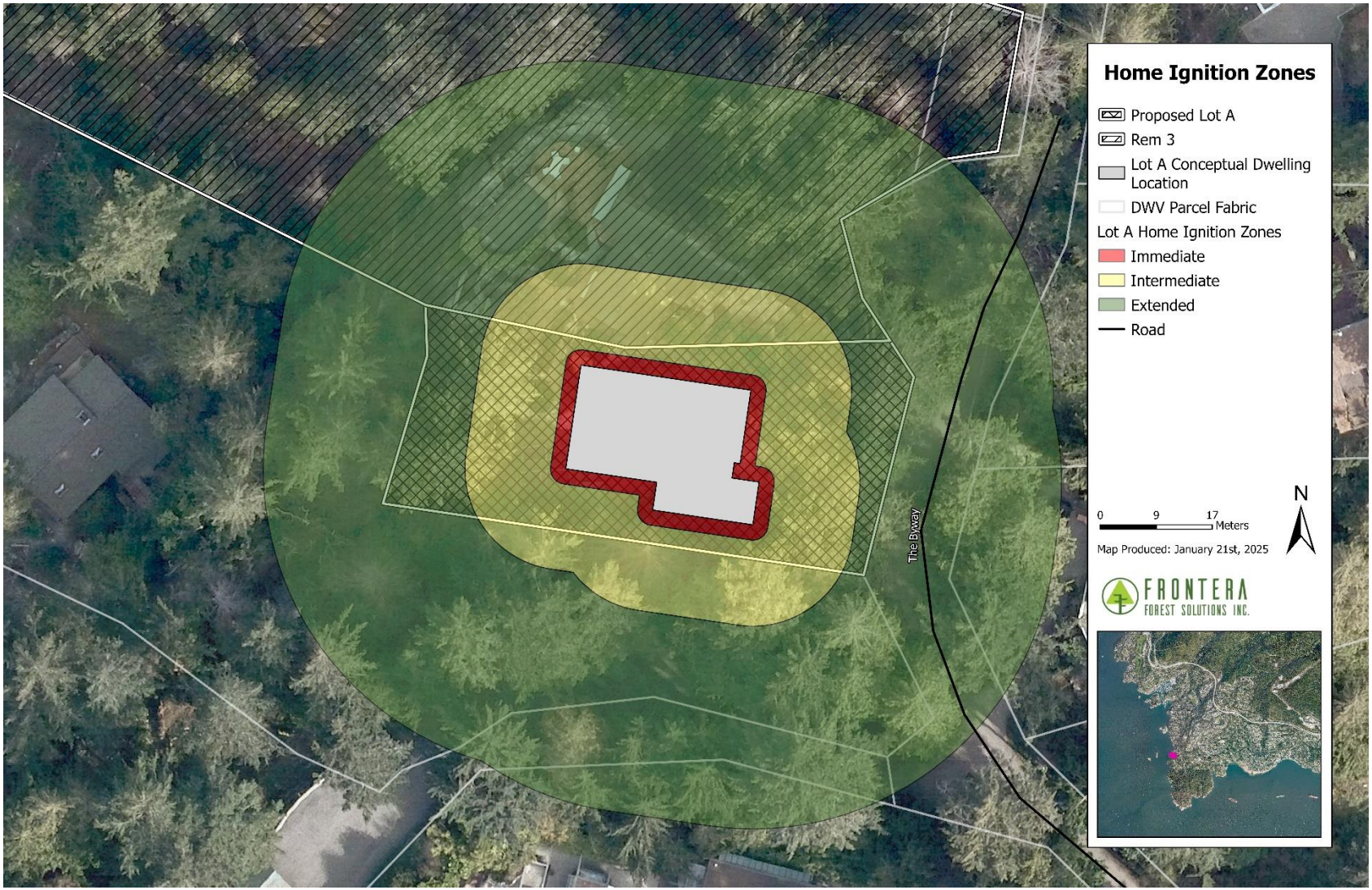


Figure 5. Home ignition zone for the proposed development.

6.2. FireSmart Immediate Zone

Building materials and construction techniques are critical for mitigating vulnerabilities to wildfire. Building materials and construction materials are also the most complex aspect of FireSmart construction, with numerous different components and many forms of construction. Most of the FireSmart guidelines are requirements under the DWV Wildfire Hazard DPA, with some flexibility based on the wildfire threat for the site. Table 1 provides the FireSmart guidelines for each component of the structure, and Table 5 evaluates the proposed materials for the proposed structure for compliance with these guidelines.

Table 1. FireSmart Immediate Zone guidelines.

Feature	FireSmart Guidelines
Roof	• Class A or B roofing materials must be used, with Class A preferred. Preferred materials are metal, asphalt shingles, or torch on roofing. Wood shingles are not acceptable under any circumstances.
Siding	• Siding must be comprised of fire-resistive* materials. Untreated wood is not an acceptable siding material. • 15cm of non-combustible materials must be used to create clearance between the ground and the siding material.
Eaves	• Eaves must be screened with 3mm non-combustible mesh to prevent ember ingress.
Vents and Openings	• Vents, attics, and openings under floors must be screened with 3mm non-combustible mesh to prevent ember ingress. • Vent assemblies should use fire shutters or baffles to prevent ember ingress.
Windows	• Windows should be double glazed, with tempered glass preferred. Single pane glass is not acceptable.
Doors	• External doors must be fire rated • Where windows are present in doors, they must comply with the above window guidelines. • Ensure doors are free of gaps and openings that can allow ember ingress.
Deck, porches, patios, and balconies	• Decks, porches, patios, and balconies must use fires resistive decking materials. • Decks, porches, patios, and balconies should be sheathed with fire resistive materials to avoid debris accumulation and ember ingress. • No combustible material is permitted below decks.
Fencing	• No combustible fencing is permitted within 1.5m of the structure.

Vegetation and hardscaping	• No vegetation is permitted within 1.5m of the structure. • No combustible material, such as bark mulch or organic soil, is permitted within 1.5m of the structure. It is recommended that this area be occupied by non-combustible material such as gravel, brick, or concrete. • No decorative features, such as trellis' or planter boxes, that are constructed of combustible materials are permitted within 1.5m of the structure.

*the DWV Wildfire Hazard DPA defines fire-resistive materials as materials resistant to fire, such as stucco, metal, brick, rock, stone, lumber treated for fire resistance and cementitious products (including hardiplank), but excludes, without limitation, untreated wood, aluminum and vinyl products.

6.3. FireSmart Intermediate Zone

Recommendations in the FireSmart Intermediate Zone are primarily aimed at landscaping, any auxiliary structures, decorative features, and stored materials. The goal of management in this zone is to create a defensible space out to 10m where wildfire cannot establish. Flammable vegetation must be removed, and any installed vegetation must be fire resistant. Combustible materials such as wood sheds, firewood piles, or construction debris must be removed from this zone.

Table 2. FireSmart Intermediate Zone guidelines.

Feature	FireSmart Guidelines

Existing vegetation	• Remove all flammable vegetation within 10m of the structure. This includes:
	  ○ Woody surface debris such as logs, branches, and mulch.
	  ○ Long (>10cm) grass.
	  ○ Coniferous shrubs and small trees
	  ○ Coniferous foliage, such as branches. This includes trees outside of the 10m zone that have branches that extend into the intermediate zone.
	• Where applicable, individual tree management for trees >10cm is detailed in Table 6

Combustible materials	• Any auxiliary structures within 10m of the structures must comply with FireSmart construction guidelines as per Table 1. • No firewood piles or combustible construction materials are permitted in this zone. • Any decorative features or hardscaping must be fire-resistive or non-combustible.
New vegetation	• New landscaping must be comprised of fire resistive plants as per FireSmart BC guidelines. • Ensure that new vegetation is not in contact with the structure. Avoid trees and shrubs planted with foliage overhanding the Immediate Zone within 1.5m of the structure.
Irrigation	• Sprinkler systems for irrigation of landscaping are encouraged but not required. Sprinkler systems do not allow for deviation from FireSmart principles.

6.4. FireSmart Extended Zone

The FireSmart Extended Zone focuses on less intensive landscaping and management. For most properties in the DWV Wildfire DPA, most of this area is off-site. Although vegetation in this area still poses a wildfire risk, there are limited management options due to jurisdictional constraints. Permission is required for any off-site work, including vegetation management. Obtaining these permissions is not always possible, and therefore FireSmart guidelines for the Immediate and Intermediate Zone must be implemented on the Property. Implementing on on-site wildfire risk mitigations in accordance with FireSmart principles is the most feasible and effective way to reduce wildfire risk for the Property and meet the DWV Wildfire DPA objectives. Guidelines for the FireSmart Extended Zone are provided in Table 3.

Table 3. FireSmart Extended Zone guidelines.

Feature	FireSmart Guidelines
Existing vegetation	• Selectively remove conifers to create 3m separation between tree crowns. • Prune conifers to achieve 3m separation between the crown foliage (measured from branch tip) and ground. • Where applicable, individual tree management for trees >10cm is detailed in Table 6

6.5. FireSmart Maintenance

A crucial component of wildfire resilience is ensuring the FireSmart guidelines outlined are maintained. This is primarily focused on landscaping, however any modification to structures or landscaping must consider FireSmart design principles. Landscaping must be regularly maintained. Installation of new auxiliary structures, decorative features, and storage of materials must be aligned with FireSmart guidelines. Table 4 outlines recommendations for maintenance.

Table 4. FireSmart maintenance guidelines.

Feature	FireSmart Guidelines
Vegetation	• Grass (if present) must be regularly mowed to a length of less than 10cm. • Regularly water vegetation during dry periods. Healthy and moist vegetation is less flammable. • Dead vegetation must be removed. • No flammable vegetation may be installed. • Any vegetation that encroaches into the Immediate and Intermediate Zone must be pruned or removed as per the zone guidelines.
Structures and storage	• New structures such as sheds or decorative features in the Immediate and/or Intermediate Zone must be built consistent with the FireSmart guidelines in Table 1 and Table 2. • No combustible materials (firewood, timber, etc) may be stored in the Immediate or Intermediate Zone.

7. Development FireSmart Hazard Assessment

This section evaluates the proposed development plans for their compliance with the DWV Wildfire Hazard DPA and FireSmart guidelines. Structure materials and design were evaluated based on the latest provided Architectural Plans (see 3.3). Landscaping was evaluated based on the latest provided Landscaping Plan and Arborist Report (see 3.3).

7.1. Proposed Structure Design

The proposed development consists of subdivision, and as such no architectural plans were available. Table 5 is provided for reference; final building plans must comply with the recommendations of this report and be found acceptable as per this table.

Table 5. Proposed structure construction materials and design evaluation..

Feature	Proposed development materials	Acceptable
Roof	• TBD	• TBD
Siding	• TBD	• TBD
Eaves	• TBD	• TBD
Vents and Opening	• TBD	• TBD
Windows	• TBD	• TBD
Doors	• TBD	• TBD
Deck	• TBD	• TBD
Vegetation and hardscape in FireSmart Immediate Zone	• TBD	• TBD

7.2 Proposed Landscaping

No landscape plans were available at the time of drafting this wildfire report. Final landscaping plans must comply with the recommendations of this report.

Several trees with a diameter at breast height (DBH) greater than 10cm are located on the Property. It is important to note that coniferous trees may pose a wildfire risk, but are often preferred for retention under other DWV bylaws and policies. This can include objectives and guidelines for maintaining a healthy urban forest, or protecting sensitive environmental areas such as riparian areas or steep terrain. There may be a tension between the goals of the DWV Wildfire Hazard DPA and these other bylaws and policies in the context of tree management. The Qualified Professional is required, under the DWV Wildfire Hazard DPA guidance, to identify alternative mitigation measures to meet the Wildfire Hazard DPA guidelines as well as any other development permit guidelines. Recommendations for tree management may deviate slightly from FireSmart guidance, based on the requirements of other bylaws and policies, as well as the wildfire risk for the Property. Tree management recommendations for wildfire risk mitigation are detailed in Table 6.

Table 6. Tree management recommendations for reducing wildfire risk.

Tree Tag	Protected (Y/N)	Species	DBH (cm)	Height (m)	FireSmart Zone	Wildfire Recommendation	Rationale
1651	Yes	Douglas-fir	109	45	Extended	Prune	Prune to ensure 10m clearance from tree foliage to proposed building. Due to high CBH, this tree likely requires minimal or possible no pruning, however some dead branches should be assessed for hazard prior to site construction.
1652	No	Western Red Cedar	43	10	Intermediate	Remove	Removal of this tree is recommended, given the poor condition this tree is unlikely to survive pruning.
1653	Yes	Douglas-fir	91	45	Intermediate	Retain	Prune to ensure 10m clearance from tree foliage to proposed building. Due to high CBH, this tree likely requires minimal or possible no pruning.
1654	Yes	Douglas-fir	104	45	Intermediate	Retain	Prune to ensure 10m clearance from tree foliage to proposed building. Due to high CBH, this tree likely requires minimal or possible no pruning.
1655	No	Douglas-fir	66	32	Immediate	Remove	High risk tree, removal recommended in arborist report
1656	No	Douglas-fir	59	30	n/a	Remove	Removal recommended in arborist report
1657	Yes	Douglas-fir	91	35	Extended	Retain	Prune to ensure 10m clearance from tree foliage to proposed building.
1658	Yes	Douglas-fir	88.5	40	Extended	Retain	Prune to ensure 10m clearance from tree foliage to proposed building. Pruning expected to be minimal given tree location.
1659	No	Japanese Cherry	23	3.5	Intermediate	Retain	No mitigation required, deciduous tree
1660	No	Douglas-fir	32	23	n/a	Remove	Removal recommended in arborist report
1661	No	Sweet gum	24	10	Intermediate	Retain	No mitigation required, deciduous tree
1662	Yes	Douglas-fir	69	40	Intermediate	Retain	Prune to ensure 10m clearance from tree foliage to proposed building.
1663	No	Western Red Cedar	60	20	Intermediate	Retain	Prune to ensure 10m clearance from tree foliage to proposed building.

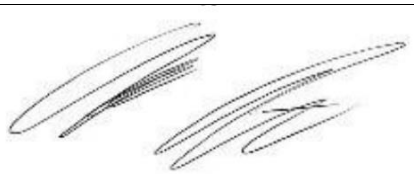
1664	No	Douglas-fir	66	28	Intermediate	Retain	Prune to ensure 10m clearance from tree foliage to proposed building.
1665	Yes	Douglas-fir	112	50	Intermediate	Retain	Prune to ensure 10m clearance from tree foliage to proposed building. Due to high CBH, this tree likely requires minimal or possible no pruning.
1666	Yes	Bigleaf Maple	88	30	Intermediate	Retain	No mitigation required, deciduous tree
OS-1	No	Douglas-fir	100	40	Intermediate	Retain	No mitigation required, off-site tree with very high crown.

Figure 6. Location of trees requiring wildfire mitigation

8. Concluding Remarks

This WHA Report will assist in ensuring the proposed development at the Property is consistent with the DWV Wildfire Hazard DPA. The proposed development project team must ensure the final structure is compliant with the recommendations in this report. **A post-construction assessment will be required, and any deficiencies identified in this assessment will require remediation at the discretion of the Qualified Professional.** It is therefore critical that this report be reviewed by all members of the project team. Any revisions or alterations to the site plans for the proposed development should be reviewed by the Qualified Professional.

Table 7. Qualified professional signature and seal

Conor Corbett	
Forest Professional Name (printed)	**Forest Professional Signature**
#5105	January 29, 2025
Member Number	**Date**

Appendix 1 – Glossary

Table 8. Glossary of terms.

Term	Description
Aerial fuels	Also known as crown fuels, the main canopy of the forest dominated by needles, leaves, and smaller branches.
BCWS	BC Wildfire Service, the provincial government agency responsible for wildfire suppression.
Coarse fuels	Larger fuels (greater than 7cm diameter) that are ignite less rapidly, but can sustain combustion for much longer once ignited.
Conifer	Plants that produce cones to reproduce, typically with needle or scale foliage that remains year-round (evergreen). Typically much more flammable than deciduous trees.
Crown fire	Fire that occurs primarily in the aerial fuels of a forest. Crown fires have the highest intensity and spread of all types of wildfire and are very challenging to suppress. Crown fires are almost always accompanied by a ground and surface fire. Can be intermittent, where only individual trees or group of trees aerial canopies are involved, or continuous, where the entire flame front is consuming the aerial canopies of all trees.
DBH	Diameter of a tree at breast height, approximately 1.4m above the ground.
Deciduous	Plants that do not produce cones, typically leaf bearing. Typically less flammable than coniferous trees.
Defensible space	A buffer created between a structure and combustible materials. Increased defensible space reduces vulnerability of a structure to wildfire.
DPA	Development Permit Area. Applications for building or subdivision permits for lots located in a DPA have additional requirements and conditions for approval by the local municipality. DPA's are typically enabled through a bylaw, such as an Official Community Plan bylaw.
DWV	District of West Vancouver
FBP	Canadian Fire Behavior Prediction System. Provides quantitative estimates of wildfire spread and intensity in 16 benchmark fuel types that are common in Canada.
Fine fuels	Small diameter (less than 7cm diameter) fuels that ignite rapidly and are consumed rapidly.
Fire Resistive	Defined in the DWV Wildfire Hazard DPA as "materials resistant to fire, such as stucco, metal, brick, rock, stone, lumber treated for fire resistance, and cementitious products (including hardiplank), but excludes, without limitation, untreated wood, aluminum, and vinyl products."
FireSmart	A nationwide program for supporting homeowners, land managers, local and provincial governments, and industry to increase resilience to wildfire in the wildland-urban interface. Often used as a verb to describe the implementation of mitigation measures that increase wildfire resilience.
Fuel	Any combustible material.
Fuel break	A barrier or disruption in fuel continuity that reduces the ability of a wildfire to spread.
Fuel management	Modifying forest structure to reduce the wildfire threat, typically through reducing horizontal and vertical continuity of fuels within the forest.
Fuel Type	Fuel types are defined under the Canadian Forest Fire Behavior Prediction (CFFBP) System and are represented by certain forest characteristics.
Ground fire	Fire that occurs primarily in the ground fuels, consuming roots and organic soil. Ground fires can burn deeply for long periods, presenting challenges for suppression.
Ground fuels	Vegetation found within or below the forest floor, such as roots or organic soil.
Home Ignition Zone	The area that extends 30m in each direction from a home or structure. Further subdivided into the Immediate (0-1.5m from structure), Intermediate (1.5-10m from structure, and Extended Zone (10-30m from structure).
Interface fire	Wildfires that involve or may involve structures.
Ladder fuels	Fuels found above the surface fuels but below the aerial crown fuels, such as intermediate trees and branches. These fuels provide

Lift pruned	Removing the lower branches of trees to create a gap between the surface fuels and the lower branches.
Occupancy Permit	This permit, issued by the local municipality with authority, confirms a new structure is safe and compliant with bylaws.
OCP	Official Community Plan. Outlines goals and objectives that outlines the long-term vision for a community. Development in a community must align with the OCP.
Post-Construction Wildfire Assessment	An assessment completed to confirm a new structure is compliant with the requirements of the Wildfire Hazard DPA. Typically completed by a Qualified Professional, and required to obtain to obtain an Occupancy Permit.
Proposed Development	The land alteration that is planned for The Property
Qualified Professional	A professional with appropriate level of training and experience, insurance, and registration with the relevant professional association, to complete assessment reports. In the wildfire hazard DPA of the DWV, a QP is a Registered Professional Forester with at least two years experience in the assessment, fuel management prescription and mitigation of wildfire hazards in British Columbia.
Spotting	A phenomenon where a wildfire spreads wind carried embers beyond the main body of a wildfire. These embers can enter structures and cause interface fire, as well as start new wildfires separate from the main wildfire body.
Surface fire	Fire that occurs primarily in surface fuels. Usually accompanies a ground fire.
Surface fuels	Vegetation found on or near the forest floor, such as grass, woody debris, moss, or herbs.
The Property	The parcel, or part of a parcel, that forms the assessment area of this site.
Wildfire	An unplanned fire that is driven by combustion of vegetation.
Wildfire Risk	A measurement of the probability of severe wildfire combined with the consequences of wildfire.
Wildfire Threat	An approximate rating of the likelihood of severe wildfire in a vegetated area. Quantitatively evaluated using the BC Wildfire Threat Assessment Guide and Worksheet.
Wildfire-Urban Interface	Also known as WUI, any area where combustible vegetation is adjacent or near structures or communities. Consists of the wildland-urban interface or wildland-urban intermix. Interface is where developed communities have a clearly defined boundary between forests and developed areas. Intermix is where the boundary lacks a clearly defined boundary.

Appendix 2 – Wildfire Threat Assessment Plots

Wildfire Threat Assessment Worksheet - Fuel Assessment (Site Level) Plot # 1

Location 5056 The Byway Date 4/16/24 Assessor/ Professional Designation Conor Corbett RPF

Coordinates (Lat/Long – Degrees/Decimal minutes): 49.341611, -123.268422

	Component/ Sub Component	Levels/ Classes				
		Forest Floor and Organic Layer				
1	Depth of Organic layer (cm)	1–<2 (1)	2–<5 (3)	5–<10 (5)	10–20 (3)	>20 (2)
		Surface and Ladder Fuel (0.1 – 3.0 meters in height)				
2	Surface fuel composition	Moss, Herbs and Deciduous Shrubs (4)	Lichen, Conifer Shrubs (6)	Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) (8)	Pinegrass (10)	Sagebrush, Bunchgrass, Juniper Scotch broom (15)
3	Dead and Down material Continuity (<7cm)	Absent (0)	Scattered <10 coverage (4)	10 -25% coverage (8)	26-50% coverage (12)	>50% Coverage (15)
4	Ladder fuel composition	Deciduous/ None (0)	Mixwood (5)	Other conifer (8)	Elevated dead fuel (10)	Spruce/ Fir/ Pine (15)
5	Ladder fuel horizontal continuity	Absent (0)	Sparse <10% coverage (2)	Scattered 10 – 39% coverage (8)	Patchy 40-60% coverage (10)	Uniform >60% coverage (15)
6	Stem/ha (understory)[3]	<500 (2)	501-800 (4)	801-1200 (6)	1201-1500 (8)	>1500 (10)
		Stand Structure and Composition (Dominant and Co- Dominate stems)				
7	Overstory Composition/ CBH (Crown Base Height)	Deciduous (< 25% conifer) (0)	Mixwood (% Conifer) 25% (0) 50% (2) 75% (3)	Conifer with high CBH (>10m) (3)	Conifer with moderate CBH (5-9M) (4)	Conifer with low CBH (<5m) (5)
8	Crown Closure	< 20% (0)	20 -40% or deciduous overstory (1)	41-60% (2)	61-80% (5)	>80% (4)
9	Fuel Strata Gap[4] (m)		> 10 (0)	6-9 (1)	3-6 (3)	<3 (5)
10	Stems/ha (overstory) live/ grn dom & codom	<400 (0)	401-600 (2)	601-900 (3)	901-1 200 (4)	>1 200 (5)
11	Dead and Dying (% of dominant and co-dominant stems)		Standing Dead/ Partial down <20% (2)	Standing Dead/ Partial down 21-50% (5)	Standing Dead/ Partial down 51- 75% (8)	Standing Dead/ Partial down >75% (10)

Ecoprovince: Coast and Mountains (0/42/58/70) | Threat Assessment: Low | WTA Total: 37

Comments:

C5 fuel comprised of mature Fd and Cw. Multi-strata, but primarily sparse and large mature trees. Limited surface fuels and understory. Very thin soils due to steep soils and rocky, bluffy substrate. Continuity disrupted by paths, roads, and scattered structures.

[3] Understory is considered ladder and suppressed stems in this category (distinct break between these stems and overstory)
[4] Fuel Strata Gap – Distance from top of ladder fuel to live crown base height of overstory

Figure 7. Wildfire Threat Assessment plot