VILLAGE OF BELCARRA

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Interface Wildfire Development Permit Area Policy

DRAFT – Public Consultation

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VILLAGE OF BELCARRA INTERFACE WILDFIRE DEVELOPMENT PERMIT AREA (DPA) POLICY

Note:

- *The policies proposed (Structure and Landscaping and Subdivision Specifics) within this document are based on best management practices proposed in both the National Research Council "National Guide For Wildland-Urban Interface Fires" (2021) and the FireSmartBC Home Ignition Zone guide. Additionally, recent research (ex., "Why some homes survived: Learning from the Fort McMurray wildland/urban interface fire disaster" (Institute for Catastrophic Loss Reduction; Alan Westhaver; 2017), and "An examination of the Lytton, British Columbia wildland-urban fire destruction, Summary Report to the BC FireSmart Committee" (Alan Westhaver, Jack Cohen; 2022)) both identified that although wildfire conditions pass quickly (~60 seconds), homes will burn independently of the wildfire event. This means that although wildfire can cause structure ignition (most often via ember/firebrands and less often via direct flame), this is concentrated to the wildland-urban interface edge. Fire then moving through an urban community becomes a structure-to-structure ignition/burning event. Recommendations proposed focus on the principle that local home ignition zone conditions (i.e., conditions within 30m of the structure) determine that structure's ignition risk. Thus, managing this risk should be a priority, and can be done through following FireSmart™ Home Ignition Zone recommendations.*

1. Category

a. In accordance with Section 488 (1) (b) of the Local Government Act, and as described in the Village of Belcarra Community Wildfire Resiliency Plan for 2021, areas that are at a moderate or higher risk from interface wildfires are designated a Development Permit Area (DPA). DPA guidelines apply to lands within areas as shown on the Map (Section 11).

2. Justification

a. Fire behaviour modelling and the proximity of homes, businesses, and critical infrastructure to the forest interface have been assessed as part of the Village's Community Wildfire Resilience Plan for 2021. As part of this plan, areas of moderate or higher wildfire risk have been identified. Significant areas within the Village are located adjacent (interface) and embedded (intermix) to forest land that poses a moderate or higher risk from wildfire. Development within and abutting forested areas of moderate or higher wildfire hazard could expose people, infrastructure, and property to elevated risk.

3. Objectives

a. The objective of the Village of Belcarra Interface Wildfire Protection Policy (Development Permit Area; DPA) is to ensure that all new and continuing development is resilient to catastrophic wildfire hazardous fuel conditions. Using appropriate precautionary measures as part of site and building design, construction, landscaping, and long-term maintenance can help minimize risk to property and people from wildfire hazards.

4. Guidelines

a. A development permit addressing wildfire guidelines (see sections below) is required and must be approved prior to any development within the DPA, Map (Section 11) as follows:
    i. Subdivision of land where the number of parcels is increased.
    ii. Construction of, addition to, or siting of a building or other structure.

5. Exemptions

a. Despite 4.a, a development permit will not be required for the following:
    i. Construction or siting of structures, accessory buildings, or additions less than 100 ft^2 gross floor area, except if planned as a dwelling unit.
        1. If planned as a dwelling unit, then clause 4.a applies.
    ii. Secondary suites within an existing dwelling unit, provided no addition to the existing dwelling unit is proposed.
    iii. A complete roof replacement with materials that are rated Class A or B.
    iv. Public works or infrastructure (i.e., roads, bridges, protective works, storm, sewer and water infrastructure, electrical distribution systems and other services and systems).

6. General Guidelines

a. <u>Zone 1 – Farrer Cove area</u>
    i. New construction and alterations of existing structures:
        1. Each development permit application that includes a development proposal or subdivision wholly or partially within the DPA boundary "Zone 1", as shown in the Map (Section 11), must meet all policies as stated in Section. 7. Structure and Section 8. Landscaping, and should have a completed Wildfire Hazard Assessment provided by a Qualified Professional, registered on title, specifying mitigation measures for the development, and, upon development completion, a signature from a Qualified Professional that the requirements have been met.
        2. The design and construction of subdivisions located within the boundaries of the DPA boundary "Zone 1" shall be in accordance with the policies outlined in Section 9. Subdivision of Land.

b. <u>Zone 2 – Belcarra and General areas</u>
    i. Alteration to an existing structure:
        1. Each development permit application that includes a development proposal or subdivision wholly or partially within the DPA boundary "Zone 2", as shown in the Map (Section 11), must meet only a subset of policies as described below:
            a. Section 7. Structure
                i. 7.b, 7.c

b. Section 8. Landscaping

i. 8.a, 8.b

c. And should have a completed Wildfire Hazard Assessment provided by a Qualified Professional, registered on title, specifying mitigation measures for the development, and, upon development completion, a signature from a Qualified Professional that the requirements have been met.

ii. New construction:

1. Each development permit application that includes a development proposal or subdivision wholly or partially within the DPA boundary "Zone 2", as shown in the Map (Section 11), must meet all policies as stated in Section 7. Structure and Section 8. Landscaping, and should have a completed Wildfire Hazard Assessment provided by a Qualified Professional, registered on title, specifying mitigation measures for the development, and, upon development completion, a signature from a Qualified Professional that the requirements have been met.

iii. The design and construction of subdivisions located within the boundaries of the DPA boundary "Zone 2" shall be in accordance with the policies outlined in Section 9. Subdivision of Land.

7. Structure

Construction of, siting of, addition to, or alteration of a building or other structure. The following guidelines apply to development within the DPA:

a. Siting

i. Development must be set back a minimum of 10 metres from the top of ridgelines, cliffs, or ravines and from slopes exceeding 20% or greater for a minimum horizontal distance of 10 metres, or, if not possible, sited on the flattest area of the property. Variation of the setback may be considered if a wildfire review conducted by a qualified professional registered in BC can justify a change in the setback.

b. Roofing Materials

i. The roof covering must conform to Class A or Class B fire resistance as referenced in the current BC Building Code, as amended. Examples of typical Class A or B roofing products include, but are not limited to, asphalt shingles, torch-on asphalt membrane, metal, concrete tile, clay tile, and slate.

ii. Gutters must be made of fire-resistant materials (i.e., not vinyl) and be screened or closed to prevent the accumulation of leaves or needles.

c. Exterior Cladding

i. Any material used for cladding of exterior surfaces must be fire resistant, as defined in the BC Building Code. Examples include, but are not restricted to, stucco, metal (including heavy gauge aluminum), brick, cement shingles, Hardie plank (or other cement board), rock, and logs or heavy timber construction.

ii. Proposed deviations can be submitted to the Village as an alternative solution and will be considered if the applicant can verify that the expected level of performance meets or exceeds the manufacturer's fire rating test on the material under review. Fire rating test standards are defined as:

1. The test must be extended for a 30-minute duration.
2. Exhibits a flame spread index (FSI) of not more than 25.
3. Shows no evidence of significant progressive combustion.
4. Flame front does not progress more than 10.5 ft (3.2 m beyond the centerline of the burn at any time during the test.

d. Overhanging Projections

i. Structural components (post & beam) of decks, balconies and porches must be heavy timber construction as defined in the BC Building Code or must be clad with fire resistant material outlined in the exterior cladding section above.

ii. Balconies, decks, and porches must be sheathed-in (no exposed joists) and made of an ignition-resistant material (non-combustible or receiving a Class A fire rating as referenced in the current BC Building Code). Acceptable materials include stone, tile, rated composites, and concrete.

e. Exterior Windows

i. Exterior windows and glazing must be double-paned and tempered.

f. Exterior Doors

i. Exterior doors and garage doors shall be constructed of non-combustible materials (i.e., metal clad, solid core wood) and must meet the requirements of the North American Fenestration Standard (NAFS).

g. Eaves, Soffits, and Vents

i. Eaves and soffits must be closed (no exposed joists).

ii. Ventilation openings in exterior walls, roofs, eaves, and soffits shall be covered with non-combustible, corrosion-resistant wire mesh with openings no larger than 3 mm to prevent flame or ember penetration into the structure.

1. Wall-mounted exterior vents are exempt from having wire mesh with 3 mm openings if vents with mobile flaps are used (subject to venting requirements in the BC Building Code).

h. Chimneys

i. All chimneys constructed for wood burning fireplaces must have spark arrestors made of 12 gauge (or better) welded or woven wire mesh, with openings not exceeding 12 mm.

8. Landscaping

Applying to FireSmart Home Ignition Zones 'Immediate Zone' (0-1.5m outwards from the building site, as possible), 'Intermediate Zone' (1.5-10m outwards from the building site, as possible) and 'Extended Zone' (10-30m outwards from the building site, as possible), or otherwise specified, the following landscaping modifications shall be addressed prior to subdivision (from anticipated building sites), or prior to single lot development from the building footprint. The following guidelines apply to development within the DPA:

Figure 1: FireSmart Home Ignition Zone

a. Immediate Zone

The Immediate Zone is a non-combustible area that starts at the structure and extends to 1.5m perimeter around it and other attached structures, including decks. The intent is to reduce the chance of wind-blown embers igniting the structure.

i. Ensure there is a 1.5m buffer of non-combustible material surrounding all applicable structures. Clear vegetation and combustible material down to mineral soil and cover with non-combustible materials (i.e., gravel, brick, concrete, etc.).

1. For structures sited closer than 1.5m to one another, ensure the entire space is utilized as a non-combustible area as described above.

b. Intermediate Zone

Elements in the Intermediate Zone are managed so they don't transmit fire to the structure.

i. Conifer Trees

1. Complete removal of all conifer trees is recommended, but not mandatory. If conifer trees are retained, they must meet the following policies:

a. Thin the canopy and understory and prune lower branches to create an environment that reduces the risk of crown fire transmission:

i. Ensure there are no trees, limbs or shrubs overhanging roofs or growing under the eaves of structures. A 5-metre vertical separation between the lowest part of the overhanging branch and the highest point of the roof should be maintained.

ii. Remove ladder fuels by pruning trees so that there are no branches to a height of 2 metres from the ground.

iii. Space and maintain trees so that canopy spacing is a minimum of 3 metres. If planting or retaining hardwood trees, canopy spacing to/between them and another tree is not required.

ii. Dead or Dying Trees

1. Remove dead and dying trees unless suitable specimens have been converted into wildlife trees as assessed by a qualified professional with Wildlife Danger Tree qualifications or a holder of a Tree Risk Assessment Qualification (TRAQ) as administered by the International Society of Arboriculture.

iii. Landscaping Plants

1. Do not plant nor retain flammable native and ornamental landscaping materials such as conifer trees and shrubs (i.e., juniper, cedar hedging, pine), invasive plants (i.e., Scotch broom), unmown or cured grasses, woody debris and bark mulch, etc.

a. Reference the FireSmart BC Landscaping Guide[1] for appropriate species for your location.

iv. Fencing

1. Fencing materials for fences within the Intermediate Zone should be made of an ignition-resistant material (non-combustible or receiving a Class A fire rating). Acceptable materials include stone, rated composites, concrete, and metals (i.e., wire mesh). Fences within the Extended Zone are recommended to follow this guideline but are not required to.

[1] https://firesmartbc.ca/resource/landscaping-guide/

v. Surface Fuels

1. Remove all hazardous woody debris after land clearing for development or created by fuel treatments. Dispose woody debris offsite at an approved green-waste or incineration facility.

vi. Maintenance

1. Remove (at least annually) surface litter, downed trees, and dead and dying trees.
2. Keep piled debris (firewood, building materials, and other combustible material) out of the intermediate zone.

c. Extended Zone

The goal in the Extended Zone is not to eliminate fire, but to reduce its intensity.

i. All policies as stated in 8.b Intermediate Zone apply to the Extended Zone, with the exceptions of 8.b.iv and 8.b.vi.2.

ii. If the property extends beyond 30m from the structure, it is recommended, but not required, that these policies are applied up to a distance of 100m from the structure.

9. Subdivision of Land

As part of the subdivision process, the following guidelines shall be addressed. The following guidelines apply to development within the DPA:

a. All the provisions in Section 9. Subdivision of Land, subsections b. Planning & Design, c. Structures, and d. Vegetation shall be recommended and assessed as part of a hazard assessment provided by a Qualified Professional and registered on the titles of both new and remainder lots created through subdivision.

b. Planning & Design

i. Provide firefighting access to adjacent forested areas through (one or a combination of) an access road encircling the development (referred to as a ring road), periodic road access to the forest edge, or by placing roads adjacent to forested areas, combined with hydrants to provide water for suppressing wildfires.

1. Consider: where forested lands abut new subdivisions, requiring roadways to be placed adjacent to those lands. These roads both improve access to the interface for emergency vehicles and provide a fuel break between the wildland and the subdivision.
2. Ensure: hydrant locations optimize the ability to protect wildland urban interface areas and provide a water source for fire suppression in adjacent forested edges bordering structures.

ii. Provide a minimum of two means of access points with road systems capable of supporting evacuation and the movement of fire suppression equipment. The number of access points and their capacity should be determined during subdivision design. Single access may be considered where the development contributes to a future road network with multiple access points.

iii. Require suitable access in areas of the community that are considered isolated and that have inadequate developed access for evacuation and fire control.

iv. Require that fire hazards on forested lands be mitigated to a level deemed acceptable by a qualified professional in a forest fire hazard assessment before they become the property of the Village (i.e., land returned).
    1. Encourage wildfire hazard reduction in a way that is supportive of restoring the natural environment. Wildfire hazard reduction, done responsibly, can be compatible with habitat conservation and restoration.
v. Require that development (where possible) be set back a minimum of 10 metres from the top of ridgelines, cliffs, or ravines and from slopes exceeding 20% or greater for a minimum horizontal distance of 10 metres.

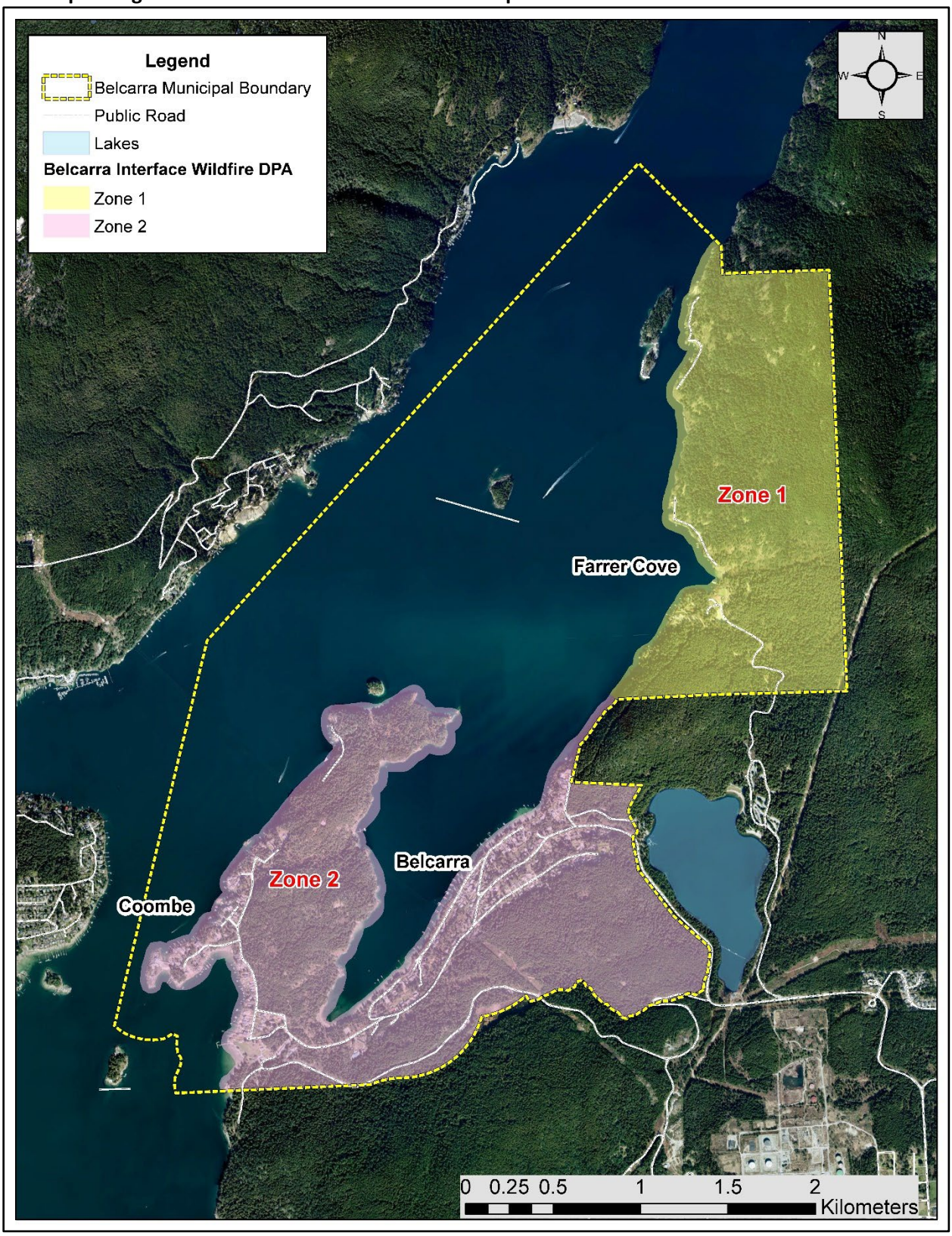
c. Structures
    i. Buildings must comply with Section 7. Structure. Accessory buildings planned for habitation must meet the same building standards as the principal residence.

d. Vegetation
    i. Landscaping must comply with Section 8. Landscaping.

10. Subdivision of Land – Alternatives

a. Where a Qualified Professional in fire protection has undertaken an assessment and determined the fire hazard to be low, provided specific conditions are met, the requirements of Section 9. Subdivision of Land may be relaxed at the discretion of the Village. Any relaxation of guidelines requires that provisions be in place to ensure that development is carried out in accordance with the conditions noted in the Professional's assessment.

11. Map: Village of Belcarra Interface Wildfire DPA Map



12. Definitions

a. Canopy
   i. The extent of the outer layer of leaves/branches of an individual tree or group of trees.

b. Cliff
   i. Means a vertical or near-vertical feature. It is an abrupt change in the topography of the land area.

c. Conifer Tree
   i. Most simply, a conifer tree is a tree that is cone-bearing. They usually have needle-shaped or scale-like leaves. Examples include Douglas-fir trees, cedar trees, spruce trees, and pine trees.

d. Crown fire
   i. Fire that enters and/or travels through the crowns of overstory trees. Can be passive (intermittent or persistent torching of individual trees), or active (surface and crown fire energy are linked such that surface fire intensity is sufficient to ignite tree crowns, and fire spread and intensity in the tree crowns encourages surface fire spread intensity).

e. Fuel treatments
   i. The manipulation or reduction of living or dead forest and grassland fuels to reduce the rate of spread and head fire intensity and enhance likelihood of successful fire suppression. Fuel is the only aspect of the fire behavior triangle that can be modified to reduce wildfire threat.

f. Hardwood Tree
   i. Most simply, a hardwood tree is a tree that is flower-bearing. The wood is often quite hard in density, and they usually have broad leaves that die and fall off for the winter season. Examples include maple trees, cottonwood trees, oak trees, and red alder trees.

g. Ladder Fuels
   i. Woody debris (live or dead trees, shrubs, herbs, mosses, branches, etc.) under the main canopy of overstory trees that, when ignited, can allow fire to move vertically through them into the canopy of the overstory tree(s).

h. Moderate or higher wildfire hazard
   i. Moderate: Developed and undeveloped land that will support surface fires that are unthreatening to homes and structures.
   ii. High: Landscapes or stands that are continuous forested fuels that will support candling, intermittent crown fires, or continuous crown fires. These landscapes are often steeper slopes, rough or broken terrain and/or south or west aspects. High polygons may include high indices of dead and downed conifers.
   iii. Extreme: Continuous forested land that will support intermittent or continuous crown fires.

i. Prune
    i. To cut or lop off branches.

j. Qualified Professional
    i. Means a Professional Forester registered or licensed under the provisions of the Foresters Act that is experienced in wildfire hazard assessment or a person in a class prescribed by the minister under Section 524(9) of the Local Government Act. A Qualified Professional must meet the requirements outlined in the District's Interface Wildfire Protection Terms of Reference for Report Preparation.

k. Ravine
    i. Means a narrow, steep-sided valley that is typically eroded by running water and has a slope grade greater than 3:1.

l. Ridgeline
    i. Means the linear apex of a ridge. A ridge is a sloping line of high ground, such that when standing on the ridgeline, there is usually ground steeply sloping away in two directions.

m. Surface fuels
    i. Woody debris on the ground (live or dead trees, shrubs, herbs, mosses, branches, etc.) available for a fire to ignite and burn.

n. Understory
    i. Plant life growing beneath the forest canopy without penetrating it to any great extent, but above the forest floor. The understory typically consists of trees stunted through lack of light, other small trees with low light requirements, saplings, shrubs, vines, and undergrowth.

o. Wildfire Hazard Assessment
    i. Means a report prepared by a Qualified Professional in accordance with the Village's Terms of Reference for Wildfire Hazards and Provincial legislation. The assessment identifies wildfire behaviour characteristics, determines if the development is safe for the intended use, and specifies any corresponding hazard mitigation measures.

p. Wildlife tree
    i. A tree or a group of trees with characteristics that provide present or future wildlife habitat (High characteristics include: internal decay, crevices, largest trees on site, locally important wildlife species, etc.)