



CASCADE ENVIRONMENTAL
RESOURCE GROUP LTD

Furry Creek, BC

Proposed Environmental Development Permit Areas



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1 Introduction and Purpose

Fine Peace Canada Ltd. (Fine Peace) propose to develop the Oceanside Community lands of Furry Creek, consisting of the remaining undeveloped lands in that area. The subject lands have been designated into 12 proposed development pods listed below with location displayed on Creus Engineering Drawing No. 14305 Key-4 (Creus, June 22, 2020).

- 1) Oliver's Landing Phase 2
- 2) Waterfront Lands
- 3) Marina Lots (including Director's Lands)
- 4) Porteau Bluff
- 5) Northwest Lands
- 6) Northeast Lands
- 7) Collector Lands
- 8) Uplands South
- 9) Uplands North
- 10) Mountain Lands
- 11) Upper Benchlands
- 12) Highlands (Future Study Area)

As a precursor to a rezoning application, Cascade Environmental Resource Group Ltd (Cascade) prepared a Bio-Inventory Assessment of the Oceanside Community lands to provide a baseline environmental inventory, identify environmentally valuable resources (EVRs) on or near the study area and, if present, to determine the potential impacts as a result of the proposed development and provide recommendations to mitigate these impacts (Cascade, March 15, 2019).

Cascade has worked with the proponent's professional team and has reviewed the updated neighbourhood plans for the proposed development at Furry Creek, from NSDA Architects and Creus Engineering (June 22, 2020), as they relate to the recommendations in the Preliminary Bio-Inventory Assessment (Cascade, June 23, 2020). Mike Nelson (Cascade) met (via Zoom) with Steven Olmstead and Clair Dewar (Squamish Lillooet Regional District), Jin Yang (Fine Peace) and Kevin Healy (Creus) to discuss moving the project forward by establishing Development Permit Areas (DPAs) with objectives/guidelines for Furry Creek Oceanside Community to incorporate the findings and recommendations of the BIA and the development lot review. This document is a culmination of those efforts.

1.1 SLRD Electoral Area D OCP

The SLRD have established an Official Community Plan through a planning and community engagement process to address long range land use planning issues. It contains objectives and policies to guide the local government's decisions related to land use and development within the SLRD Electoral Area D, in which the Subject lands are located. Pertinent to this document, the OCP addresses Sustainability and Resilience through development of guidelines and policy as they relate to Ecological Sustainability, with Climate Change and Greenhouse Gas Reduction, Natural Hazards, Transportation and Services and Infrastructure (Community Services) also addressed. For the purposes of this document, the author has used the guidelines and objectives from the Area D OCP section on Ecological Sustainability in developing DPA guidelines for Furry Creek.



1.2 Howe Sound East Sub-area Plan, Schedule C to SLRD Area D OCP

The SLRD Electoral Area D OCP also includes the Howe Sound East Sub-area Plan as a schedule. This document includes discussion on the Britannia Beach Neighbourhood, Furry Creek Neighbourhood and Porteau Cove, with respect to Environmentally Sensitive Areas, however, the guidelines for the Furry Creek Neighbourhood have not been developed. For the purposes of this document, the author has also used the guidelines and objective for the Britannia Beach Neighbourhood and Porteau Cove in developing DPA guidelines for Furry Creek.

1.3 Existing DPA Guides

A Development Permit is a permit approved by the SLRD Board that specifies how development is to occur on a given parcel of land. A Development Permit is required when the property to be developed is situated within a Development Permit Area designated in an Official Community Plan. For the purposes of this document, only the guidelines/objectives within the Riparian Area Development Permit Area have been incorporated into this document, as an Environmentally Sensitive Areas DPA has not as yet been developed for the Furry Creek Neighbourhood; the intent of this document. It should be noted that in addition the aforementioned DPA, other DPAs may be applicable to the Furry Creek Neighbourhood, such as the Wildfire Protection DPA and the Conservation DPA (for energy conservation, greenhouse gas reduction and water conservation).

2 Development Permit Areas

This document specifically deals with wildlife, wildlife habitat and other environmentally sensitive areas. Objectives, in the form of guidelines, are detailed for both existing DPAs and for DPAs that have as yet to be established. The proposed DPAs may not be established in the future, but nonetheless, the guidelines are being established to address issues identified in the Bio-Inventory Assessment, the Area D OCP and the Howe Sound East Sub-area Plan.

2.1 Existing DPAs

2.1.1 Riparian Protection Development Permit Area

2.1.1.1 Description and Justification

Riparian (streamside) areas are protected from development because they provide essential habitat for fish and other wildlife, maintain water quality, and are essential to the overall health the environment. The natural vegetation functions to provide necessary habitat components such as shade, nutrients, shelter and water, and also prevents erosion by stabilizing stream banks (SLRD, A Guide to Riparian Area Development Permits).

A Riparian Area Development Permit is required for subdivision of land, building on or altering the land that is within or adjacent to waterbodies that provide fish habitat or flow into a waterbody that provides fish habitat. The Development Permit Area includes (SLRD, A Guide to Riparian Area Development Permits):

- A 30 metre strip on both sides of the waterbody, measured from the natural boundary.
- For a ravine less than 60 metres wide, a strip on both sides of the stream measured from the natural boundary to a point that is 30 metres beyond the top of the ravine bank.



- For a ravine 60 metres wide or greater, a strip on both sides of the stream measured from the natural boundary to a point that is 10 metres beyond the top of the ravine bank.

2.1.1.2 Guidelines

Current DPA guidelines require that the proponent retain a qualified environmental professional (QEP) to prepare and submit a *Riparian Areas Protection Regulation* Assessment Report to the Province and providing their professional opinion that:

- If the development is implemented as proposed there will be no harmful alteration, disruption, or destruction of natural features, functions, and conditions that support fish life processes in the riparian assessment area, or that
- If streamside protection and enhancement areas identified in the report are protected from development and the measures identified in the report as necessary to protect the integrity of those areas from the effects of the development are implemented by the developer, there will be no harmful alteration, disruption, or destruction of natural features, functions, and conditions that support fish life processes in the riparian assessment area.

Existing guidelines stipulate that DPA permit may required:

- Areas of land, specified in the permit, must remain free of development, except in accordance with any conditions contained in the permit and any intrusions authorized or permitted under the provincial *Water Sustainability Act* and/or federal *Fisheries Act*.
- Specified natural features or areas be preserved, protected, restored, or enhanced in accordance with the permit.
- Natural watercourses be surveyed and returned to the Crown.
- Works be constructed to preserve, protect, restore, or enhance watercourses, or other specified natural features of the environment.
- Protection measures be implemented, including that trees or other vegetation be planted or retained in order to preserve, protect, restore or enhance fish habitat or riparian areas, control drainage, or control erosion or protect banks.
- An explanatory or reference plan be prepared by a BC Land Surveyor that delineates the identified streamside protection and enhancement area.
- Development complies with the Land Development Guidelines for the Protection of Aquatic Habitat, published by Fisheries and Oceans Canada and the Ministry of Environment, Land and Parks, May 1992.

Additional guidelines for the Furry Creek Neighbourhood include:

- Ensure all watercourses delineated on Map 1 identified to be protected under the *Riparian Areas Protection Regulation* remain free from impact and development and Streamside Protection and Enhancement Areas are protected both during and after development. Watercourses need to be surveyed by a BC Land Surveyor in order to establish setbacks prior to development.
- Maintain vegetated corridors between watercourses where possible to provide wildlife movement corridors and prevent further fragmentation of available habitat. Install amphibian and small mammal eco-passages under roadways via culverts to preserve and enhance habitat connectivity, subject to the project design and review by the project QEP.
- Encourage additional setbacks adjacent to streamside protection and enhancement areas wide enough to accommodate trails in appropriate locations.



- Prior to any construction activities within the riparian areas for any creek crossings, have targeted surveys conducted by a QEP for the following species at risk. If any are found, these can be relocated to suitable riparian areas nearby. This may require the installation of isolation fencing along the work site boundary.
 - northern red-legged frog, western toad, and coastal tailed frog, and
 - northern rubber boa.
- Any construction activities anticipated to have any potential effect on water quality in water bodies on or adjacent to the site should be monitored by a QEP.
- Where wetlands, watercourses or riparian areas are disturbed, restoration of the disturbance or compensation equal to 100% of the disturbed area should be provided.
- Minimize crossings of streamside protection and enhancement areas. Low impact creek crossings such as clear span bridges and/or arch culverts/box culverts should be used where stream crossings are necessary. Permitting for stream crossings will be required from the MFLNROD under Section 11 of the *Water Sustainability Act*. Stream crossings will also have to be constructed under compliance with the federal Fisheries Act.
- Instream work and stream crossings should meet the requirements of the Land Development Guidelines, the B.C. Water Act, and newer guidelines that are being developed.
- Timing of any works in and about a stream should be in accordance with provincial guidelines and regulations.
- The bridge abutments and riprap banks for the proposed bridge from the existing development at Oliver's Landing to the Waterfront Lands were observed to be present. A Section 11 notification of the *Water Sustainability Act* will be needed before construction begins, if a free spanning bridge is planned. If any inwater works are required below the high-water mark of Furry Creek a DFO request for review and a Section 11 approval under the *Water Sustainability Act* will be required.

2.2 Proposed DPAs

The following DPAs are recommended for the Furry Creek Neighbourhood as described below:

- Marine Shoreline Areas
- Wildlife Habitat Areas
- Sustainability

2.2.1 Marine Shoreline Areas

2.2.1.1 Description and Justification

Marine shoreline areas carry environmental, intrinsic and aesthetic values, and encompass a variety of marine shore types, including rocky shores, rock and large sediment (boulder/cobble) shores, sediment (sand/gravel) shores, estuaries and mud flats and altered shores. The shoreline provides an important interface between the terrestrial and marine ecosystems. For the purposes of this document, Marine Shoreline Assessment Areas specifically refers to the area 30 m upland (backshore) of the natural boundary of the sea (Map 1).

2.2.1.2 Guidelines

- Development design must strive to balance coastal flood protection and planning for future sea level rise while minimizing erosion, preserving coastal functions and processes and maintaining water quality, sensitively locating foreshore access and



structures and enhancing marine habitat and adjacent coast waters wherever possible.

- While additional structural shoreline and flood protection measures are not anticipated for the Furry Creek Neighbourhood at this time, except possibly for access road requirements to the Marina Lots, any such measures should be constructed upland of the natural shoreline boundary or be authorized by DFO under the *Fisheries Act*. The size of any flood protection structure must be limited to the minimize size necessary to provide adequate protection.
- The Marine Shoreline Assessment Area should be evaluated prior to the development of the detailed development plans by a Qualified Environmental Professional to ascertain an applicable marine shoreline buffer. A request for review from DFO concerning the *Fisheries Act* must be obtained when detailed development plans have been completed for the lands adjacent to marine foreshore including the Waterfront Lands, Marina (Director's) Lots and Northwest Lands to receive applicable marine buffer setbacks. Different shoreline types have a different ability to accommodate disturbance. Estuary and mud flats are fragile and easily destroyed and require a larger setback (minimum 30 m), while rocky shores are typically very stable and are quite resistant to change (preliminarily minimum setback of 15 m, subject to detailed design review). The setbacks should be protected from development unless an approval is received from DFO.
- Marine Shoreline Areas affected by development will be subject to vegetation restoration plans prepared by a QEP.

2.2.2 Wildlife Habitat Areas

2.2.2.1 Description and Justification

Wildlife Habitat Areas include all mapped wildlife species at risk critical habitat areas, and mature red listed ecological communities at risk on site. This proposed DPA is intended to provide guidance for the protection of wildlife species and habitat at risk, with mature forests providing many of the environmentally valuable resources (e.g. wildlife trees, coarse woody debris, wildlife movement corridors) that provide suitable habitat (Map 1).

2.2.2.2 Guidelines

- Design the development to protect sensitive ecosystems including wetlands, creeks, riparian areas, rock outcrops, cliffs, foreshore areas and mature forests.
- The proponent shall retain a QEP to review and assess existing mapped species at risk critical habitat based on current baseline conditions. The QEP would provide recommendations for adjusting and amending the habitat mapping and providing recommendations for preservation and conservation measures.
- Conduct a survey for raptor nests, particularly those of northern goshawk, as well as marbled murrelet of mature forests within the development pods prior to detailed design in order to identify any nests and nesting habitat, and to ensure that appropriate protective buffers are in place.
- Avoid disturbances and vegetation clearing within the areas of mature forests where possible and minimize disturbances where not. If clearing or other disturbance is proposed within areas of mature forest, have a survey conducted by a QEP for the following species at risk. If any are found, appropriate mitigation measures will be determined.
 - Moss species, including Holzinger's brachythecium, Roell's brotherella, Callicladium haldanianum, & Tripterocladium leucocladulum; and
 - Northern rubber boa.



- Effort should be made to retain as much existing vegetation as possible, especially significant vegetation and habitat, using the following guidelines:
 - Minimize the extent of cut and fill required for road construction and instead conform to the natural contours of the landscape. All cut and fill slopes should be treated with growing medium, hydroseeded, and planted with native vegetation.
 - Plan open space areas to incorporate stands of mature forest.
 - Retain existing ground vegetation and trees where possible within development areas.
 - Delineate the location of all veteran trees within proposed development pods and managing design to avoid disturbance and removal where possible. Protect existing veteran trees within appropriately sized vegetation clumps.
- Minimize disturbances of rock outcrops and cliffs through appropriate road design and clumping development to allow for rock outcrop preservation opportunities. If any blasting or other disturbance of rock outcrops is to occur, it is recommended that this occur between late spring and early fall when mammals are less likely to be seeking shelter and temperatures are warm enough for reptiles to maintain body heat away from the rocks. Prior to any disturbance of these habitats, have targeted surveys conducted by a QEP for the following species at risk. If any are located, appropriate mitigation measures will be determined.
 - rubber boa and sharp-tailed snake;
 - Peregrine falcon nests, particularly between April 1 and July 31; and
 - Washington springbeauty, in late spring to early summer.
- Identify and manage potentially hazardous trees, while maintaining as many of these as possible for wildlife habitat. An assessment of any potential hazard trees should be conducted by a certified Wildlife/Danger Tree Assessor. Any trees removed within the riparian areas must also be replaced as per the BC Ministry of Environment, Lands and Parks tree replacement criteria.
- It is recommended that as much coarse woody debris (CWD), of varying sizes and stages of decay, be maintained as possible. If CWD is to be removed, this should occur between late spring and early fall when mammals are less likely to be seeking shelter. There is the opportunity to improve existing riparian habitat by relocating any pieces of CWD needing to be removed into the riparian areas
- Site the multifamily residential buildings so as to provide preservation opportunities as well as movement corridors for wildlife in both listed and unlisted ecological communities.
- All vegetation clearing should occur outside of the typical bird breeding period of April 1 to July 31 to ensure that no active nests are disturbed. If clearing is to take place during this window, it must be preceded by a nesting bird survey, conducted by a QEP, and any active nests protected with suitable buffers until nesting is complete. Particular attention should be paid to:
 - forest edges and openings for band-tailed pigeon & goshawk;
 - rock outcrops and sparsely vegetated areas for common nighthawk & peregrine falcon; and
 - wildlife trees and snags for western screech-owl, goshawk, & olive-sided flycatcher.
- Wildlife attractants, including food and other odorous materials, must not left at construction sites and must be secured anytime the construction site is unattended. Further, bear safe guidelines should be should be incorporated into the proposed development, including garbage facilities and landscaping.



2.2.3 Ecological Sustainability

2.2.3.1 Description and Justification

The Area D OCP recognizes that Electoral Area D provides important habitat for a diversity of wildlife and has developed a number of objectives for ecological sustainability, although these have not been developed into a specific Development Permit Area. The majority of these objectives are addressed in the sections above (Riparian Protection DPA, Marine Shoreline Areas and Wildlife Habitat Areas), however, the guidelines provided below deal with project in its entirety, and are not area based.

2.2.3.2 Guidelines

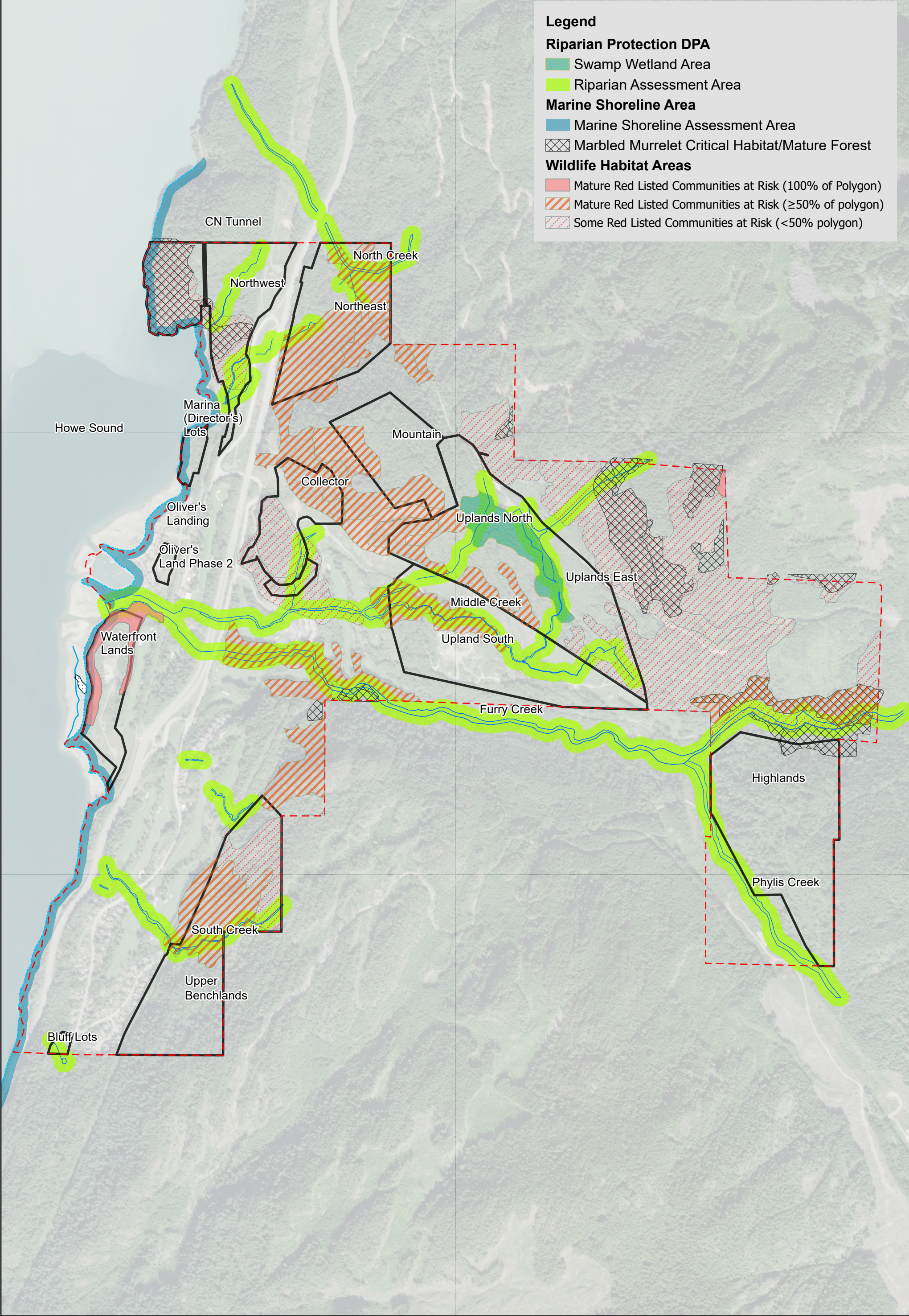
In addition to the objectives and policies detailed in the Area D OCP, the following project specific guidelines are recommended for the Furry Creek Neighbourhood.

- Development and construction of the property should follow guidelines and recommendations outlined in: *Environmental Best Management Practices for Urban and Rural Land Development* (BC MOE, 2014, or latest version). This includes best management recommendations for storm water, pollution prevention and wildlife and ecosystem management.
- An invasive species survey and management plan that incorporates the recommendations included in this report should be developed by a QEP and implemented for the subject property. The plan should be prepared prior to any land clearing or earthworks.
- Development of a Stormwater Management Plan and a Sediment Erosion and Control Plan for site preparation, construction and post-construction. Minimizing land disturbance in areas subject to possible erosion during seasonal periods of high rainfall.
- The extensive BC Hydro Right-of ways, particularly in the Uplands and Collector neighbourhoods, provides potential opportunities to create bioponds for stormwater detention, bio-treatment and infiltration
- The effects of shading on common property (i.e. the beach to the seaward side of the Waterfront Lands) should be considered for building siting and heights.



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Legend

Riparian Protection DPA

- Swamp Wetland Area
- Riparian Assessment Area

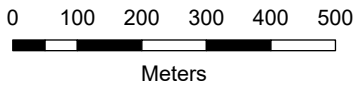
Marine Shoreline Area

- Marine Shoreline Assessment Area
- Marbled Murrelet Critical Habitat/Mature Forest

Wildlife Habitat Areas

- Mature Red Listed Communities at Risk (100% of Polygon)
- Mature Red Listed Communities at Risk ($\geq 50\%$ of polygon)
- Some Red Listed Communities at Risk ($< 50\%$ polygon)

GIS Cartographer: Nicola Church
Date: July 21, 2020
CERG File#: 926-01-02-01
Projection: UTM Zone 10N NAD83
Orthophoto/Data: ESRI/BC Gov
High Water Marks are not from survey. For reference only and not to be used for development
Riparian setback locations to be determined following completion of legal survey of high water mark locations.



Map 1 - Proposed Environmental Development Permit Area

Furry Creek Neighborhood
Furry Creek, British Columbia