



To: Qualified Professionals, Land Owners and Developers  
From: Community Planning and Sustainability Department  
Date: April 4, 2022  
Re: Terms of reference for Wildfire Hazard Assessments

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The District of Squamish (District) Official Community Plan (OCP) designates parts of Squamish as Wildfire Hazard Areas. Development Permit Area 11: Protection from Wildfire Hazard (DPA 11) was established to protect development from hazardous conditions associated with wildfires and requires that new development meet a set of guidelines to mitigate risks associated with this hazard.

A wildfire hazard assessment prepared and submitted by a Qualified Professional (QP) is required for subdivisions that trigger DPA 11. DPA 11 also allows for these guidelines to potentially be varied or relaxed when a Wildfire Hazard Assessment is received, and recommendations made by the QP that rationalize the relaxation.

The wildfire hazard assessment must establish the suitability of the property for development and any required mitigation measures. Each development is unique and carries unique requirements, which require the judgment of the QP completing the assessment. The following is intended to provide general terms of reference for typical requirements when completing wildfire hazard assessments in the District of Squamish.

#### **1. Qualified Professional (QP):**

The wildfire hazard assessment must be prepared by a QP registered in BC who is a Registered Professional Forester or licenced under the provisions of the Foresters Act, in good standing and qualified by training or experience in fuel treatment prescription development and mitigation of wildfire hazards in British Columbia. The QP must sign and seal each report submitted to the District.

#### **2. Information Gathering:**

Integrate all known constraints and factors impacting the property's risk from wildfire to develop recommendations and mitigation strategies. Information pertaining to the property should include:

- a. Legal topographic surveys prepared by a BC Land Surveyor showing property lines, rights-of-ways, easements, and constructed features such as roads, utilities, buildings etc.
- b. Natural features including trees > 20 cm in diameter (measured from a height of 1.4 m above natural grade), watercourses, riparian and SPEA areas, etc.

- c. Development Plans for the property such as site plans and building elevations.
- d. Land use information for the property such as zoning and environmentally sensitive (DPA 1) areas. Categorize land ownership of surrounding parcels into private, municipal, crown provincial, and federal (including Indian Reservations) designations.
- e. Relevant consultant reports and studies information such as environmental impact assessments, site bio-inventories, Riparian Area Protection Regulation assessments, and geotechnical reports that relate to the property, wildfire hazard, or wildfire mitigation treatments.
- f. Biogeoclimatic subzones and assessment of fire weather indices for the area (as analyzed through the collection of fire weather data from the nearest fire weather station).

### 3. Wildfire Hazard Assessment:

The aim of the wildfire hazard assessment is to identify the wildfire behaviour that impacts the property under review and should include both on- and off- site factors. Conduct field assessments if necessary. In general, the wildfire hazard assessment should address the DPA 11 guidelines. The assessment should include:

- a. A site level fuel assessment including fuel types on the property. Discuss existing fuel types and their location on the subject property and those adjacent. For each major fuel type, describe in detail what exists on site and the relative coverage of fuel types. Outline the species found, canopy cover/crown closure, estimated age, and density of stems and coarse woody debris.
- b. Hazardous Fuels on and adjacent to the property. Provide a description of hazardous fuels on and within 100 m of the subject property (where permission to enter adjacent private property has been granted) to develop and outline preliminary recommendations for building design and landscaping considerations.
- c. A map or plan of the FireSmart Fire Priority Zones around the footprint of proposed structures and building sites for Priority Zone 1 (0 - 10m), Priority Zone 2 (10-30m), and Priority Zone 3 (30-100m).
- d. Above and below-ground proposed and existing critical infrastructure servicing the community that may be vulnerable to damage from wildfire events. Critical infrastructure can include electrical distribution and transmission lines, utility poles and water servicing including water pump stations and reservoirs.
- e. Proposed and existing fire hydrant locations and proximity to existing and proposed structures and forested areas as this delineates suppression distance and water availability to the proposed development.

- f. Access and roadway plans that consider secondary access routes to all parts of the development to aid in emergency evacuation and fire suppression response. As per DPA 11 guidelines, the number of access points and their capacity should be determined during subdivision design and be based on threshold densities of houses and vehicles within the subdivision. Single access may be considered where the development contributes to a future road network with multiple access points or where an emergency access route can be constructed. Review existing access points and whether they meet the capacity for the increased population as well as evacuation in an emergency. Review secondary access routes and identify if service roads or utility vehicle trail systems can be used as an alternative.
- g. Steep slopes and the siting of proposed structures in relation to the tops of slopes as wildfire travels more readily up slope and can increase in intensity. As per DPA 11 guidelines, development should be set back a minimum of 10 m from the tops of slopes exceeding a 20% grade for a minimum horizontal distance of 10 m. In addition, other relevant environmental setbacks (geotechnical, riparian, etc.) must be identified on site.
- h. Tree inventory including all trees as defined by the District's Tree Management Bylaw No. 2640, identification of significant tree stands, and areas that may become parkland to be dedicated to the District or Province after development.

#### **4. Protection, Mitigation, and Fuel Treatment Strategies:**

The wildfire hazard assessment must provide recommendations on building materials, siting, landscaping, and fuel treatment which will help mitigate the wildfire hazard such that the proposed development is at an acceptable level of risk for its intended use as a residential, commercial, or industrial use. Any vegetation mitigation recommendations must conform and abide by the District's Development Permit Area 1: Environmental Protection (DPA 1) guidelines and Tree Management Bylaw No. 2640. The assessment should include:

- a. Protection and mitigation strategies aligned with the building construction and materials, landscaping, and vegetation treatments outlined in the DPA 11 guidelines.
- b. Where potentially hazardous vegetation or excessive surface woody fuel loading is identified, a fuel treatment prescription must be developed, and mitigation monitored by the QP. Fuel treatment strategies should be prescribed to reduce the ladder fuels in strategic areas, reduce understory conifers which act as ladder fuels, raise the crown base height of retained trees, maximize retention of live, healthy deciduous and conifer trees to maintain a cool, dark, and moist understory microclimate, and reduce surface fuel loading to reduce the risk of and behaviour of surface fire.



- c. Fuel treatment prescriptions are operational documents prepared by a QP and suitable for implementation by a qualified contractor who has experience in wildfire hazard fuel management operational treatments.

**5. Alternatives:**

Where a QP has undertaken an assessment and determined the fire hazard to be low provided specific conditions are met, the DPA 11 guidelines may be relaxed.