



Development Permit Application

Referral Form – RDCK File DP2502A

Date: May 13, 2025

You are requested to comment on the attached DEVELOPMENT PERMIT for potential effect on your agency's interests. We would appreciate your response WITHIN 30 DAYS (PRIOR TO June 13, 2025). If no response is received within that time, it will be assumed that your agency's interests are unaffected.

LEGAL DESCRIPTION & GENERAL LOCATION:

16740 Highway 3A, Kootenay Bay, Electoral Area 'A'

LOT 1 DISTRICT LOT 4595 KOOTENAY DISTRICT PLAN 15592 (PID: 009-547-304)

PRESENT USE AND PURPOSE OF PERMIT REQUESTED:

The subject property is located along the east shore of Kootenay Lake near Kootenay Bay. It is 1.1 hectares in size and is used for residential purposes.

This Environmentally Sensitive Development Permit (ESDP) application has been submitted to authorize the installation of a marine rail system within the ESDP area that extends 15 metres upland from the Natural Boundary of Kootenay Lake.

Staff note that a "Change Approval – Changes In and About a Stream (File 4008309)" was issued by the Ministry of Water, Land and Resource Stewardship on March 18, 2025 based on the Riparian Assessment prepared by Masse Environmental, dated February 16, 2024 that is included in this referral.

AREA OF PROPERTY AFFECTED	ALR STATUS	ZONING	OCP
1.1 hectares (2.8 acres)	N/A	N/A	Comprehensive Land Use Bylaw No. 2315 Country Residential (RC)

APPLICANT:

Bonnie Johnston

OTHER INFORMATION: ADVISORY PLANNING COMMISSION PLEASE NOTE:

If your Advisory Planning Commission plans to hold a meeting to discuss this Development Permit application, please note that the applicants must be provided with an opportunity to attend such meeting, in accordance with Section 461, subsection (8) of the *Local Government Act*, which reads as follows:

"If the commission is considering an amendment to a plan or bylaw, or the issue of a permit, the applicant for the amendment or permit is entitled to attend meetings of the commission and be heard."

Please fill out the Response Summary on the back of this form. If your agency's interests are 'Unaffected' no further information is necessary. In all other cases, we would appreciate receiving additional information to substantiate your position and, if necessary, outline any conditions related to your position. Please note any legislation or official government policy which would affect our consideration of this permit.

**ZACHARI GIACOMAZZO, PLANNER
REGIONAL DISTRICT OF CENTRAL KOOTENAY**

- ☒ MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE
☒ HABITAT BRANCH (Environment)
☒ FRONTCOUNTER BC (MFLNRORD)
☐ AGRICULTURAL LAND COMMISSION
☐ REGIONAL AGROLOGIST

REGIONAL DISTRICT OF CENTRAL KOOTENAY

DIRECTORS FOR:

- ☒ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H ☐ I ☐ J
☐ K

ALTERNATIVE DIRECTORS FOR:

☐ ENERGY & MINES ☐ MUNICIPAL AFFAIRS & HOUSING ☒ INTERIOR HEALTH, HBE TEAM ☒ KOOTENAY LAKES PARTNERSHIP (FORESHORE DEVELOPMENT PERMITS) ☐ SCHOOL DISTRICT NO. ☐ WATER SYSTEM OR IRRIGATION DISTRICT ☒ UTILITIES (FORTIS, BC HYDRO, NELSON HYDRO, COLUMBIA POWER)	☒ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H ☐ I ☐ J ☐ K ☒ APHC AREA A ☐ RDCK FIRE SERVICES ☒ RDCK EMERGENCY SERVICES ☒ RDCK BUILDING SERVICES ☐ RDCK UTILITY SERVICES ☐ RDCK RESOURCE RECOVERY ☐ RDCK REGIONAL PARKS FIRST NATIONS ☒ KTUNAXA NATION COUNCIL (ALL REFERRALS) YAQAN NU?KIY (LOWER KOOTENAY) ?AKINK'UM?ASNUQ?I?IT (TOBACCO PLAINS) ?AKISQNUK (COLUMBIA LAKE) ?AQ'AM (ST. MARY'S) INSERT COMMENTS ON REVERSE . . .
--	---

The personal information on this form is being collected pursuant to *Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015* for the purpose of determining whether the application will affect the interests of other agencies or adjacent property owners. The collection, use and disclosure of personal information are subject to the provisions of FIPPA. Any submissions made are considered a public record for the purposes of this application. Only personal contact information will be removed. If you have any questions about the collection of your personal information, contact the Regional District Privacy Officer at 250.352.6665 (toll free 1.800.268.7325), info@rdck.bc.ca, or RDCK Privacy Officer, Box 590, 202 Lakeside Drive, Nelson, BC V1L 5R4.

RESPONSE SUMMARY
FILE: DP2502A APPLICANT: BONNIE JOHNSTON

Name:

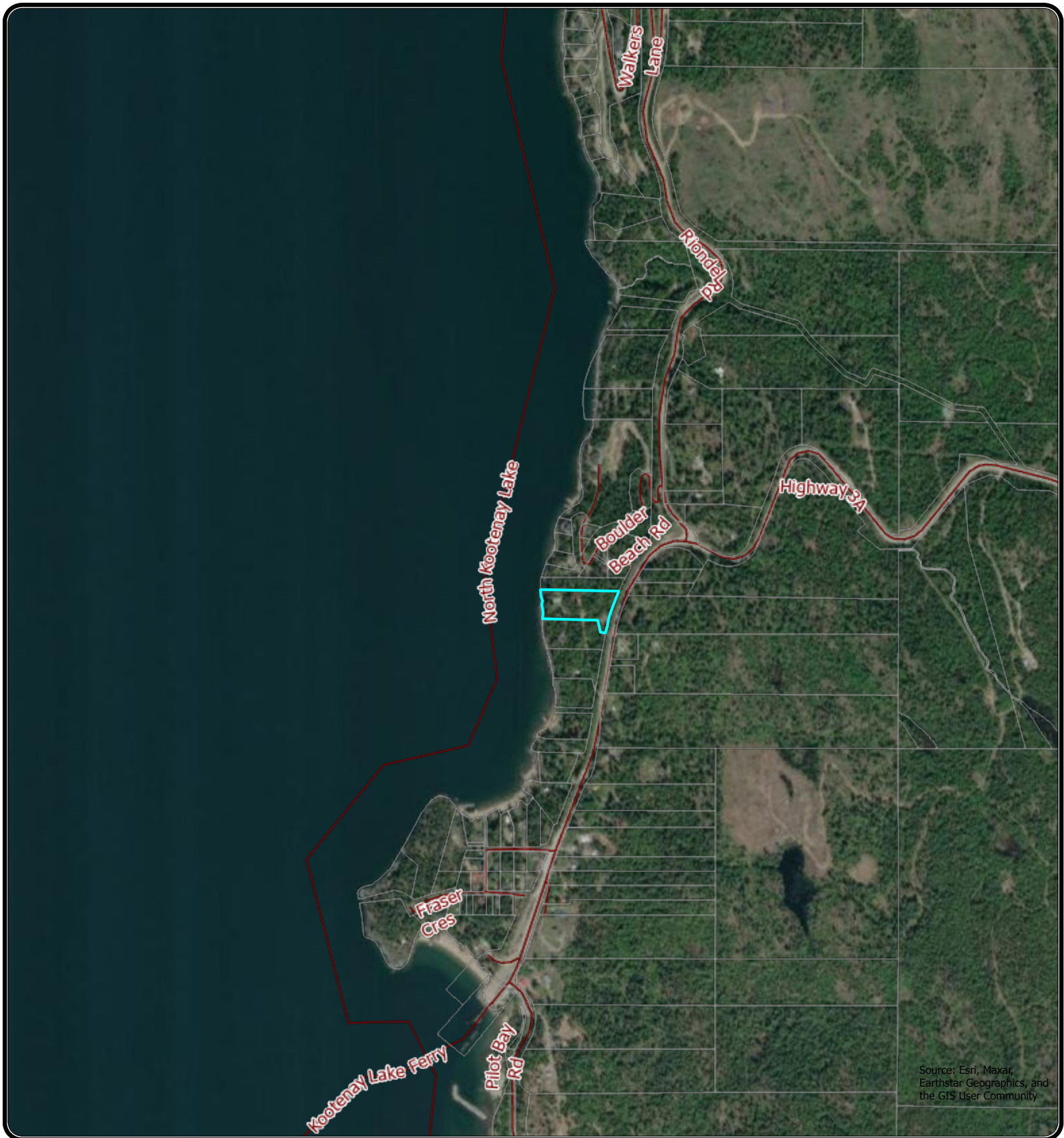
Date:

Agency:

Title:

RETURN TO: ZACHARI GIACOMAZZO, PLANNER
DEVELOPMENT AND COMMUNITY SUSTAINABILITY SERVICES
REGIONAL DISTRICT OF CENTRAL KOOTENAY
BOX 590, 202 LAKESIDE DRIVE
NELSON, BC V1L 5R4
Ph. 250-352-8190
Email: plandept@rdck.bc.ca

RDCK Map



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



REGIONAL DISTRICT OF CENTRAL KOOTENAY
Box 590, 202 Lakeside Drive,
Nelson, BC V1L 5R4
Phone: 1-800-268-7325 www.rdck.bc.ca
maps@rdck.bc.ca

Legend

- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines

Map Scale:

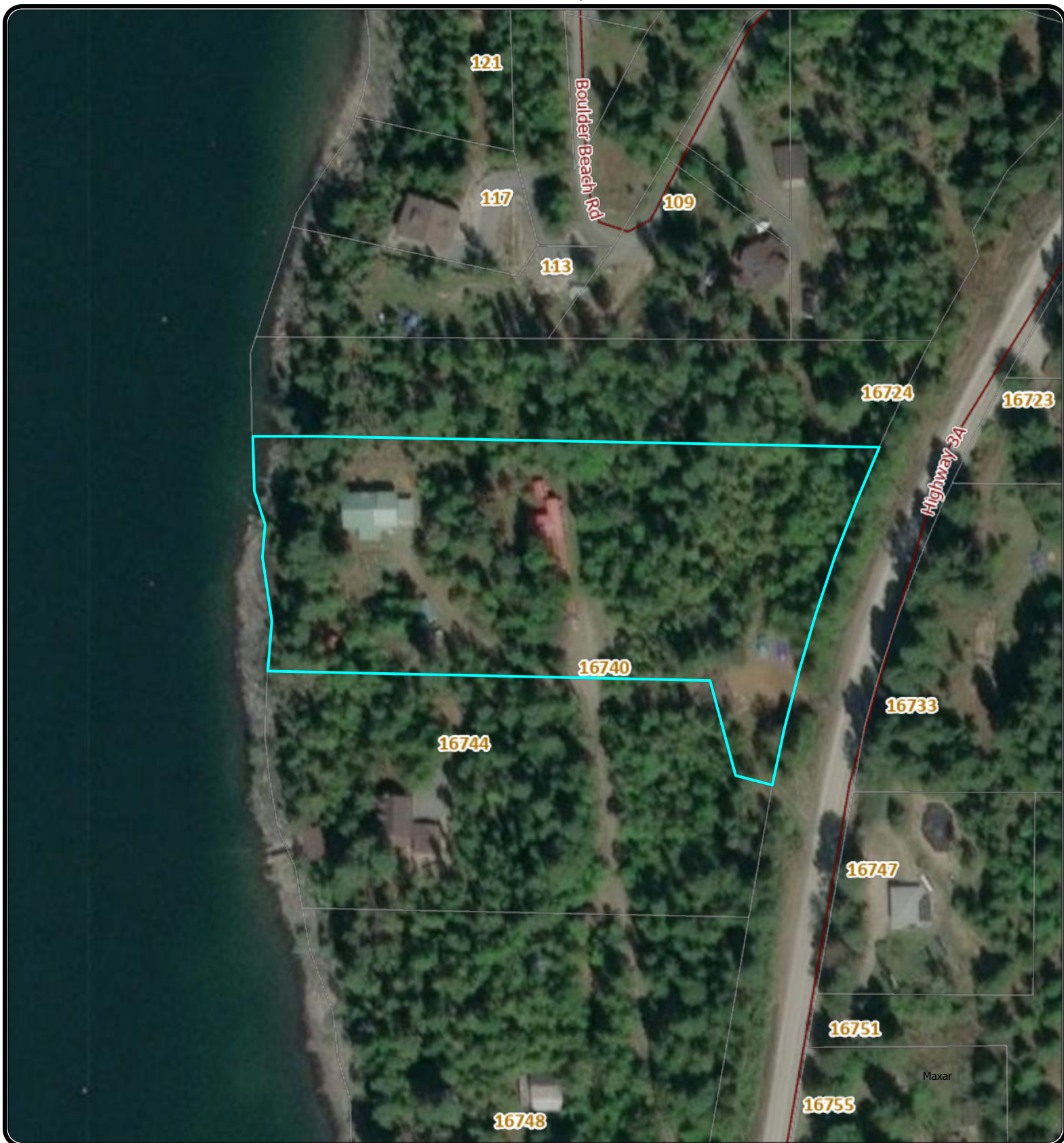
1:18,056

Date: April 7, 2025



The mapping information shown are approximate representations and should only be used for reference purposes. The Regional District of Central Kootenay is not responsible for any errors or omissions on this map.

RDCK Map



REGIONAL DISTRICT OF CENTRAL KOOTENAY
Box 590, 202 Lakeside Drive,
Nelson, BC V1L 5R4
Phone: 1-800-268-7325 www.rdck.bc.ca
maps@rdck.bc.ca

Legend

- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines
- Address Points

Map Scale:

1:2,257

Date: April 7, 2025



The mapping information shown are approximate representations and should only be used for reference purposes. The Regional District of Central Kootenay is not responsible for any errors or omissions on this map.



16740 Hwy 3A, Kootenay Bay, BC
Riparian Assessment



Prepared for:
Regional District of Central Kootenay
202 Lakeside Drive
Nelson, BC, V1L 5R4

February 16, 2024

Disclosure Statement

This report has been prepared by Fiona Lau B.Tech., ASCT. and reviewed by Renae Mackas, RP Bio.

I, Fiona Lau, hereby certify that:

- a) I am a qualified environmental professional (QEP), as defined in the Riparian Areas Regulation made under the Fish Protection Act;
- b) I am qualified to carry out this part of the assessment of the development proposal made by the developer;
- c) I have carried out my assessment of the development proposal, and my assessment is set out in this Assessment Report; and
- d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Protection Regulation.

This report has been prepared by a QEP who has not acted for, or as an agent(s) of the RDCK and was at the expense of the property owner.

TABLE OF CONTENTS

Table of Contents	i
List of Tables	ii
List of Appendices	ii
1 Introduction	1
2 Project Overview	1
2.1 Site Description	1
2.1.1 Location	1
2.1.2 Watercourses	2
2.1.3 Riparian Vegetation	2
2.1.4 Aquatic Habitat	3
2.1.5 Wildlife Habitat	4
2.1.6 Species at Risk	4
2.1.7 Invasive Species	5
2.2 Existing Development	6
2.3 Proposed Development	7
3 Regulatory Overview	7
3.1 Riparian Area Protection Regulation (RAPR) Review	7
3.2 Kootenay Lake Shoreline Management Guidelines	8
4 Potential Ecological Impacts	9
5 Measures to Protect the Integrity of the SPEA	9
5.1 Danger Trees	9
5.2 Windthrow	9
5.3 Slope Stability	9
5.4 Protection of Trees and Vegetation in the SPEA	9
5.5 Encroachment	9
5.6 Erosion and Sediment Control	10
5.7 Stormwater Management	10
5.8 Floodplain Concerns	10
5.9 Fish and Wildlife Protection	10
5.10 Invasive Plant Management	10
6 Conclusion	10
7 References	11

LIST OF TABLES

Table 1. Species at Risk confirmed in and around Kootenay Bay.	5
Table 2. Results of detailed RAPR assessment for Kootenay Lake.	8
Table 3. Aquatic and archaeological risk results	8

LIST OF APPENDICES

Appendix 1. Site Location Map	
Appendix 2. Proposed Site Plan and SPEA Map	
Appendix 3. Archaeological Chance Find Procedures	

1 INTRODUCTION

Masse Environmental Consultants Ltd. was retained by Rosanne Muryнка (Owner) to conduct a riparian assessment to accompany an application for an Environmentally Sensitive Development Permit (ESDP) on her waterfront property at 16740 Hwy 3A, Kootenay Bay, BC (LOT 1 PLAN NEP15592 DISTRICT LOT 4595 KOOTENAY LAND DISTRICT; PID 009-547-304). The development permit is being triggered by the Owner's proposal to install a marine rail system within the 15 m ESDP area.

A site visit was completed on January 31, 2024 by Fiona Lau B.Tech., ASCT., to conduct a riparian assessment on the property. The riparian assessment evaluates the existing conditions of the riparian area (up to 30 m from the natural boundary of Kootenay Lake), identifies habitat values, assesses potential environmental impacts, and recommends measures to mitigate or compensate for the alteration of the riparian area to maintain ecological values. It is based on the following regulatory framework and best management practices documents:

- Electoral Area 'A' Rural Official Community Plan Bylaw No. 2315, 2013
- RDCK Floodplain Management Bylaw No. 2080, 2009
- British Columbia Riparian Areas Protection Regulation
- Kootenay Lake Shoreline Management Guidelines
- British Columbia Water Sustainability Act
- British Columbia Wildlife Act
- Federal Migratory Birds Convention Act
- Natural Resources Best Management Practices
- Develop with Care. Environmental Guidelines for Urban and Rural Land Development in British Columbia
- On the Living Edge: Your Handbook for Waterfront Living

2 PROJECT OVERVIEW

2.1 Site Description

2.1.1 Location

The subject property is located ~ 3.8 km west from the community of Crawford Bay in Area A of the Regional District of Central Kootenay (RDCK), (see Appendix 1 for Location Map). The property is 2.77 acres, with ~68 m of frontage on the main arm of Kootenay Lake, ~0.8 km north of the Kootenay Bay Ferry Terminal. This property has a western aspect, is exposed to westerly winds, and ranges in elevation from ~538 to 590 m above sea level. The property is bordered by private property to the north and south, Hwy 3A (MoTI RoW) to the east and Kootenay Lake to the west.

The area falls within the Very Dry Warm Interior Cedar Hemlock (ICHxw) biogeoclimatic subzone. The ICHxw is a relatively small subzone occurring at low elevations in the southernmost parts of the Columbia Basin in BC (MacKillop and Ehman 2016). The climate is characterized by very hot, very dry summers and mild dry winters (MacKillop and Ehman 2016). The ICHxw subzone contains forests with a diverse assemblage of tree and shrub species and a disproportionately large number of wildlife and plant species at risk (MacKillop and Ehman 2016).

2.1.2 Watercourses

Kootenay Lake

Kootenay Lake borders the subject property along the western boundary; it is a long, narrow, and deep lake with a surface area of approximately 400 km². Kootenay Lake's main inflows are the Kootenay River to the south and the Duncan River to the north. The lake drains through the West Arm into the Kootenay River. Lake levels can vary up to 4 m throughout the year, affecting the extent of the exposed shoreline (Fortis 2024).

The natural boundary is commonly referred to as the “high water mark” around a lake or wetland. Based on the definition of high-water mark¹, the natural boundary is close to the actual western property boundary, as shown on Parcel Map BC (2024), and will be used to delineate the 15 m RDCK ESDP area and streamside protection and enhancement area (SPEA) setbacks in accordance with the Riparian Area Protection Regulation (RAPR).

2.1.3 Riparian Vegetation

The riparian area is relatively undisturbed with existing development sited largely outside of the 15 m ESDP area. The riparian area along Kootenay Lake foreshore is relatively steep and rocky, with a shallow topsoil layer that supports a mix of both mature and young native trees, shrubs and herbaceous species (Photo 1 - Photo 3). The first 5 m above the natural boundary is bedrock with very sparse to little vegetation (Photo 4). Beyond the initial 5 m from the natural boundary, tree species in the ESDP area consist of Interior Douglas-fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), ponderosa pine (*Pinus ponderosa*), paper birch (*Betula papyrifera*), Western redcedar (*Thuja plicata*) and black cottonwood (*Betula occidentalis*). The shrub and herb community includes kinnikinnick (*Arctostaphylos uva-ursi*), red-osier dogwood (*Cornus sericea*), soopalallie (*Shepardia canadensis*) and bunch grasses. The

¹ High water mark means the visible high water mark of a watercourse where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the watercourse a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain (RDCK 2013).

riparian vegetation provides shade, litterfall and insect drop that benefit aquatic organisms in Kootenay Lake.



Photo 1. Undisturbed riparian forest area along shoreline of property.



Photo 2. Mixed riparian forest area above proposed marine rails.



Photo 3. Undisturbed riparian forest below house.



Photo 4. Rocky riparian area with sparse flood-tolerant trees within 5 m of property boundary.

2.1.4 Aquatic Habitat

Lakebed substrate along this section of foreshore consists of bedrock with overlying angular boulders (Photo 5 and Photo 6). Fish habitat is considered moderate as it does provide deep water habitat for larger fish and some cover habitat along the shoreline. Several species of regional interest reside in Kootenay Lake including Kokanee (*Oncorhynchus nerka*), Rainbow Trout (*O. mykiss*), Bull Trout (*Salvelinus confluentus*; BC-Blue-Listed; SARA Special Concern), White Sturgeon (*Acipenser transmontanus* pop.1; BC Red-Listed, SARA Endangered), Westslope Cutthroat Trout (*O. clarki lewisi*; BC Blue-Listed; SARA Special Concern), and Burbot (*Lota lota* pop.1; BC-Red-Listed).

Mussel beds have been identified along the shoreline of Kootenay Lake in multiple locations both on the West Arm and main body of the lake (p. comm K. Andrusak). Habitat along this section of shoreline does not support mussels.



Photo 5. South view of foreshore aquatic area.



Photo 6. North view of foreshore aquatic area.

2.1.5 Wildlife Habitat

Riparian ecosystems offer important habitat features for wildlife, affording them essential resources like water, shelter, and food. These areas frequently serve as migration corridors connecting aquatic, riparian, and upland environments, playing a pivotal role in the life cycles of numerous species.

Mature conifer and deciduous trees along the shoreline provide suitable perch and nesting habitat for raptors, and wildlife snags provide ideal nesting and feeding habitat for cavity dwellers and bats. Both perching and nesting habitat are present within the riparian area.

Warm rocky sites provide suitable habitat for reptiles such as garter snakes (*Thamnophis* spp.), Northern alligator lizard (*Elgaria coerulea*), Northern rubber boa (*Charina bottae*), and Western skink (*Plestiodon skiltonianus*). Rocky outcrops with warm exposure along the foreshore provide basking sites, food sources and cover habitat for reptiles. The site supports the above habitat features.

2.1.6 Species at Risk

The BC Conservation Data Center (CDC) occurrence data and critical habitat for Federally listed species were queried within iMap BC, using a 10 km buffer around the center point of the subject property. In addition, the Wildlife Species Inventory observation points within iMap BC (2024) and iNaturalist (2024) were also queried for nearby observations within a 5 km buffer around the property. The query results are presented in Appendix 3. Potential occurrence on the property was assessed as confirmed, likely,

possible, unlikely, or unknown, according to known species habitat affinities, the habitat profile of the property, and on proximity to mapped occurrences. Based on these queries, two species at risk were identified to be present in and around Kootenay Bay and are either ‘likely’ or ‘possible’ to occur on the subject property (Table 1).

Table 1. Species at Risk confirmed in and around Kootenay Bay.

Species	Latin Name	BC List ¹	COSEWIC ² / SARA ³
Western Skink	<i>Plestiodon skiltonianus</i>	Blue	Special Concern
Banded Tiger Snail	<i>Anguspira kochi</i>	Blue	-

The subject property is within the Southern Mountain Caribou (*Rangifer tarandus*; BC Red listed; SARA Endangered) critical habitat polygon (Matrix Range 2; EC 2014). Matrix range is the area adjacent to core habitat that has periodic or low use by caribou but supports primary prey and associated predators that have the potential to affect the caribou subpopulation. Critical habitat attributes for matrix range are those that provide “ecological conditions that allow for low predation risk, defined as wolf population densities of < 3 wolves/1000km²” (EC 2014).

In addition to this list, many bat species are blue-listed in BC (e.g.: little brown myotis (*Myotis lucifugus*), Western small-footed myotis (*Myotis ciliolabrum*), and the Yuma myotis (*Myotis yumanensis*). The little brown myotis is also listed as ‘endangered’ under the Species At Risk Act. Bat roosting habitat includes tall, live or dead trees with crevices, peeling bark, or cavities. The mature trees on the property could provide roosting habitat for bats and the riparian areas on and near the property could provide foraging habitat for bats.

2.1.7 Invasive Species

Central Kootenay Invasive Species Society (CKISS) manages invasive species regionally using a prioritized approach. The management strategy for a specific species is based on a number of factors including the phase of invasion and the potential impacts of the species (CKISS 2023). Priority species lists can be found at <https://ckiss.ca/species/invasive-plant-priority-lists/>.

Based on the CKISS 2023 Priority List, there were no species identified on the subject property that are actively managed regionally.

2.2 Existing Development

The property is mostly undeveloped within the 15 m ESDP area except for the existing elevated deck structure (Photo 7), access trail (Photo 8) and two water lines (Photo 9).

Existing development beyond the 15 m ESDP area but within the 30 m riparian assessment area consists of a residential home (Photo 10), parking area, bunkhouse (Photo 8) and access path to foreshore. The house is serviced by their own waterline extracted from Kootenay Lake and their own septic system which consist of a septic tank located next to the house and the septic field located above the house outside of the 30 m setback area.



Photo 7. Existing elevated deck within 15 m setback.



Photo 8. Existing access path (within 15 m setback) and bunk house (outside 15 m setback).



Photo 9. Existing water lines and pumphouse.



Photo 10. Existing house within 30 m riparian assessment area.

2.3 Proposed Development

The proposed marine rail system includes one set of rails ~20 m long by 1.4 m wide located mostly below the HWM with a ~ 5 m of the rail system above the HWM within the property limits (Photo 11). The total footprint within the ESDP area is 7 m². The rail system consists of two parallel metal rails (3 cm in width) that sit ~30 cm above the ground, supported by crossbeams that are anchored to the bedrock every 3 m. An example of this type of system is shown in Photo 12. Refer to Appendix 2 for proposed site plan.



Photo 11. View of proposed marine rail location, looking west.



Photo 12. Example of marine rail support system.

3 REGULATORY OVERVIEW

3.1 Riparian Area Protection Regulation (RAPR) Review

The 15 m ESDP setback from the boundary of Kootenay Lake was compared with the Riparian Area Protection Regulation (RAPR) criteria by conducting a detailed assessment of the subject property and determining the Streamside Protection and Enhancement Area (SPEA) setback. Results for the Zones of Sensitivity (ZOS) and SPEA are presented in Table 1 and Appendix 2.

As per the RAPR, the large woody debris (LWD) and litter ZOS were plotted 15 m inland from the HWM of Kootenay Lake with the shade ZOS plotted 0 m from the HWM of Kootenay Lake. The SPEA setback is determined based on the ZOS with the greatest width. Therefore, within the subject property the SPEA from the HWM of Kootenay Lake was determined to be 15 m (Table 2), which matches the 15 m ESDP setback.

Table 2. Results of detailed RAPR assessment for Kootenay Lake.

Feature Type	SPVT ¹	Zones of Sensitivity			SPEA ³
		LWD ²	Litter fall	Shade	
Kootenay Lake	TR	15 m	15 m	0 m	15 m

¹ SPVT: site potential vegetation type (TR=tree)² LWD- large woody debris³ SPEA- streamside protection and enhancement area

3.2 Kootenay Lake Shoreline Management Guidelines

The Kootenay Lake Foreshore Integrated Management Planning (FIMP; Schleppe and McPherson 2022), the Foreshore Inventory Mapping (FIM; KLP 2023) and the Kootenay Lake Shoreline Management Guidelines (KLP 2020) were used to help determine site-specific risks for riparian habitat, Ktunaxa Nation cultural values, and archaeological resources along the shoreline (Table 3). The property is located within FIM Segment 134. The aquatic habitat index rating was rated as moderate for this segment because of the moderate value juvenile rearing habitat. Based on the Ecological Activity Risk Matrix (Table 3b Shoreline Guidance Document KLP 2020), the construction of new boat rail launch is considered a 'moderate ecological risk' activity along this segment of foreshore.

Table 3. Aquatic and archaeological risk results

Aquatic Habitat Index Rating (AHI)	Aquatic Sensitivity	Archaeological Risk	Enhanced Engagement Required (Work below HWM)
Moderate	No	Yellow	Yes

According to the Kootenay Lake Shoreline Management Document, the proposed activity on the site has moderate archaeological risk. Further assessment of archaeological risk is beyond the scope of this report. For further information please consult the Kootenay Lake Shoreline Guidance Document (KLP 2020).

Kootenay Lake is part of the traditional territory of the Ktunaxa, Sinixt and Syilx (Okanagan) First Nations and archaeological evidence is documented at multiple sites along the shoreline and mountain sides of Kootenay Lake. Archaeological Chance Find Procedures are provided in Appendix 3 for guidance on which protocols to follow in the event of a chance archaeological find to ensure that archaeological sites are documented and protected as required for compliance with the BC Heritage Conservation Act. First Nations consultation will be completed by the Province during the WSA Section 11 and/or Tenure review process.

4 POTENTIAL ECOLOGICAL IMPACTS

The proposed marine rail installation is expected to have minimal ecological impacts as there will be no riparian vegetation removal and its design does not affect wildlife movement along the shoreline. Larger mammals would likely move above the rail in the forest, and reptiles/small mammals would be unaffected as the rails are elevated. Being situated entirely on bedrock mitigates erosion and sediment control issues.

The work will be completed by hand along the existing access path and/ or by boat, with no foreseen impacts other than short term potential noise caused from drilling and construction during the installation of the rail system.

Following the RAPR criteria, Section 5 outlines the measures to protect the integrity of the SPEA.

5 MEASURES TO PROTECT THE INTEGRITY OF THE SPEA

This section provides measures to protect the integrity of the SPEA as described in the RAPR, as well as recommended best management practices to minimize the potential effects of the development.

5.1 Danger Trees

No danger trees around the proposed marine rail were identified. Further assessment of potential danger trees is outside the scope of this report. Any proposed danger tree removal should be assessed by a certified arborist, prior to removal.

5.2 Windthrow

No clearing of trees is proposed on the property; therefore, changes to windthrow risk are minimal. Additional assessment of windthrow risk is beyond the scope of this report, and any such assessment should be led by a Registered Professional Forester (RPF).

5.3 Slope Stability

No signs of slope instability were observed on the property. Further assessment of geotechnical hazard is beyond the scope of this report, and any such assessment should be led by a P.Geo, or P.Eng.

5.4 Protection of Trees and Vegetation in the SPEA

To minimize impacts to existing vegetation within the SPEA, access to the worksite will be limited to foot traffic and will occur on the existing access path.

5.5 Encroachment

Protection measures to minimize effects of the encroachment within the SPEA are:

- Marine rail footprint is proposed in an area with no riparian vegetation.
- Marine rail is elevated and allows waves to pass through.

5.6 Erosion and Sediment Control

No erosion and sediment control measures are proposed as the work area is within an area of bedrock and has no risk of erosion.

5.7 Stormwater Management

No stormwater management required.

5.8 Floodplain Concerns

No floodplain concerns.

5.9 Fish and Wildlife Protection

To minimize disturbance to fish, wildlife, and their habitat, the following measures will be implemented:

- Avoid any modifications to the foreshore substrate and preserve riparian vegetation.
- Marine rail is elevated and will not impact natural fish/wildlife movement along the shoreline.

5.10 Invasive Plant Management

As no large machinery or vehicles will be entering the SPEA, there are no proposed invasive plant management mitigations.

6 CONCLUSION

There are minimal biological impacts associated with the authorization of the marine rail located within the SPEA. Provided that measures to protect the SPEA are followed, any negative impacts from the proposed authorization of the marine rail are anticipated to be minimal.

Sincerely,



Fiona Lau, BTech., ASCT

fiona@masseenvironmental.com

Reviewed by:



Renae Mackas, RPBio

Masse Environmental Consultants

7 REFERENCES

- [BC]. 2019. Riparian Areas Protection Regulation. B.C. Reg. 178/2019, Last amended February 5, 2021 by B.C. Reg. 11/2021. Victoria, British Columbia, Canada.
- [BC]. 2023. iMap BC Mapping Application. Available online at: <https://www2.gov.bc.ca/gov/content/data/geographic-data-services/web-based-mapping/imapbc>
- [BC] Province of British Columbia. 2023. Natural Resources Best Management Practices. Available at: <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/best-management-practices>
- [EC] Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (*Rangifer tarandus caribou*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. viii + 103 pp
- Fortis BC. 2024. Kootenay Lake Levels. Available online at: <https://www.fortisbc.com/in-your-community/kootenay-lake-level-monitoring/kootenay-lake-levels>
- Gov BC. 2022. Requirements and Best Management Practices for Making Changes In and About a Stream in British Columbia, V. 2022.01. Government of British Columbia.
- Kipp, S. and Callaway, C. 2002. On the Living Edge. Your Handbook for Waterfront Living.
- [KLP] Kootenay Lake Partnership. Ktunaxa Nation Council, Regional District of Central Kootenay, Ministry of Forests, Lands, and Natural Resource Operations, Ecoscape Environmental Consultants Ltd., Tipi Mountain Eco-Cultural Services Ltd. The Firelight Group Ltd., Wayne Choquette. 2020. Shoreline Guidance Document – Kootenay Lake. Prepared for Kootenay Lake Partnership.
- [KLP]. Kootenay Lake Partnership. 2023. Kootenay Lake Shoreline Inventory Mapping Interactive Map. Available online at: <http://kootenaylakepartnership.com/>
- [LTSA] Land Title and Survey Authority of British Columbia. 2024. ParcelMap BC Mapping Application. Available online at: <https://ltsa.ca/products-services/parcelmap-bc/>

Mackillop, D. and Ehman, A. 2016. A Field Guide to Site Classification and Identification for Southeast British Columbia: the South-Central Columbia Mountains. Province of B.C., Victoria, B.C. Land Management Handbook 70.

[MFLNRORD] BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development. 2019. Riparian Areas Protection Regulation Technical Assessment Manual. V 1.1. November 2019.

[MoE] BC Ministry of Environment. 2014. Develop with Care 2014. Environmental Guidelines for Urban and Rural Land Development in British Columbia. Province of British Columbia. Victoria, British Columbia, Canada.

[RDCK] Regional District of Central Kootenays. 2013. Electoral Area 'A' Rural Official Community Plan Bylaw No. 2315, 2013.

[RDCK]. Regional District of Central Kootenay N.D. A Resource for Kootenay Lake Living. Available online at:
https://www.rdck.ca/assets/Services/Land-Use-and-Planning/Documents/2021-04-20-KLDPA_Resource-V5.pdf

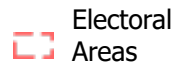
Schleppe, J.¹, and S. McPherson². 2022. Kootenay Lake Foreshore Integrated Management Planning. Prepared for Living Lakes Canada. Prepared by: Ecoscape Environmental Consultants Ltd.¹, and Lotic Environmental Ltd.²

APPENDIX 1. SITE LOCATION MAP



RDCK Map

Legend



16740 Hwy 3A
Kootenay Bay

Location Map

Map Scale:

1:100,000



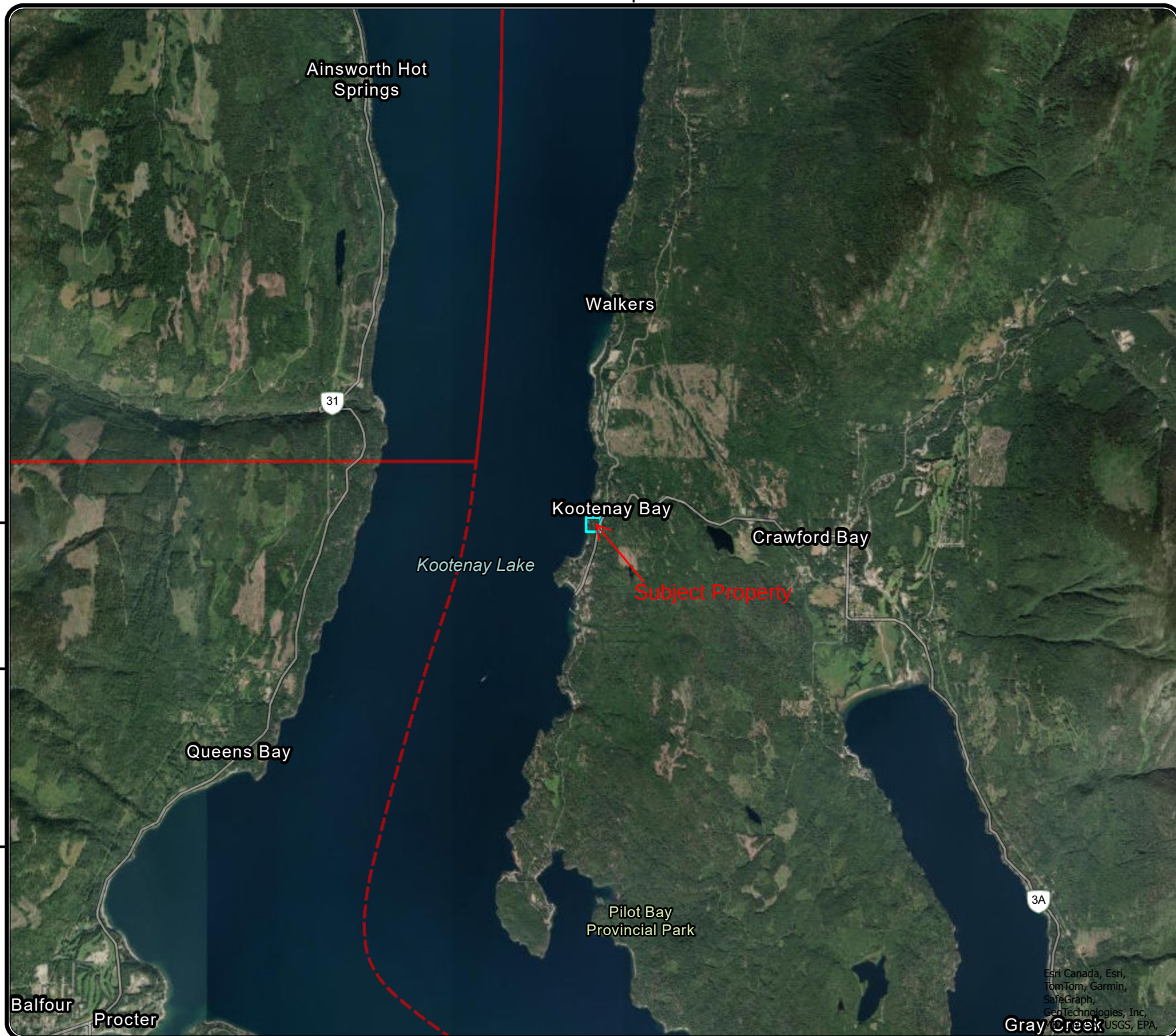
Date:

January 8, 2024

REGIONAL DISTRICT
OF CENTRAL KOOTENAY
Box 590, 202 Lakeside Drive,
Nelson, BC V1L 5R4
Phone: 1-800-268-7325
www.rdck.bc.ca
maps@rdck.bc.ca

The mapping information
shown are approximate
representations and should
be used for reference
purposes only.

The Regional District of
Central Kootenay is not
responsible for any errors or
omissions on this map.



Esri Canada, Esri,
TomTom, Garmin,
SafeGraph,
GeoTechnologies, Inc.,
USGS, EPA,

APPENDIX 2. PROPOSED SITE PLAN AND SPEA MAP



Legend

- Electoral Areas
- RDCK Streets
- Cadastre - Legal Parcels
- Address Points

Map Scale:
1:2,000



Date:
January 8, 2024

REGIONAL DISTRICT
OF CENTRAL KOOTENAY
Box 590, 202 Lakeside Drive,
Nelson, BC V1L 5R4
Phone: 1-800-268-7325
www.rdck.bc.ca
maps@rdck.bc.ca

The mapping information
shown are approximate
representations and should
be used for reference
purposes only.

The Regional District of
Central Kootenay is not
responsible for any errors or
omissions on this map.

RDCK Map



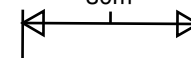
LEGEND

- Property Boundary
- 30 m Riparian Assessment Area
- ESDP setback, LWD and Litterfall ZOS (15 m)
- Shade ZOS (0 m)
- SPEA (15 m)
- Proposed Marine Rail (20 m long by 1.4 m wide; ~7 m² footprint within SPEA)



16740 Hwy 3A
Site Plan
Drawn by: FL
Date Jan 8, 2024
Scale:

30m



APPENDIX 3. ARCHAEOLOGICAL CHANCE FIND PROCEDURES

Chance Find Procedures for Archaeological Material

This document provides information on how a developer and/or their contractor(s) can manage for potential archaeological material discoveries while undertaking construction and/or maintenance activities. This document can provide assistance to in-field contractors in the identification of archaeological remains and the procedures to follow if a discovery is made. The discovery of human remains initiates a different course of action and is outlined separately.

Under the provincial *Heritage Conservation Act (HCA)*, archaeological sites that pre-date 1846 are automatically protected whether on public or private land. Protected sites may not be damaged, altered or moved in any way without a Section 12 or 14 Permit as issued through the *HCA*. It is illegal to collect or remove any heritage object from an archaeological site unless authorized to do so under permit.

1. Activities occurring outside of known Archaeological Sites:

When archaeological material is encountered outside of known archaeological site areas work in the vicinity must stop immediately no matter what type of material or feature has been identified. Alteration to an archaeological site can only occur under a Section 12 (Site Alteration Permit) or Section 14 (Heritage Inspection Permit) *Heritage Conservation Act* permit. Such permit applications should be prepared by a professional archaeologist.

If archaeological material is discovered during the course of construction activities:

1.1 Stop Work: Halt all work in the area of the discovery and safely secure the area. Contact the project manager or site foreman.

1.2 Contact an Archaeologist: An archaeologist should be contacted as soon as possible. For a list of qualified archaeologists in the area, the proponent is directed to the BC Association of Professional Consulting Archaeologists website: www.bcapa.ca. The proponent may also wish to contact the Ktunaxa Nation Council's Archaeology Technician Nathalie Allard for direction (1-250-426-9549; nallard@ktunaxa.org).

1.3 Archaeologist provides guidance: The archaeologist will direct the proponent on the next courses of action, which will include notifying the Archaeology

Branch and First Nations with interest in the area.

2. Activities Occurring within Known Archaeological Site Boundaries:

Land altering activity within a previously recorded archaeological site must be conducted under a Section 12 HCA Site Alteration Permit (SAP), in some cases with an onsite archaeological monitor. It is common for additional archaeological material and features to be encountered during activities occurring within previously recorded archaeological sites. Minor finds (lithic flakes, diffuse charcoal or fire altered rock) may not require work to stop, however significant finds require a level of assessment by a professional archaeologist, and it is up to the onsite project manager to determine the level of significance based on criteria presented below.

2.1 Significant Cultural Finds that Require a Professional Archaeologist (described in detail in Section 4)

- Intact archaeological features, which can include but are not limited to hearths, cultural depressions (e.g. cache pits, house depressions) and rock alignments or forms (e.g. tipi rings, cairns, blinds)
- Significant archaeological materials, which include but are not limited to, the presence of formed lithic tools (e.g. projectile point, microblade core, scraper), a dense concentration of lithic waste flakes, or artistic items
- Human Remains (described in detail in Section 3)

2.2 Archaeological Site Management Options

- 2.2.1 **Site Avoidance:** If the boundaries of a site have been delineated, redesign the proposed development to avoid impacting the site. Avoidance is normally the fastest and most cost effective option for managing archaeological sites. Site avoidance could also be achieved through minimizing ground disturbance by looking for alternative constructive methods.
- 2.2.2 **Mitigation:** If it is not feasible to avoid the site through project redesign, it is necessary to conduct systematic data collection and analysis within the site prior to its loss. This could include surface collection and/or excavation. This work can be time-consuming and therefore expensive to conduct.
- 2.2.3 **Protection:** It may be possible to protect all or portions of the site which will be impacted through installation of barriers during the development period and possibly for a longer period of time. Methods for barrier construction could include fencing around site boundaries or applying

geotextile to the ground surface and capping it with fill. The exact method used would be site-specific.

3. Chance Find Procedures for Identified Human Remains

Procedures in the event of the discovery of human remains during construction are covered in depth by an Archaeology Branch Policy Statement, found on their website at www.for.gov.bc.ca/archaeology, and are summarized below.

- 3.1 Stop all construction activities immediately in the area of found or suspected human remains and contact the RCMP and/or Office of the Coroner.
- 3.2 The coroner must determine whether the remains are of contemporary forensic concern or archaeological/aboriginal.
- 3.3 If the remains are found to be of aboriginal ancestry then the next step involves the relevant First Nations collaboratively determining the appropriate treatment of those remains.

The key to respectfully dealing with ancient aboriginal remains is to involve the appropriate First Nations as early as possible in the process. However this must be done in a manner that does not interfere with the coroner's office ability to conduct their business in the manner that they see fit.

4. Site Identification Guide

The following are characteristics typical to site types found within the Ktunaxa Traditional Territory.

4.1 Artifact Scatters

Lithic (stone) scatters from the production and maintenance of stone tools are the most common type of archaeological site found in the region. Other materials that may be represented in artifact scatters are Fire Broken Rock (FBR), bone, antler and tooth.

Lithics: What to look for

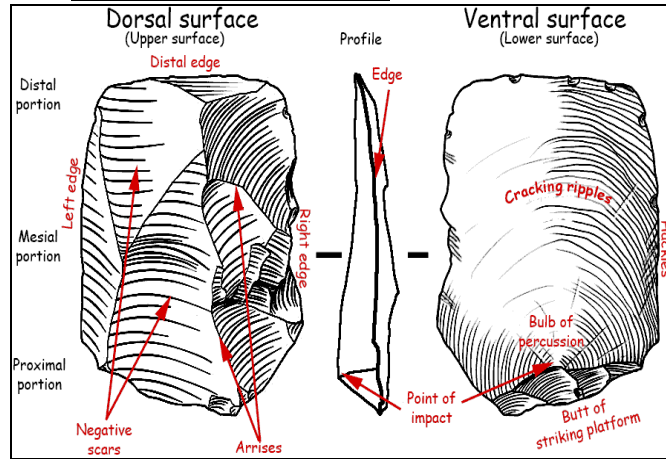


Image 1: Basic flake morphology



Image 2: Examples of lithic flakes

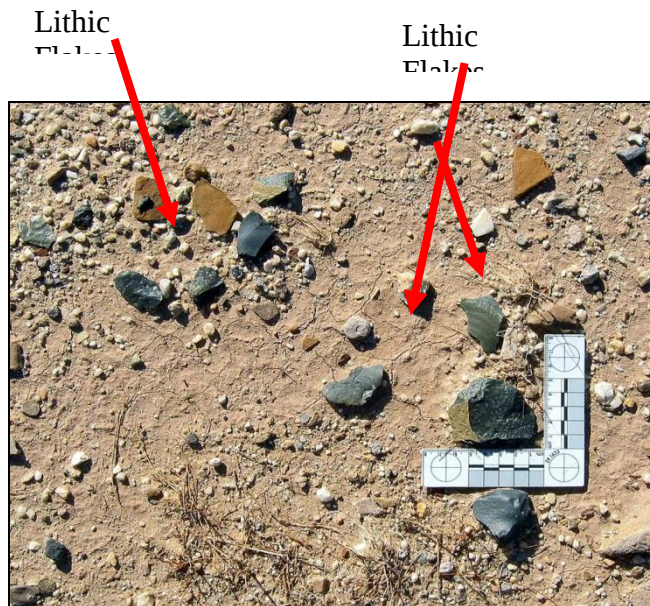


Image 3: Example of lithic scatter found on ground surface



Image 4: Example of formed lithic artifacts

Zakisqnuuk

Zaqam

Lower Kootenay

Tobacco Plains

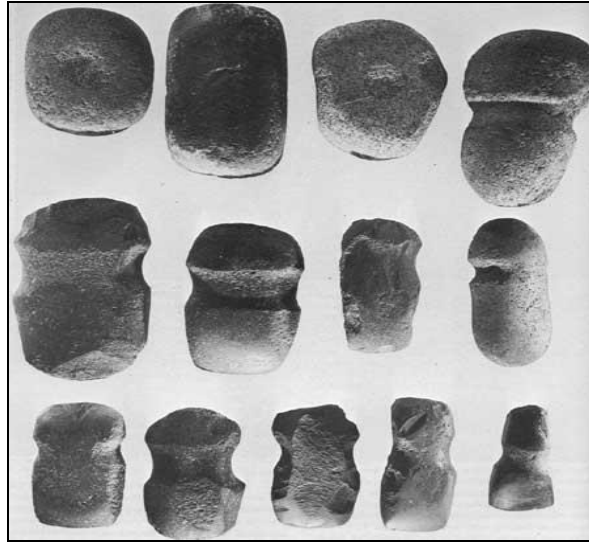


Image 5: Ground stone artifacts

Bone, Tooth and Antler Artifacts: What to Look For

- Obvious shaping
- Incising
- Unnatural holes



Takisqnuuk

Taq'am

Lower Kootenay

Tobacco Plains

Image 6: Bone and Antler artifacts

4.2 Fire Broken Rock and Hearths

Fire-broken rock (FBR) results from the use of fire during cooking, heating and processing activities. FBR is often associated with other features including hearths and cultural depressions, but can also be thinly scattered in concentrations away from the features with which they were first associated.

When looking for FBR, note concentrations of roughly fractured rock from rapid heating and cooling, rock showing signs of burning or oxidation and/or reddening or blackening of surrounding matrix.

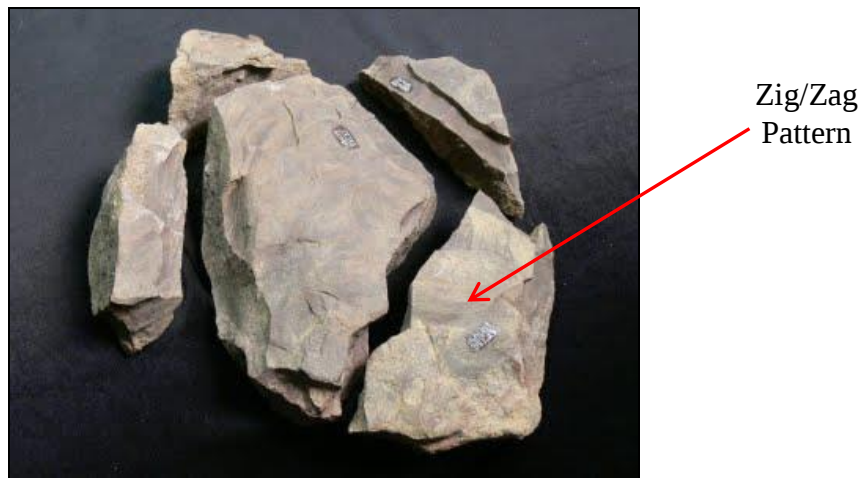


Image 7: Example of FBR; note the zig/zag pattern of breakage common to FBR. A hearth feature is evidence of a fire pit or other fireplace feature of any period. Hearths were used for cooking, heating, and processing of some stone, wood, faunal, and floral resources and may be either lined with a wide range of materials like stone or left unlined. Occasionally site formation processes (e.g., farming or excavation) deform or disperse hearth features, making them difficult to identify without careful study.

Hearths: What to look for

- FBR
- reddening or blackening of the associated soil/sediment
- charcoal
- layering of FBR and charcoal, and
- depressions in the earth associated with FBR, reddened or blackened matrix and charcoal.



Image 8: Example of a hearth uncovered along the wall of an excavation unit

4.3 Cultural Depressions

Any depression seen on the ground surface that appears to have been excavated by man can be a cultural depression and have archaeological significance. These “pits” were dug for a variety of reasons such as for food storage, cooking or as a base for a dwelling. They can range in size from 1m across to 7-10m across, and are usually found associated with other artifacts such as FBR and lithic scatters.

To identify a cultural depression, look for:

- Subtle to deep scours on the ground surface that are circular to rectilinear in shape
- A raised rim along the edge of a depression
- Depressions associated with artifacts and FBR
- Depressions associated with fire reddening and blackening of the matrix



Image 9: Example of a large cultural depression in a natural setting

4.6 Rock Alignments

There are several types of rock alignments that occur within the culture area, which include tipi rings, medicine wheels, cairns and blinds. When attempting to identify rock alignments, look for a group of rocks that look purposefully placed as in a circle, pile or line; isolated groups of rock that do not seem to belong to that landscape; and/or rocks which form a pattern.



Image 10: Example of a Cairn or piling of rocks



Image 11: Example of a tipi ring in a natural setting

Takisqnuuk

Taq'am

Lower Kootenay

Tobacco Plains

16.0 DEVELOPMENT PERMIT AREAS

Background

The OCP may designate Development Permit Areas under the authority of local government legislation. Unless otherwise specified, a development permit must be approved by the Regional Board, or delegate of the Board, prior to any development or subdivision of land within a designated Development Permit Area.

Development Permit Areas allow for implementation of special guidelines for the protection of the natural environment, protection from hazardous conditions, for revitalization of designated areas, or to guide the form and character of development within the Plan Area. Development Permit Areas can also be used to meet targets for carbon emission reductions and energy and water conservation.

Where land is subject to more than one Development Permit Area designation, a single development permit is required. The application will be subject to the requirements of all applicable Development Permit Areas, and any development permit issued will be in accordance with the guidelines of all such Areas.

Development Permit Area #1: Environmentally Sensitive Development Permit (ESDP) Area

Category

The ESDP area is designated under Section 488.1(1) (a) of the *Local Government Act* for the protection of the natural environment, its ecosystems and biological diversity.

Justification

The primary objective of this Development Permit Area designation is to regulate development activities in watercourses, lakes and wetlands and their adjacent riparian areas so as to protect aquatic habitat; and to conserve, enhance and, where necessary, restore watercourses and their riparian areas.

Area

The ESDP area is comprised of:

1. Riparian assessment areas (Figure 1) for fish and wildlife habitat and drinking water, including:
 - a. All areas within 15 metres of the high water mark of a watercourse, including the natural boundary of a lake;
 - b. within 15 metres of the top of the ravine bank in the case of a ravine less than 60 metres wide; and
 - c. within 5 metres of the top of the ravine bank in the case of a wider ravine that links aquatic to terrestrial ecosystems and includes both existing and potential riparian

vegetation and existing and potential upland vegetation that exerts an influence on the watercourse.

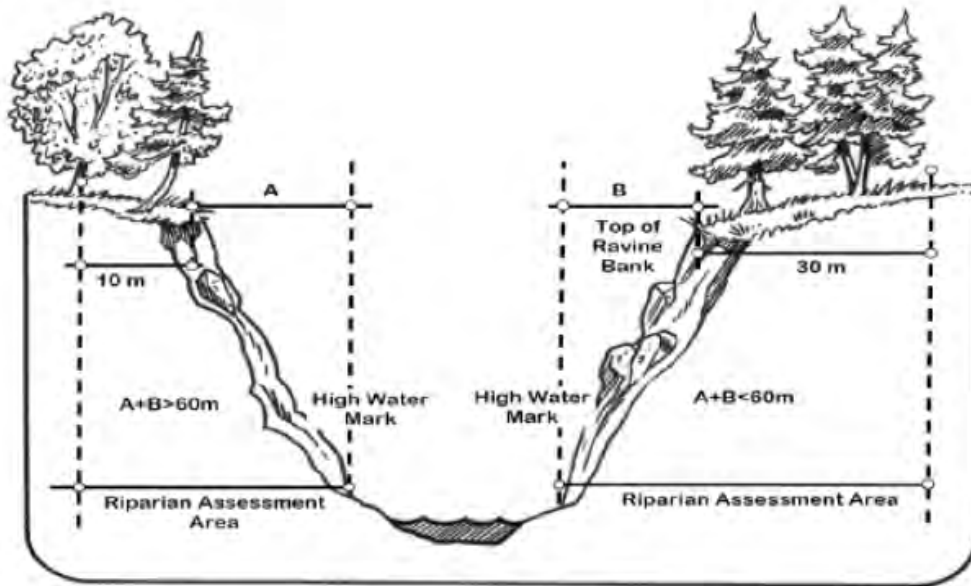


FIGURE 1: (for illustrative purposes only) **RIPARIAN ASSESSMENT AREA:** means the area within 15 m of the high water mark of a watercourse; within 15 m of the top of the ravine bank in the case of a ravine less than 60 m wide; and within 5 m of the top of the ravine bank in the case of a wider ravine that link aquatic to terrestrial ecosystems and includes both existing and potential riparian vegetation and existing and potential upland vegetation that exerts an influence on the watercourse. This DPA applies only to residential, commercial and industrial designations.

Source: British Columbia Ministry of Environment, *Riparian Areas Regulation Implementation Guidebook*, March 2005

Where the following definitions apply:

High water mark means the visible high water mark of a watercourse where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the watercourse a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain.

Lake means any area of year round open water covering a minimum of 1.0 hectares (2.47 acres) of area and possessing a maximum depth of at least 2.0 metres. Smaller and shallower areas of open water may be considered to meet the criteria of a wetland.

Top of ravine bank means the first significant break in a ravine slope where the break occurs such that the grade beyond the break is greater than 3:1 for a minimum distance of 15 m measured perpendicularly from the break, and the break does not include a bench within the ravine that could be developed.

Watercourse means any natural or man-made depression with well-defined banks and a bed 0.6 metres (2.0 feet) or more below the surrounding land serving to give direction to a current of water at least six months of the year and/or having a drainage area of two square kilometres (0.8 square miles) or more upstream of the point of consideration.

Wetland means any areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Guidelines

A development permit is required, except where specified under the exemptions section, for development or land alteration on land identified as a riparian assessment area within the ESDP Area. Where not exempt, development requiring a development permit includes any of the following associated with or resulting from residential, commercial or industrial activities or ancillary activities to the extent that they are subject to local government powers under local government legislation or when triggered by the requirements of a building permit or subdivision approval:

- a. removal, alteration, disruption or destruction of vegetation;
- b. disturbance of soils;
- c. construction or erection of buildings and structures;
- d. creation of non-structural impervious or semi-impervious surfaces;
- e. flood protection works;
- f. construction of roads, trails, docks, wharves and bridges;
- g. provision and maintenance of sewer and water services;
- h. development of drainage systems;
- i. development of utility corridors; and
- j. subdivision as defined in section 455 of the *Local Government Act*;

Development shall be in accordance with the following guidelines:

2. All development proposals subject to this permit will be assessed by a Qualified Environmental Practitioner (QEP) or Registered Professional Biologist (RP Bio) in accordance with the Riparian Areas Regulation established by the Provincial and/or Federal governments as used elsewhere in the Province;
3. An ESDP shall not be issued prior to the RDCK ensuring that a QEP or RP Bio has submitted a report certifying that they are qualified to carry out the assessment, that the assessment methods have been followed, and provides in their professional opinion that a lesser setback will not negatively affect the functioning of a watercourse or

riparian area and that the criteria listed in the Riparian Areas Regulation has been fulfilled, and;

4. The Riparian Areas Regulation implemented through the ESDP does not supersede other Federal, Provincial and or local government requirements, including that of other development permit areas, building permits, flood covenants, Federal or Provincial authorization. Land subject to more than one development permit area designation must ensure consistency with the guidelines of each development permit area, to provide comprehensive stewardship of both fish and wildlife habitat.

Exemptions

The ESDP area does not apply to the following:

5. existing construction, alteration, addition, repair, demolition and maintenance of farm buildings and agricultural activities including clearing of land for agricultural purposes;
6. existing institutional development containing no residential, commercial or industrial aspect;
7. construction, renovation, or repair of a permanent structure if the structure remains on its existing foundation. Only if the existing foundation is moved or extended in to a riparian assessment area would a ESDP be required; and
8. an area where the applicant can demonstrate that the conditions of the ESDP Area have already been satisfied or a development permit for the same area has already been issued in the past and the conditions in the development permit have all been met, or the conditions addressed in the previous development permit will not be affected.

Development Permit Area #2: Residential Cluster Development Permit (RCDP) Area

Designation

The RCDP area is designated under Section 488.1(1) (a) and (e) of the *Local Government Act* for protection of the natural environment, its ecosystems and biological diversity and the establishment of objectives for the form and character of intensive residential development.

Area

The RCDP Area is comprised of all privately owned or leased lands designated as Suburban Residential (RS), Country Residential (RC), Multi-Family Residential (RM), and Mixed Use Residential (RMU) on Schedule 'A.1'.

Justification

The intent of the RCDP Area is to ensure that intensive residential development is completed in a manner that is sensitive to the rural character of the Plan area, adjoining lands, the natural environment, and achieves a high standard of appearance. Lands in the Plan Area have not been studied to a high level for their ability to sustain intense development over the long term. It is therefore desirable to allow development to occur in a manner which allows for efficient