Shoreline Guidance Document:
Kootenay Lake

A Living Document (Version 9)

Updated: April 2019

Prepared for and maintained by:

The Kootenay Lake Partnership

ACKNOWLEDGEMENTS

This document was originally prepared by a collaboration of the following authors:

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Regional District of Central Kootenay
Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Ecoscape Environmental Consultants Ltd.
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The Firelight Group Ltd.
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This document is now maintained and updated by the Kootenay Lake Partnership. The Chair/Program Coordinator for the Kootenay Lake Partnership can be reached at klp.coordinator@gmail.com

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PREFACE

This document provides management guidelines for the shoreline of Kootenay Lake. These should be followed as the first step when reviewing or planning any development activity along the shoreline of Kootenay Lake.

The April 2019 version of this document contains extensive modifications to the layout with some additional information added and updates as needed. This revision was done in response to the expanded audience this document now includes. This goal of this revision was to make the document more readable with additional information added to help strengthen understanding. All the hyperlinks included have been updated and are all functional as of the date of this publication.

After reading this document, if there are further questions, please refer to the *Frequently Asked Questions* section of the Kootenay Lake Partnership website: www.kootenaylakepartnership.com/ If questions remain, please contact *FrontCounterBC*.

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GLOSSARY OF ACRONYMS

AHI	Aquatic Habitat Index
AOA	Archaeological Overview Assessment
CV	Cultural Values
DFO	Department of Fisheries and Oceans
FIM	Foreshore Inventory Mapping
FLNRORD	Ministry of Forests, Lands, Natural Resource Operations and Rural Development
GIS	Geographic Information Systems
HCA	*Heritage Conservation Act*
KLP	Kootenay Lake Partnership
KNC	Ktunaxa Nation Council
QP	Qualified Professional
RDCK	Regional District of Central Kootenay
SARA	*Species at Risk Act*
SEI	Sensitive Ecosystem Inventory
SHIM	Sensitive Habitat Inventory Mapping

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1.0 INTRODUCTION

In recent years, several issues, including shoreline impacts, degraded habitat, recreational use conflicts, and water quality impacts have prompted government agencies at various levels to initiate projects focused on increasing our understanding and providing better management for our watersheds. The Kootenay Lake Partnership (KLP) is a multi-agency planning process that was initiated in response to concerns over the management of shoreline areas surrounding Kootenay Lake. As part of this work, the Regional District of Central Kootenay (RDCK); the Department of Fisheries and Oceans Canada (DFO); the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD); Ministry of Transportation and Infrastructure (MOTI); and the Ktunaxa Nation Council (KNC) have collaborated in a mapping initiative in response to increasing development and recreation pressures on Kootenay Lake. This Shoreline Guidance Document is a product of this process.

This shoreline guidance document is intended to clarify and streamline land use decision-making processes between different agencies, proponents, and stakeholders as they relate to riparian, fish and fish habitat. This document is based on other similar planning processes undertaken for Shuswap and Mara Lakes (Ecoscape, 2011) and Windermere Lake (EKLIMP, 2008). However, this document is unique in its integration of Ktunaxa cultural values and archaeological potential. Original authorship credit is given here for portions of this report that are similar to or amended from those or other similar planning processes and documents and will not be referenced further in order to improve readability of this report. Though these templates were utilized to promote consistency between different areas of the province, original authors should be credited for their contributions where appropriate.

The guidelines presented in this document are best applied during the initial stages of development planning. Proposed works may be subject to requirements such as local government zoning or permitting, *Water Sustainability Act* approvals or notifications (many are noted within this document, but not necessarily all) and Section 11 Water License applications, *Heritage Conservation Act* permits, *Land Act* permits, licenses or permissions for occupation of Crown Lands, or *Navigable Waters Protection Act* approvals. It remains the responsibility of the project proponent to verify this information and meet all regulatory requirements that may apply to their project.

The FLNRORD, KNC and DFO support the use of these guidelines by other regulatory agencies to define and communicate design, assessment and review standards for the protection of identified values on Kootenay Lake. All agencies in the Kootenay Lake Partnership recognize and respect that local governments and other agencies may limit works or activities for reasons other than those listed in this document, provided that design, assessment and review standards for activities that are supported meet or exceed the minimum described in this report.

1.1 Purpose of this Guidance Document

The guidelines presented in this document are founded on the beliefs that it is possible and desirable to manage our watersheds and their natural surroundings in a sustainable manner and that sustainable management is the shared responsibility of all stakeholders; including proponents, professionals and all levels of government. It is a tool that consolidates existing regulations in an effort to streamline the process and help residents navigate the complexity of regulations within all levels of government. **This document does not introduce new regulations or change existing regulations.** These guidelines provide important information to aid in the submission of applications for various development works, based on the specific risk and the specific values of the shoreline segment in question.

This document identifies sensitive habitat, Ktunaxa cultural values and pre-contact archeological potential.[1] It then provides direction on how to obtain necessary approvals for various forms of development on Crown land within the Kootenay Lake foreshore. Together, this information will help improve evidenced-based decision making to protect sensitive ecological, cultural, and archaeological values around Kootenay Lake. Application of present-day development guidelines to all shoreline segments is expected to maintain current fish habitat values of natural areas, protect Ktunaxa cultural values, and protect archeological values.

This document also aids in recovering fish habitat values lost to past development impacts and protect and enhance culturally important areas for the Ktunaxa. This gradual recovery of values is required due to the extent of development-related impacts that have already occurred in absence of best management practices, such as a loss of traditional areas of access to the lake, extensive substrate modification due to groynes, or removal of important riparian vegetation to create landscaped areas consisting predominantly of turf.

The data collected and the information in this document is available for use by a wide audience. Proponents are encouraged to use this information when planning their proposed activities along Kootenay Lake. Even with the use of this document, in all cases, it is recommended that anyone who is planning work on Crown Land, such as the shoreline, to first contact *FrontCounterBC* or retain the services of a Qualified Professional (QP) who will contact *FrontCounterBC* on their behalf. Depending on the situation, *FrontCounterBC* will provide guidance on whether the proposed works are allowed or not allowed under the respective legislation. Similarly, works on private lands must also consider local government's requirements, and these local governments can be contacted for more information.

[1] Pre-contact is defined as before the year 1846, as per the *Heritage Conservation Act,* and corresponds to the year Canada became a country.

1.2 Target Audiences

This document was originally intended for use by decision-makers and Qualified Professionals as a way to navigate the complex local, provincial and federal regulations around foreshore development. However, through the various outreach activities that have taken place around this document, there is increased interest from area residents, waterfront property owners, and other professionals, such as real estate agents, who would like to better understand the processes around shoreline management on Kootenay Lake. As such, the audience of this Shoreline Guidance Document has expanded to include this broader audience. With this in mind, this document tries to clearly explain the needed processes around development on Kootenay Lake. This is challenging due to the technical nature of some of these processes and regulations. If there are questions about these processes, please default to contacting *FrontCounterBC* for more information.

1.3 Important Contact Information

FrontCounterBC

FrontCounterBC should be contacted for any works planned on Crown Land, such as the shoreline of Kootenay Lake.

Phone: 1-877-855-3222
Email: FrontCounterBC@gov.bc.ca
In Person:

FrontCounter BC
Nelson
#401-333 Victoria St.
Nelson, BC
V1L 4K3

FrontCounter BC
Cranbrook
1902 Theatre Rd
Cranbrook, BC
V1C 7G1

Regional District of Central Kootenay

The Regional District of Central Kootenay (RDCK) should be contacted for any works planned on private land within RDCK jurisdiction.

Phone: 250-352-8165
Email: plandept@rdck.bc.ca

City of Nelson

The City of Nelson should be contacted for any works planned on private land within City of Nelson jurisdiction.

Phone: 250-352-8260

Village of Kaslo

The Village of Kaslo should be contacted for any works planned on private land within Village of Kaslo jurisdiction.

Phone: 250-353-2311

Ktunaxa Nation Council

The KNC should be contacted for any works that require Ktunaxa engagement.

Phone: 1-250-489-2464
Email: Referrals@ktunaxa.org

Kootenay Lake Partnership

The Chair/Program Coordinator of the Kootenay Lake Partnership coordinates the work of the Kootenay Lake Partnership, including facilitating any revisions to this document. The coordinator can be reached by email at: klp.coordinator@gmail.com

2.0 ASSESSMENT OVERVIEW AND IMPORTANT CONSIDERATIONS

2.1 Methods

The following provides a general overview of the methods used for the ecological, Ktunaxa cultural values, and archaeological assessments of the shoreline of Kootenay Lake.

2.1.1 Ecological Assessment

An ecological assessment was completed in late-September and early-October of 2012 using Foreshore Inventory and Mapping (FIM) methodology and the development of an Aquatic Habitat Index (AHI) for Kootenay Lake.

Foreshore Inventory and Mapping (FIM) is a broad-scale, standardized inventory process that attempts to define and describe the shoreline of large and small lake systems. FIM is completed using a variety of techniques and using data derived from numerous sources (Schleppe, 2009b). This methodology has been used to map the shorelines of other BC lakes and provides a common basis for integrating environmental information into land use guidance documents. The inventory provides baseline information regarding the current condition and natural features of the shoreline and the level of development, such

as the number of docks. Sufficient data is collected that allows managers and the public to monitor shoreline changes over time and measure whether proposed land use decisions are meeting intended objectives. This baseline inventory provides sufficient information to facilitate the identification of sensitive shoreline segments through the creation of the Aquatic Habitat Index.

The Aquatic Habitat Index (AHI) utilizes data collected during the FIM, field reviews, and data from other sources (Land and Data Resource Warehouse or previously published works) to develop and rank the sensitivity of the shoreline using an index (Schleppe, 2010). The AHI ranking for an individual shoreline segment represents its current habitat value relative to all other shore segments on the same lake. This index is a five-point index ranking *Very Low, Low, Moderate, High,* and *Very High*. This index employed similar methodologies to previous AHI projects, such as Shuswap, Mara, Moyie, and Monroe Lakes (see Schleppe 2009a, 2009b, 2010, 2011a, and 2011b for examples). More information on AHI is included later in this document. A separate report outlining the FIM and AHI development for Kootenay Lake is also available (Schleppe and Cormano, 2013).

In addition to the AHI, the shoreline was also classified for site sensitivity. The shoreline segments are classified as having aquatic site sensitivity, environmental site sensitivity, both aquatic and environmental site sensitivity, or neither (non-sensitive).

Aquatic site sensitivities include potential fish staging or migration areas, confirmed or potential shore spawning kokanee, presence of critical white sturgeon habitat, or high value juvenile rearing salmonid areas.

Environmental site sensitivities include the presence of known habitats important to bats, presence of raptor nests, presence of heron nesting areas, presence of other avian nesting areas, presence of Conservation Data Center occurrences[2], presence of Red or Blue listed communities, and presence of important areas for amphibians.

The ecological assessment provides important background information concerning fish and wildlife habitat values that occur and fish habitat impacts caused by common development activities. These guidelines are intended to protect and restore important fish and wildlife habitat values, consistent with conservation and restoration goals typical of Best Management Practices and applicable legislation. The assessment only includes features that are within 30 meters inland of the natural boundary, except in rare instances of large floodplains, which are a transitional community and provide important habitat features. Therefore, these guidelines do not address development risks to non-fish species, such as reptiles, or upland ecosystems that do not also provide function for fish or aquatic habitat, such as provincially "red-listed" cottonwood riparian ecosystems on large river floodplains. Additional inventory and mapping projects such as Sensitive Ecosystem

[2] The BC Conservation Data Center assists in the conservation of our province's biodiversity by collecting and sharing scientific data and information about wildlife and ecosystems in BC.

Inventory Mapping (SHIM) or Sensitive Ecosystem Inventory (SEI) would be required to address concerns related to wildlife species and ecosystems along the shoreline.

2.1.2 Cultural Values Assessment

A Ktunaxa Cultural Values (CV) Study was conducted in 2013 by the Ktunaxa Nation Council (KNC) using customized methodology based on previous work by Jennings et al (2003), Tobias (2009) and The Firelight Group (2015). The KNC worked with Ktunaxa elders, knowledge holders, and land users to identify areas of high ecological and cultural values. The CV study identified values along the lake that are culturally significant. These included archaeological sites, environmental sites, habitation areas, and areas where aboriginal rights, such as hunting and fishing, are practiced.

The CV study is specific to the Ktunaxa people. The other First Nations in the region chose not to participate in this process given their priority geographical areas; however, they have been, and continue to be kept informed. The Ktunaxa Nation Cultural Values Study is an outcome of the Strategic Engagement Agreement between the Ktunaxa First Nation and the Province. The Ktunaxa are one of the few First Nations in the province to sign such as agreement. The agreement outlines which parts of the regulatory process they wish to be consulted on. For the Ktunaxa First Nation, their cultural values around Kootenay Lake are significant.

For this assessment, shoreline was associated with a particular Ktunaxa cultural value when it was located within 500m of a documented Ktunaxa cultural use area or other identified shoreline feature. The criteria used to identify Ktunaxa cultural values for Kootenay Lake fall into three broad categories:

1) Archaeological: Proximity to known Ktunaxa archaeological sites (pre-1846, as well as pictographs, burials and other defined archaeological sites), or high archaeological potential (see archaeological value mapping).
2) Ecological: Proximity to high value riparian and shoreline habitat (see ecological value mapping).
3) Cultural: Proximity to documented Ktunaxa cultural values including:
    - environmental features and highly valued habitat areas (e.g. spawning areas, beach fan habitats, migration corridors);
    - known Ktunaxa cultural use areas (e.g. trails, habitation areas, harvesting areas, other cultural areas);
    - historic wetlands and wetland restoration areas, and areas related to restoration and maintenance of natural (pre-regulation) flow patterns and landforms; or

- access values, including areas that are regularly used due to existing access, and areas where changes in access may influence the practice of Ktunaxa rights and title in the area.

The cultural values identified by the Ktunaxa have been harmonized with this guidance document in order to clarify the engagement and permitting processes required by the Ktunaxa Nation Council when considering development activities on the foreshore of Kootenay Lake. Through this guidance document, where "enhanced engagement" is identified for cultural values, this is intended to inform the Provincial and Federal Governments where the Ktunaxa desire more dialogue on identified values under the Strategic Engagement Agreement between all parties. This document guides proponents through the steps they need to build a relationship with the Ktunaxa First Nation. The Ktunaxa do not currently charge a fee for the review and response on referrals they receive.

2.1.3 Archaeological Potential Assessment

Archaeological potential mapping was conducted through an Archaeological Overview Assessment (AOA) conducted in the fall of 2012. The AOA is based upon methodology required by the Ministry of Forests Lands and Natural Resource Operations and Rural Development (FLNRORD), Archaeology Branch. The AOA uses an expert knowledge assessment to examine the landscape within 100 metres of the present Kootenay Lake shoreline, including the Duncan Reservoir and Creston Flats.

The AOA was generated by extrapolating regional models of past human land and resource use in the upper Columbia River drainage and applying these to the foreshore of Kootenay Lake during the shoreline inventory. The prediction of probability of site occurrence (archaeological potential) is linked to the landscape by geographic characteristics including aspect; relationship to water; biotic associations such as vegetation, ungulate range and fisheries values; age of a given landform; and the geological processes that created that landform. These landforms were then tested in the field to ensure that the model was accurate. Through the AOA, these guidelines provide information about when and where to obtain permitting and to conduct in-field assessments pertaining to impacts on archaeological sites.

Under the provincial *Heritage Conservation Act (HCA)*, archaeological sites that pre-date 1846 are automatically protected whether on public or private land, as are heritage wrecks and cargo. Protected sites may not be damaged, altered or moved in any way without a Section 12 or 14 Permit as issued through the *HCA*.

2.2 Mapping

The entire length of shoreline along Kootenay Lake was mapped into 91 map sheets with the results from the ecological, cultural values, and archaeological assessments. These maps can be found in the appendix of this document as well as an online at www.kootenaylakepartnership.com.[3]

These maps show the shoreline of Kootenay Lake separated into 254 individual shoreline segments (vulnerability zones) that have been colour coded within the three key assessment considerations: 1) Aquatic Habitat Index, 2) Ktunaxa Cultural Values, and 3) Archaeological Potential (See Table 1).

Table 1: Summary of the key considerations, relative risk rank, and associated map colour for interpretation in this guidance document.

Consideration	Rank	Map Colour
Aquatic Habitat Index	Very Low	Grey
	Low	Blue
	Moderate	Yellow
	High	Orange
	Very High	Red
Ktunaxa Cultural Values	Standard Engagement	Grey
	Enhanced Engagement	Purple
Archeological Potential	N/A	Brown
		Yellow
		Orange
		Red

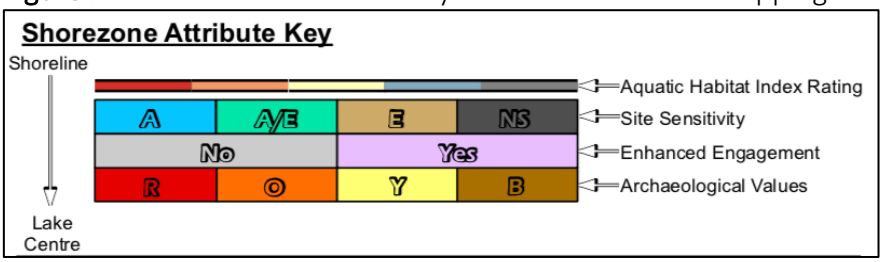
In addition to the three key assessment considerations above, the maps also provide the location of many site sensitivities. These are classified as aquatic site sensitivity, environmental site sensitivity, both aquatic and environmental site sensitivity, or neither (non-sensitive).

[3] GIS information from (Schleppe and Cormano, 2013)

2.2.1 Mapping Interpretation Example

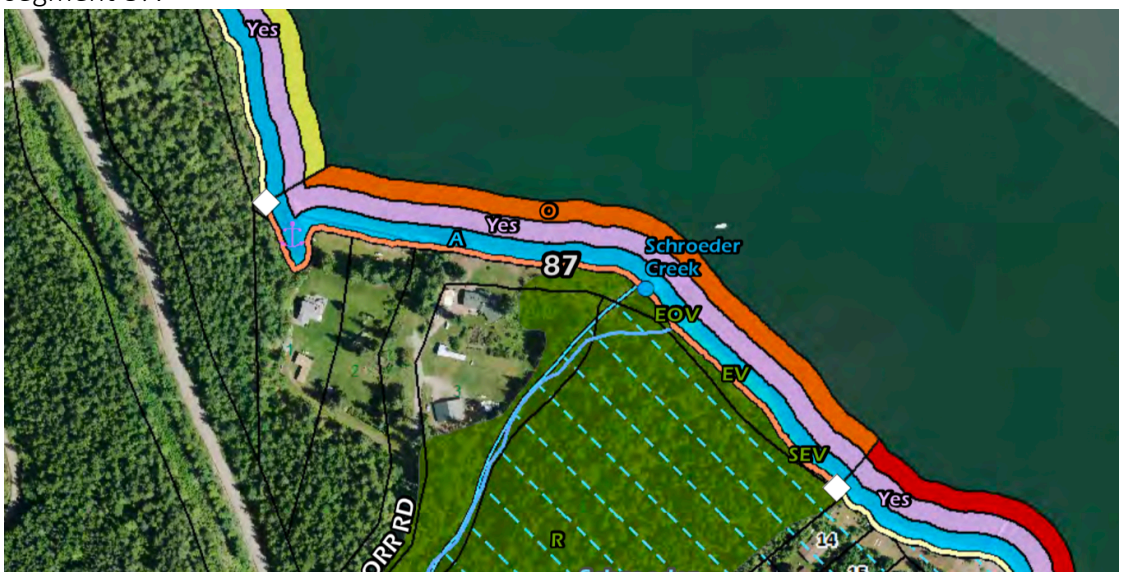
When interpreting the FIM maps, either in the appendix of this document or online with the interactive map, it is important to reference the legend to properly interpret the information. Make sure to locate and reference the legend on the mapping platform you use. In the online interactive map, select the button with a triangle, square, and circle in the top right corner of the browser( ) to dropdown and show the legend. Below is a quick summary showing an example of how to interpret the map.

Figure A – Shorezone Attribute Key taken from the FIM mapping



When interpreting the interactive map, the thin line furthest away from the lake is the AHI ranking. The thick line next to the AHI is the site sensitivity type. The middle thick line indicates the need for enhanced engagement. The thick line closest to the lake indicates the archaeological potential.

Figure B – Example from map sheet 75 of the Kootenay Lake FIM showing shoreline segment 87.



In the example from Figure B, when interpreting shoreline segment 87, the following is determined:

- AHI = orange = High AHI
- Site Sensitivity = blue = aquatic sensitivity
- Ktunaxa Cultural Values = purple = yes to enhanced engagement
- Archaeology potential = orange (no further interpretation needed other than colour)

2.3 Common Development Activities and Associated Risk

The following common development activities were identified using FIM survey data for Kootenay Lake:

- aquatic vegetation removal
- dredging, infilling and beach creation
- erosion control and shoreline sediment control structures
- boat launches
- buoys
- docks
- marinas
- water withdrawal and use
- construction of pile-supported structures below the natural boundary
- land development within 30 meters of the natural boundary

To address the scale of development activity observations, the activities were sub-categorized by location (above vs. below the natural boundary), scale (single family residential, commercial, industrial, strata or multi-family), activity age (new works or maintenance of existing works), and other factors (legal works with a Crown Lands tenure or not).

Through the other mapping initiatives on BC lakes, it has been identified that as the density, intensity, or type of development changes, the consequences to habitat and relative risks increase. Risk also increase as habitat values increase. For example, the risk caused by development density increases in areas of higher habitat value. The scale of activity also affects risk. For instance, removal of one native aquatic plant poses relatively low risk, while larger scale vegetation removal causes higher risk. This means that while risks have been categorized based on development activity, it is difficult to categorize all potential scales of what development may be proposed, so these guidelines are best intended to address common development scenarios.

An assessment of the relative risk posed by each common development activity to fish or riparian habitat in each shoreline vulnerability zone was initially completed and was based

upon similar assessments of risks in other lakes (Mabel, Shuswap, Moyie, Monroe, and Windermere). The initial risk ratings were refined in a workshop then reviewed by DFO and MFLNRORD Ecosystems Section staff responsible for development related fish habitat assessments on the Kootenay Lake system. Activity risk ratings range from *Low* to *Very High* and vary depending upon the activity or habitat value present. As mentioned above, the risks to fish habitat are directly related to the habitat value present. Therefore, land use impact risk ratings increase from areas of *Very Low* to *Very High* shoreline vulnerability and reach their maximum in known fish spawning habitat.

A similar method was used to develop risk matrices for Ktunaxa cultural values and archeological values. A separate risk matrix was developed for each of these different categories and classified within this document.

2.4 Applicable Legislation

The following provides a brief summary of legislation that may be applicable to a proponent's project. While this list is fairly inclusive, other pieces of legislation may be applicable and proponents are required to ensure that they have identified all applicable legislation. Information included in this document related to the Fisheries Protection Program of Fisheries & Oceans Canada is relevant as of (July, 2016). The Project Near Water website may be updated to reflect the integration of permitting under the *Species at Risk Act* and *Fisheries Act.* It is the proponents' responsibility to refer to the Projects Near Water website for any updates. In addition, the review of changes to the *Fisheries Act* began in June 2016 with changes, if required, expected to be implemented by 2019. Any changes to the *Fisheries Act* as a result of the review may impact advice or recommendations within this document.

Federal Acts:

- *The Department of Environment Act*
- *Fisheries Act*
- *Species at Risk Act (SARA)*
- *Migratory Birds Convention Act*
- *Canada Wildlife Act*
- *Navigable Waters Protection Act*
- *Pesticides Act*
- *Canadian Environmental Assessment Act (CEAA)*
- *Indian Act*

Federal Regulations:

- *Canada Environmental Protection Act, 1999 (CEPA 1999) Regulations*
- *Migratory Birds Regulations*
- *Fisheries Act Regulations*

- *Wildlife Area Regulations*

Provincial Acts:

- *Water Sustainability Act*
- *Fish Protection Act*
- *Wildlife Act*
- *Environmental Management Act*
- *Land Act*
- *Weed Control Act*
- *Local Government Act*
- *Heritage Conservation Act*

Local Government:

- Development Permit Areas (DPAs)
- Subdivision Servicing Bylaw
- Floodplain Management Bylaw
- Building Bylaw
- Zoning
-

2.5 Applicable Best Management Practices

The BC Ministry of Environment (MOE, 2019b) defines best management practices (BMPs) as "guidelines that help development projects meet necessary legislation, regulations and policies. For example, legislation might dictate that projects cannot harm a stream, while best management practices provide practical methods to avoid harming a stream."

Table 2 provides a summary of potentially applicable BMPs, noting that this list is neither exhaustive, nor all-inclusive, and other BMPs may be applicable to any given project. Further, many of the documents are dated, and may be updated from the time of this publication. To access the updated Provincial BMP list, use the following link: https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/best-management-practices

FrontCounterBC or a Qualified Professional should be contacted for more information on recent Provincial BMP's that may be specifically applicable to Kootenay Lake. For Federal documents, the *Projects Near Water* website by Fisheries and Oceans Canada can also be referred to.

BMPs around archaeological assessments and archaeological chance find procedures are also included in Table 2.

Table 2a: Summary of BMPs and guidelines that may be applicable to development in the Kootenay Region			
Provincial BMPs	**Target Species Group and/or Habitat Feature**	**Applicability**	**Web Link**
Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia (2014)	Sensitive Species Terrestrial Aquatic Riparian	These BMPs are applicable to works involving any form of land development.	https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/best-management-practices/develop-with-care
Guidelines for Amphibian and Reptile Conservation during Urban and Rural Land Development in British Columbia (2014)	Amphibians and Reptiles	These BMPs are applicable to ecosystems comprised of aquatic habitats, rocky outcrops and forested areas.	https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/herptilebmp_complete.pdf
Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia (2013)	Raptors	These BMPs are applicable to terrestrial ecosystems comprised of mature coniferous and mixed woodlands.	http://www.env.gov.bc.ca/wld/documents/bmp/raptor_conservation_guidelines_2013.pdf
Best Management Practices Guidelines for Bats during Urban and Rural Land Development in British Columbia in BC (2016)	Bats	These BMPs are applicable to terrestrial ecosystems, insect rich riparian zones, as well as wetlands, forest edges and open woodland.	http://a100.gov.bc.ca/pub/eirs/viewDocumentDetail.do?fromStatic=true&repository=BDP&documentId=12460
Standards and Best Practices for Instream Works (2004)	Aquatic	These BMPs are applicable for works undertaken instream.	http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf
General BMPs and Standard Project Considerations	Aquatic	These BMPs are for any projects undertaken in and around a stream.	http://www.env.gov.bc.ca/wld/instreamworks/generalBMPs.htm
Bank Stabilization Specific BMPs	Terrestrial Aquatic	These BMPs are applicable to bank stabilization works that could impact fish or wildlife habitat.	http://www.env.gov.bc.ca/wld/instreamworks/bankstabilization.htm
Best Management Practices for Hazard Tree and Non-Hazard Tree Limbing, Topping or Removal (2009)	Terrestrial Aquatic	These BMPs are applicable for works involving tree removal.	https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/hazardtree_26may_09.pdf

Table 2 continued: Summary of BMPs and guidelines that may be applicable to development in the Kootenay Region			
Provincial BMPs	**Target Species Group and/or Habitat Feature**	**Applicability**	**Web Link**
Standards and Best Practices for Instream Works	Terrestrial Aquatic	These BMPs address wharves, piers, docks, boathouses, and small moorings in and about a stream	http://www.env.gov.bc.ca/wld/instreamworks/downloads/Docks.pdf
Best Management Practices for Boat Launch Construction & Maintenance on Lakes (2006)	Terrestrial Aquatic	**Okanagan specific	http://www.env.gov.bc.ca/okanagan/documents/BMPBoat_LaunchDraft.pdf
Best Management Practices for Small Boat Moorage on Lakes (2006)	Terrestrial Aquatic	**Okanagan specific	http://www.env.gov.bc.ca/okanagan/documents/BMPSmallBoatMoorage_WorkingDraft.pdf
Best Management Practices for Installation and Maintenance of Water Line Intakes (2006)	Aquatic	**Okanagan specific	http://www.env.gov.bc.ca/okanagan/documents/BMPIntakes_WorkingDraft.pdf
Beaver Management Guidelines (2001)	Aquatic	This BMP is applicable to areas that support beaver communities.	http://www.env.gov.bc.ca/van-island/pa/pdf/Beaver-Guide.pdf
Tree replacement criteria (1996)	Terrestrial	This criteria document is applicable to works involving tree removal and replacement.	http://www.env.gov.bc.ca/wld/documents/bmp/treereplcrit.pdf
Kootenay-Boundary Water Sustainability Regulation Terms and Conditions (2018)	Aquatic	This notification is for changes in and around a stream of the kind listed in Part 3 of the *Water Sustainability Regulation.*	https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/iswstdsbpsmarch2004.pdf
Fish Habitat Rehabilitation Procedures (1997)	Aquatic	This document is applicable to works with an erosion and sediment risk near water.	https://www.for.gov.bc.ca/hfd/library/ffip/Slaney_PA1997_A.pdf
Guidelines for Wetland Protection and Conservation in British Columbia: Land Development (2009)	Wetlands	This document provides guidelines for wetland protection near development sites.	https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/wetland_ways_ch_10_development.pdf

Table 2 continued: Summary of BMPs and guidelines that may be applicable to development in the Kootenay Region			
Federal BMPs	**Target Species Group and/or Habitat Feature**	**Applicability**	**Web Link**
Land Development Guidelines for the Protection of Aquatic Habitat (1992)	Aquatic	This BMP is applicable to works undertaken in areas adjacent to riparian features.	http://www.dfo-mpo.gc.ca/Library/165353.pdf
Ktunaxa Nation Council BMPs	**Target Area**	**Applicability**	**Web Link**
Guidelines for Conducting Archaeological Assessment in Ktunaxa Territory	Archaeology	This document is applicable to activities with moderate to high risk to Archaeological values	http://www.ktunaxa.org/four-pillars/lands-resource-agency/archaeology-engagement-guidelines/

2.6 Project Considerations

2.6.1 New and Existing Works

This Shoreline Guidance Document addresses new and existing works. During the assessment for the Foreshore Inventory Mapping, extensive impacts from existing structures along the shoreline were identified. It was recognized that many works had proceeded without appropriate permits or approvals in place and that the works were often not compliant with standard Best Management Practices.

As proponents work through the process of planning activities to existing works, it is suggested that land owners follow these steps so that applications can be reviewed more effectively:

1. Determine if the existing works are on their land or Crown Land.
2. Determine if they are located in an Application Only Area/Reserve area established under the *Land Act*.
3. Determine if the works were authorized by the appropriate authority. If yes, skip to step 5.
4. Seek approval from the appropriate authority. Approval may or may not be granted depending on the situation.
5. Plan and update existing works to current Best Management Practices.
6. Include other mitigation practices, such as landscape restoration (planting native riparian vegetation), substrate improvement (removing or mitigating existing groynes), and other habitat improvements.

As proponents start planning new works, it is very important they make the appropriate applications and seek the necessary approvals from federal, provincial, and local governments. Commencing work without approval is considered to be in trespass and may be subject to enforcement actions by the respective agencies. Contact *FrontCounterBC* and your local government for information pertaining to your proposal. Alternatively, retain the services of a Qualified Professional to do this work on your behalf.

2.6.2 Due Diligence

Due diligence is defined as reasonable steps taken by a person to prevent foreseeable risks and/or to satisfy a legal requirement.

The BC Ministry of Environment (MOE) (MOE, 2019a) defines due diligence when working in and around water. MOE indicates:

It is your responsibility when working in and around water to:

1. *Be familiar with the municipal, provincial, and federal legal requirements;*
2. *Recognize and address the potential impacts to the aquatic and riparian habitats, water quality and quantity, fish and wildlife populations, and public safety and property from your proposed works;*
3. *Recognize and address the need to avoid, mitigate or lessen those impacts or risks;*
4. *Ensure the protection of fish and wildlife populations and their habitats, including species at risk;*
5. *Ensure the protection of properties and human health;*
6. *Obtain the appropriate permits and authorizations from all regulatory agencies before proceeding with activities; and*
7. *Conduct your works in a manner that complies with the law and avoids, mitigates or lessens potential impacts to aquatic and riparian habitats, water quality and quantity, fish and wildlife populations, and public safety and property.*

This document helps address due diligence by bringing attention to the legal requirements around shoreline development works and providing guidance and resources to navigate and the various processes needed to fulfil due diligence.

2.6.3 Qualified Professionals

The BC Government defines a Qualified Professional (QP) as someone who is a registered professional in their field or an accredited practitioner.[4]

For works located in shoreline segments with identified shoreline sensitivities, such as shore spawning kokanee, or an AHI rank of *Moderate*, *High* or *Very High*, they will likely require the services of a QP to complete and submit documentation to *FrontCounterBC* and possibly DFO. Similarly, sites of cultural importance or archaeological potential may also require a QP to assist with the application. The necessity to engage a QP increases as site sensitivities, AHI rankings, cultural values or archeological potential increases. Information contained in this document will assist proponents and QPs in their work, but additional studies may be required to address site-specific issues and limitations of currently available information.

2.6.4 Professional Reliance and Accountability

Professional reliance is the practice of accepting and relying upon the decisions and advice of resource professionals who accept responsibility and can be held accountable for the decisions they make and the advice that they give. [5]

[4] (British Columbia, 2019)
[5] See PRWG, 2008 for examples.

Professional accountability is acknowledgement and assumption of obligations under professional legislation and accompanying bylaws, including the potential for investigations and discipline to be imposed by the profession.[6]

It is important to understand the concepts of professional reliance and professional accountability when choosing to retain the services of a Qualified Professional (QP). Reliance on a QP to complete assessments that provide professional opinion is a primary source of risk. For example, QPs who provide opinion on whether or not serious harm to fish and fish habitat will occur after avoidance and mitigation measures are applied is a primary source of risk if that opinion is based upon insufficient data collection or has not adequately considered habitats, species, or other features that are present. This is due to the fact that a QP's opinions that proposed works will not cause serious harm to fish or fish habitat would likely permit works to proceed without DFO review if they are located in a shoreline segment with an AHI ranking of *Low*, *Very Low*, or *Moderate*. (Note that some applications will require DFO review regardless of location.)

Although using a QP may keep the due diligence defense, it represents a risk relative to the past practice of limiting determinations of harm specifically to DFO assessors. With this, it is suggested that proponents carefully consider who they retain as a QP as part of their application process.

2.7 Addressing Impacts

The general principles of shoreline development are to design in such a way that there is "No Net Loss" in habitats present. These principles are supported by the Environmental Mitigation Policy for BC (http://www.env.gov.bc.ca/emop/). In general, these principles are achieved through application of the following mitigation options: (1) avoidance of environmental impacts and associated components; (2) minimization of unavoidable impacts on environmental values and associated components; (3) restore on site environmental values and associated components, and, (4) offset impacts to environmental values of components for residual impacts that cannot be minimized.

After reviewing the project proposal and the potential impacts or risk to identified values, MFLNRO, DFO, KNC and/or RDCK may determine that the impacts are not acceptable if the impact to the values identified are too great and compensation is not feasible or adequate to address the impacts.

2.7.1 Avoiding Impacts

The first step, avoidance, involves the prevention of impacts, either by choosing an alternate project, alternate design, or alternate site for development. It is the first and best

[6] See PRWG, 2008 for examples.

choice of mitigation alternatives. Because it involves prevention, the decision to avoid a high value/high risk area or to redesign a project so that it does not affect a high value area must be taken very early in the planning process. It may be the most efficient and cost-effective way of conserving important habitats because it does not involve minimization, compensation, or monitoring costs. Avoidance may include a decision not to proceed with the project due to the values/risk that are present.

2.7.2 Minimizing Unavoidable Impacts

Minimization should only be considered once the decision has been made that a project must proceed, that there are no reasonable alternatives to the project, and that there are no reasonable alternatives to locating the project within key high value habitat or high-risk areas. Minimization involves the reduction of adverse effects of development on the functions and values at all project stages (including planning, design, reclamation, remediation, implementation and monitoring) to the smallest practicable degree.

2.7.3 Restoration of Unavoidable Impacts

Restoration should only be considered under the same circumstances as minimizing impacts: once the decision has been made that a project must proceed, that there are no reasonable alternatives to the project, and that there are no reasonable alternatives to locating the project within key high value habitat or high-risk areas. Restoration involves activities that attempt to re-create lost conditions to re-establish the processes necessary for functioning ecosystems.

2.7.4 Compensating for Residual Impacts

Compensation is the last resort in the mitigation process and is an indication of failure in the three earlier steps. In many cases, compensation may not be an option and it should only be considered for residual effects that were impossible to minimize or offset habitat related effects. Compensation refers to a variety of alternatives that attempt to “make up for” the unavoidable losses of, or damage to, values. Compensation may be an option for achieving “no net loss” when residual impacts of projects on values are deemed irreversible after relocation, redesign, or mitigation options have been implemented.

Habitat compensation involves replacing the loss of fish habitat with newly created habitat or improving the productive capacity of some other natural habitat. Depending on the nature and scope of the compensatory works, habitat compensation may require, but not be limited to, several years of post-construction monitoring and evaluation to ensure actions completed were effective. In the event that functional objectives of the compensation are not achieved (due to failure or inadequate maintenance), additional remediation or redevelopment of the compensation works may be required to achieve the compensation objectives. There is no guarantee that projects in high value fish habitats

that result in serious harm of fish habitat will be authorized by either the Province under the *Water Sustainability Act*, or by DFO under the *Fisheries Act*.

3.0 SHORELINE DEVELOPMENT GUIDELINES

3.1 How to Use of this Shoreline Guidance Document

This document is intended to be used in conjunction with the maps produced through the FIM process. These maps can be found in the appendix of this document as well as online at www.kootenaylakepartnership.com. Refer to the earlier mapping section of this document for guidance on how to interpret the maps.

To use this Shoreline Guidance Document, it is recommended to take the general process below. Figure 1 of this document also provides a flow chart showing a similar process.

1. Find the shoreline segment for the area in question. You can use the maps in the appendix of this document or the interactive map located at www.kootenaylakepartnership.com.
2. Determine the Aquatic Habitat Index (AHI) for shore segment in question. This is the thin coloured line the furthest away from the lake. Use the legend to determine the AHI rating.
3. Determine the Ktunaxa cultural values for the shoreline segment in question. This is the middle colored thick line 2nd in from the lake. Use the legend to determine if enhanced engagement is required.
4. Determine the archaeological potential for the shoreline segment in question. This is the thick line closest to the lake. Determine the archaeological values map colour.
5. Determine the specific type of works that are being proposed and planned.

Ecological Assessment

6. Use the Ecological Activity Risk Matrix (Tables 3a,3b, and 3c) to determine the risk level associated with your specific works and the AHI of the shoreline segment in question.
7. Use the risk level information in section 3.3.2 to determine the steps you need to follow before your works can commence.

Cultural Values Assessment

8. Use the Cultural Values Activity Risk Matrix (Tables 4a and 4b) to determine the risk level associated with your specific works and the level of engagement needed for the shoreline segment in question.
9. Use the risk level information in section 3.3.2 to determine the steps you need to follow before your works can commence.

Archaeological Assessment

10. Use the Archaeological Activity Risk Matrix (Tables 5a and 5b) to determine the risk level associated with your specific works and the archaeological potential (map colour) needed for the shoreline segment in question.
11. Use the risk level information in section 3.4.2 to determine the steps you need to follow before your works can commence.

For any questions about this process, please contact *FrontCounterBC* for more information.

3.2 Evaluating Ecological Risk

3.2.1 Background

The shoreline segments in Kootenay Lake have been separated into vulnerability zones that mirror the five-class relative habitat rankings of the Aquatic Habitat Index (AHI) for Mabel, Shuswap, Little Shuswap, and Mara Lakes (Schleppe, 2009b; Schleppe 2011). Under this system, the AHI ranking for an individual shoreline segment represents its current habitat value relative to all other shoreline segments on Kootenay Lake. This shoreline index considers many biophysical characteristics, riparian conditions, contributions to key salmonid and white sturgeon life history stages (shore spawning kokanee or high salmonid juvenile rearing values), wildlife values, and existing land use impacts.[7]

Regardless of the AHI ranking, all areas of the lake shoreline provide fish habitat. Even segments with an AHI rank of *Very Low* contribute to overall fisheries production or contain important wildlife habitat, such as osprey nests. An AHI rank of *Moderate* may have key habitat features, such as aquatic vegetation or critical sturgeon areas, that warrant consideration as part of any land use decision or shoreline alteration process.

A key assumption of the AHI classification system is that the vulnerability of a shoreline segment to land use impact or related changes corresponds directly with its value as fish habitat or the presence of key site sensitivities. As an example, the risks to fish habitat are greatest in areas of greatest fish habitat value and therefore these are more vulnerable.

The AHI describes the relative habitat value of Kootenay Lake shoreline and incorporates data from a variety of sources and strengths.[8] In some shoreline areas, habitat degradation has occurred, but high values have been documented indicating they contain a habitat attribute that is critical to the maintenance of a healthy population, such as

[7] Refer to 2013 report by Schleppe and Cormano: *Foreshore Inventory, Mapping, and Aquatic Habitat Index: Kootenay Lake* for more information.

[8] For example, field data describing habitat modifications was field verified during inventory, whereas other datasets, such as the juvenile rearing value, are based upon habitat characteristics rather than sampling effort.

shore spawning kokanee. Stream deltas, aquatic vegetation, kokanee shore spawning areas, and high value juvenile rearing areas are considered in this ranking system because of their particularly high fish habitat value and sensitivity, regardless of land-use impacts.

3.2.2 Risk Determination

The Ecological Risk Matrix found in Tables 3a, 3b, and 3c below includes a wide variety of possible development activities along the shoreline and provides the risk level based on the AHI determined for the specific shoreline segment. For some activities, references to other important resources is given.

Once this risk level is determined, recommended steps are provided to help proponents move through the existing government legislation and regulations.

For all development activities, if *Species at Risk Act* (SARA) species and/or critical habitat are present, refer to the Projects Near Water website for next steps.

The Ecological Activity Matrix also includes reference to the need to have a Crown Land Tenure, Section 11 approval under the *Water Sustainability Act*, and a *Fisheries Act* Review for the specific activity type. Contact *FrontCounterBC* for questions around any of these processes.

An overall recommendation for any development work activities, for all risk levels, is to contact *FrontCounterBC* to review the proposed works as early in the planning stages as possible.

Table 3a - **Ecological Activity Risk Matrix - Part 1.** After determining the Aquatic Habitat (AHI) ranking for a shoreline segment, find the risk assessment associated with the specific activity (L = Low, M = Moderate, H = High, VH = Very High).

Activity	Crown Land Tenure Required	Section 11 Water Sustainability Act	Fisheries Act Review Recommended	Risk Assessment				
				AHI Ranking Very High	AHI Ranking High	AHI Ranking Moderate	AHI Ranking Low	AHI Ranking Very Low
Aquatic Vegetation Removal								
Removing native aquatic vegetation by hand or mechanical cutting for swimming areas and private beach access	N	Y	Refer to Website	VH	VH	VH	VH	H
Removing non-native/invasive aquatic vegetation by hand or mechanical cutting for swimming areas and private beach access	N	Y	Refer to Website	VH	VH	H	M	L
Dredging, Infilling and Beach Creation								
Dredging (new proposals)	Maybe	Y	Y	VH	VH	VH	VH	VH
Maintenance Dredging: dredging has occurred in last 10 years, no temporary or permanent increase in footprint below the natural boundary, dredged material deposited on land	Maybe	Y	Refer to Website, Likely N	VH	VH	VH	VH	VH
Lake infilling (e.g. extension of upland landscaping)	Y	Y	Refer to Website, Likely Y	VH	VH	VH	VH	VH
Beach creation below the lake natural boundary	Maybe	Y	Y	VH	VH	VH	VH	H
Beach creation above the lake natural boundary	Maybe	Maybe	Refer to Website, Likely N	**Refer to Landscaping in Land Development**				
Transition to Private Land from Crown Land								
Application to purchase crown land (crown grant)	Y	N	N	VH	H	M	L	L
Erosion Control, Foreshore Sediment Control, Foreshore Disturbance or Wave Control Structures - (Refer to Figure 2)								
New groyne construction or increase in existing footprint	**Not allowed**							
Maintenance of existing groyne, no increase in existing footprint	Maybe	Y	N	**Refer to Forests, Lands and Natural Resource Operations**				
Erosion control (e.g. concrete, rip rap, vegetation, etc.)	Maybe	Y	Refer to Website	VH	VH	H	M	L
Infill breakwaters or boat basins	Y	Y	Refer to Website	VH	VH	H	H	M
Wave control structures	Y	Y	Refer to Website	VH	VH	H	M	L
Foreshore sediment disturbance and removal of lakebed substrate	N	Y	Refer to Website	VH	VH	H	M	L

Table 3b - **Ecological Activity Risk Matrix - Part 2.** After determining the Aquatic Habitat (AHI) ranking for a shoreline segment, find the risk assessment associated with the specific activity (L = Low, M = Moderate, H = High, VH = Very High).

Activity	Crown Land Tenure Required	Section 11 Water Sustainability Act	Fisheries Act Review Recommended	Risk Assessment				
				AHI Ranking Very High	AHI Ranking High	AHI Ranking Moderate	AHI Ranking Low	AHI Ranking Very Low
Boat Launches								
Construction of new hard surface boat launch or repair/upgrade of existing hard surface boat launch without land tenure	Y	Y	Refer to Website	VH	VH	VH	H	H
Upgrade/repair of existing hard surface boat launch with land tenure and within existing footprint	Maybe	Y	N	VH	H	H	M	M
Upgrade/repair of existing hard surface boat launch with land tenure and increasing size of the existing allowable footprint	Y	Y	Y	VH	VH	H	M	M
Construction of new boat rail launch or repair/upgrade of existing boat rail launch without land tenure	Y	Y	Refer to Website	VH	H	M	L	L
Upgrade/repair of existing boat rail launch with land tenure and within existing footprint	Maybe	Y	N	H	H	M	M	M
Buoys								
Placement of up to 2 helical screw anchor mooring buoys for non-commercial use. Refer also to Transport Canada - Navigable Waters	N	Maybe	N	H	H	M	L	L
Placement of up to 2 non-helical screw mooring buoys for non-commercial use. Refer also to Transport Canada - Navigable Waters	N	Maybe	N	VH	H	H	M	L
Placement mooring buoys for commercial use – refer to Marina Activities.	Y	Maybe	N	**Refer to Transport Canada - Navigable Waters**				
Docks / Boathouses / covered boat storage areas								
Docks	Maybe - Refer to Dock Figure 3	Y	Refer to Website	**Refer to Figure 3**				
Residential boathouses / covered boat storage / permanent non-moorage structures	**Not allowed**							

Table 3c - **Ecological Activity Risk Matrix - Part 3.** After determining the Aquatic Habitat (AHI) ranking for a shoreline segment, find the risk assessment associated with the specific activity (L = Low, M = Moderate, H = High, VH = Very High).

Activity	Crown Land Tenure Required	Section 11 Water Sustainability Act	Fisheries Act Review Recommended	Risk Assessment				
				AHI Ranking Very High	AHI Ranking High	AHI Ranking Moderate	AHI Ranking Low	AHI Ranking Very Low
Marinas - Commercial								
Upgrade and new construction	Y	Y	Refer to Website, Likely Y	**Refer to Figure 4**				
Water Withdrawal, Use or Discharge								
Waterline - directional drilling (may require a Water License)	N	Y	Refer to Website	H	H	M	M	L
Waterline - open excavation (may require a Water License)	N	Y	Refer to Website	VH	VH	H	M	L
Geothermal heating/cooling - commercial, industrial, strata or multi-family (may require a Water License)	Maybe	Y	Refer to Website	VH	VH	VH	H	H
Geothermal heating/cooling - single family residence (may require a Water License)	Maybe	Y	Refer to Website	VH	H	M	M	M
Treated effluent discharge pipe	Maybe	Y	N (EC)	VH	VH	H	M	M
Commercial water withdrawals (may require a Water License)	Maybe	Y	Refer to Website	VH	VH	H	M	L
Pile-supported Structures below the Natural Boundry								
Overwater piled structure (e.g. building, deck, etc.)	Y	Y	Refer to Website	VH	VH	VH	VH	H
Elevated boardwalk located offshore of the lake natural boundary	Y	Y	Refer to Website	VH	H	H	H	M
Land development								
Native Vegetation modification / removal	Maybe	Maybe	Refer to Website	VH	VH	VH	H	H
Non-native Vegetation modification / removal	Maybe	Maybe	Refer to Website	VH	H	M	L	L
Building permit application	Y	Y	Y	**Refer to Applicable Local Government**				
Landscaping with Native Vegetation	N	N	Refer to Website	**Refer to Applicable Local Government**				
Landscaping with Non-native Vegetation	N	N	Refer to Website	**Refer to Applicable Local Government**				
Development permit applications	N	N	N	**Refer to Applicable Local Government**				
Drilling and blasting (note: within 30 m also requires liaison with Local Government, as other permits may exist.)	N	N	Refer to Website	VH	VH	VH	H	M
Septic application	Maybe	N	N	**Refer to Interior Health Authority**				

The following boxes review the risk activities for *Low, Moderate, High*, and *Very High* ecological risk, along with recommended steps proponents should follow to address their due diligence.

In cases where multiple activities are proposed, the combined risk to fish habitat may increase. In these cases, proponents should default to the highest risk identified and retain a Qualified Professional to determine whether the overall risk to fish habitat has increased. For development activities not listed in Tables 3a, 3b or 3c, proponents are recommended to apply the steps listed for *High* risk activities unless advised of a *Very High* risk by a Qualified Professional.

Low Risk Activities
• Poses low risk of harm to fish habitat • Prevents harm to fish or fish habitat if experienced contractors complete works following endorsed best management practices. • Should have supervision of works by a qualified environmental professional to ensure harm to fish habitat does not occur.
Project proponents need to complete the following steps: 1. Ensure compliance with fish habitat protection provisions under section 35(1) of the *Fisheries Act,* which prohibits any activity that results in serious harm to fish (See https://laws-lois.justice.gc.ca/eng/acts/f-14/) 2. Refer to the DFO Projects Near Water website before starting work and complete a *Request for Review* application form if needed. The need for this application depends on the proposed works. At a minimum, works should follow the best management practices referenced in Table 2. 3. Get authorization under section 35(2) of the *Fisheries Act* to legally proceed, if authorization is necessary. 4. Refer to Table 3a, 3b, or 3c to determine if a Section 11 under the Water Sustainability Act is needed. Contact FrontCounterBC and submit any required documentation. FrontCounterBC can provide guidance to help determine what permits or approvals are necessary for an application. 5. Refer to Table 3a, 3b, or 3c to determine if a Crown Land tenure is required. The coding of Y (Yes), N (No), or Maybe is only a preliminary guide. Each application and its requirement is based on the site specific situation. You must contact FrontCounterBC before proposing work. Staff will provide additional guidance and information to determine what permits or approvals are necessary for an application. In certain situations, the indicated activity will not be allowed and no tenure will be issued.

Moderate Risk Activities
• Poses moderate risk of harm to fish habitat • May require authorization under section 35(2) of the *Fisheries Act* to legally proceed. • Allows harm to fish or fish habitat to be prevented if appropriate relocation, redesign and mitigation measures are implemented. • Has mitigation and compensation costs to the proponent that *may* be high. • Requires professional planning and assessment; costs to the proponent *may* be high.
Project proponents need to complete the following steps: 1. Ensure compliance with fish habitat protection provisions under section 35(1) of the *Fisheries Act,* which prohibits any activity that results in serious harm to fish (See https://laws-lois.justice.gc.ca/eng/acts/f-14/) 2. Refer to the DFO Projects Near Water website before starting work and complete a Request for Review application form if needed. The need for this application depends on the proposed works. At a minimum, works should follow the best management practices referenced in **Table 2**. 3. Get authorization under section 35(2) of the *Fisheries Act* to legally proceed, if authorization is necessary. 4. Refer to **Table 3a, 3b, or 3c** to determine if a Section 11 under the Water Sustainability Act is needed. Contact FrontCounterBC and submit any required documentation. FrontCounterBC can provide guidance to help determine what permits or approvals are necessary for an application. 5. Refer to **Table 3a, 3b, or 3c** to determine if a Crown Land tenure is required. The coding of Y (Yes), N (No), or Maybe is only a preliminary guide. Each application and its requirement is based on the site specific situation. You must contact FrontCounterBC before proposing work. Staff will provide additional guidance and information to determine what permits or approvals are necessary for an application. In certain situations, the indicated activity will not be allowed and no tenure will be issued.

High Risk Activities

- Poses high risk of harm to fish habitat.
- Will most likely require authorization under section 35(2) of the *Fisheries Act* to legally proceed.
- Includes significant challenges to prevention of harm through relocation, redesign and mitigation measures or to compensation for fish habitat losses that may occur.
- Has mitigation and compensation costs to the proponent that *may* be high.
- Requires professional planning and assessment; costs to the proponent *may* be high.

Project proponents need to complete the following steps:

1. Ensure compliance with fish habitat protection provisions under section 35(1) of the *Fisheries Act,* which prohibits any activity that results in serious harm to fish (See https://laws-lois.justice.gc.ca/eng/acts/f-14/)
2. Refer to the DFO Projects Near Water website before starting work and complete a Request for Review application form if needed. The need for this application depends on the proposed works. At a minimum, works should follow the best management practices referenced in **Table 2**. It is advisable to submit a Request for Review for high risk activities to avoid potential harm to fish and their habitats.
3. Get authorization under section 35(2) of the *Fisheries Act* to legally proceed, if authorization is necessary.
4. Refer to **Table 3a, 3b, or 3c** to determine if a Section 11 under the Water Sustainability Act is needed. Contact FrontCounterBC and submit any required documentation. FrontCounterBC can provide guidance to help determine what permits or approvals are necessary for an application.
5. Refer to **Table 3a, 3b, or 3c** to determine if a Crown Land tenure is required. The coding of Y (Yes), N (No), or Maybe is only a preliminary guide. Each application and its requirement is based on the site specific situation. You must contact FrontCounterBC before proposing work. Staff will provide additional guidance and information to determine what permits or approvals are necessary for an application. In certain situations, the indicated activity will not be allowed and no tenure will be issued.

Very High Risk Activities

- Poses very high risk of harm to fish habitat.
- Will most likely require authorization under section 35(2) of the *Fisheries Act* to legally proceed.
- Includes significant challenges to prevention of harm through relocation, redesign and mitigation measures or to compensation for fish habitat losses that may occur.
- Has mitigation and compensation costs to the proponent that *may* be high.
- Requires professional planning and assessment; costs to the proponent *may* be high.

Project proponents need to complete the following steps:

1. Ensure compliance with fish habitat protection provisions under section 35(1) of the *Fisheries Act,* which prohibits any activity that results in serious harm to fish (See https://laws-lois.justice.gc.ca/eng/acts/f-14/)
2. Refer to the DFO Projects Near Water website before starting work and complete a Request for Review application form if needed. The need for this application depends on the proposed works. At a minimum, works should follow the best management practices referenced in **Table 2**. It is advisable to submit a Request for Review for very high-risk activities to avoid potential harm to fish and their habitats.
3. Get authorization under section 35(2) of the *Fisheries Act* to legally proceed, if authorization is necessary.
4. Refer to **Table 3a, 3b, or 3c** to determine if a Section 11 under the Water Sustainability Act is needed. Contact FrontCounterBC and submit any required documentation. FrontCounterBC can provide guidance to help determine what permits or approvals are necessary for an application.
5. Refer to **Table 3a, 3b, or 3c** to determine if a Crown Land tenure is required. The coding of Y (Yes), N (No), or Maybe is only a preliminary guide. Each application and its requirement is based on the site specific situation. You must contact FrontCounterBC before proposing work. Staff will provide additional guidance and information to determine what permits or approvals are necessary for an application. In certain situations, the indicated activity will not be allowed and no tenure will be issued.

3.3 Evaluating Cultural Values

3.3.1 Background

The Ktunaxa Nation Council (KNC) represents the aboriginal rights and title of Ktunaxa citizens living in Canada, including at Yaqan Nukiy (Lower Kootenay Band) at the south end of Kootenay Lake near Creston. Ktunaxa rights and title remained in place after Canada and the United States settled on a border in 1846 and Aboriginal rights were recognized and affirmed in the Canadian constitution of 1982. As such, the Ktunaxa Nation Council and the people of Yaqan Nukiy play an important role in the past, present, and future stewardship of Kootenay Lake and its shorelines.

The special nature of Ktunaxa rights requires local, provincial and federal governments (the Crown) to consult meaningfully with the Ktunaxa Nation Council and work to accommodate Ktunaxa cultural values and other interests where they may be impacted by a government decision. On Kootenay Lake, many Ktunaxa rights are closely connected to important places, resources (including plants, fish, and habitats), and practices that rely on Kootenay Lake shorelines. While the ultimate responsibility for consultation and engagement with the Ktunaxa is held by local, provincial and federal governments, the Crown may delegate some aspects of this to third parties like private land owners and developers. When this happens, the Crown remains responsible for making sure that consultation happens properly. Depending on the specific activities proposed, the process may be time consuming especially in areas identified by the KNC for enhanced engagement. The table below, and associated maps, are intended to help regulators, as well as others, anticipate where certain kinds of Kootenay Lake shoreline activities are likely to require more in-depth engagement in relation to currently documented Ktunaxa Cultural Values. As additional work takes place, the table below, and associated maps, may be refined or updated.

3.3.2 Risk Determination

In this assessment, risk to Ktunaxa Cultural Values is evaluated related to the likelihood of disturbance by specific activities and the associated level of engagement with the Ktunaxa. The following Cultural Values Engagement Matrix outlines the level of risk the proposed activity would have on the cultural values that may be present and how that risk will be taken into account for either standard or enhanced engagement.

Table 4a -Cultural Values Engagement Matrix - Part 1. After determining if enhanced engagement is required for a shore segmement (Yes - purple, No - Grey), find the risk assessment associated with the specific activity. (Red - High, Yellow - Moderate, Green - Low).

Activity	Level of Engagement Areas	
	Purple	Grey
Aquatic Vegetation Removal		
Removing native aquatic vegetation by hand or mechanical cutting for swimming areas and private beach access	Enhanced	Standard
Removing non-native/invasive aquatic vegetation by hand or mechanical cutting for swimming areas and private beach access	Standard	Standard
Dredging, Infilling and Beach Creation		
Dredging (new proposals)	Enhanced	Standard
Maintenance Dredging: dredging has occurred in last 10 years, no temporary or permanent increase in footprint below the natural boundary, dredged material deposited on land	Enhanced	Standard
Lake infilling (e.g. extension of upland landscaping)	Enhanced	Standard
Beach creation below lake natural boundary	Enhanced	Standard
Beach creation above the lake natural boundary	Enhanced	Standard
Transition to Private Land from Crown Land		
Application to purchase crown land (crown grant)	Enhanced	Standard
Erosion Control, Foreshore Sediment Control, Foreshore Disturbance or Wave Control Structures		
New groyne construction or increase in existing footprint	Not Allowed	
Maintenance of existing groyne, no increase in existing footprint	Enhanced	Standard
Erosion control (e.g. concrete, rip rap, vegetation, etc.)	Enhanced	Standard (Low to Moderate Risk)
Infill breakwaters or boat basins	Enhanced	Standard
Wave control structures	Enhanced	Standard
Foreshore sediment disturbance and removal of lakebed substrate	Enhanced	Standard
Boat Launches		
Construction of new hard surface boat launch or repair/upgrade of existing hard surface boat launch without land tenure	Enhanced	Standard
Upgrade/repair of existing hard surface boat launch with land tenure and within existing footprint	Enhanced	Standard
Upgrade/repair of existing hard surface boat launch with land tenure and increasing size of the existing allowable footprint	Enhanced	Standard
Construction of new boat rail launch or repair/upgrade of existing boat rail launch without land tenure	Enhanced	Standard
Upgrade/repair of existing boat rail launch with land tenure and within existing footprint	Enhanced	Standard
Buoys		
Placement of up to 2 helical screw anchor mooring buoys for non-commercial use. Refer also to Transport Canada - Navigable Waters	Standard	Standard
Placement of up to 2 non-helical screw mooring buoys for non-commercial use. Refer also to Transport Canada - Navigable Waters	Enhanced	Standard
Placement mooring buoys for commercial use – refer to Marina Activities. Refer also to Transport Canada - Navigable Waters	Enhanced	Standard

Table 4b -Cultural Values Engagement Matrix - Part 2. After determining if enhanced engagement is required for a shore segmement (Yes - purple, No - Grey), find the risk assessment associated with the specific activity. (Red - High, Yellow - Moderate, Green - Low).

Activity	Level of Engagement Areas	
	Purple	Grey
Docks / Boathouses / covered boat storage areas		
Docks	Enhanced	Standard
Residential boathouses / covered boat storage / permanent non-moorage structures	Not Allowed	
Marinas - Commercial		
Upgrade and new construction	Enhanced (risk varies from Moderate to High)	Standard (Low to Moderate Risk)
Water Withdrawal, Use or Discharge		
Waterline - directional drilling (May require a Water Licence)	Enhanced	Standard
Waterline - open excavation (May require a Water Licence)	Enhanced	Standard
Geothermal heating/cooling - commercial, industrial, strata or multi-family (May require a Water Licence)	Enhanced	Standard
Geothermal heating/cooling - single family residence (May require a Water Licence)	Enhanced	Standard
Treated effluent discharge pipe	Enhanced	Standard
Commercial water withdrawals (May require a Water Licence)	Enhanced	Standard
Pile-supported Structures below the Natural Boundary		
Overwater piled structure (e.g. building, deck, etc.)	Enhanced	Standard
Elevated boardwalk located offshore of the lake natural boundary	Enhanced	Standard
Land development		
Native Vegetation modification / removal	Enhanced	Standard
Non-native Vegetation modification / removal	Enhanced	Standard
Building permit application	Enhanced	Standard
Landscaping with Native Vegetation	Enhanced	Standard
Landscaping with Non Native Vegetation	Enhanced	Standard
Development permit applications	Enhanced	Standard
Drilling and blasting (note that any drilling or blasting within 30 m of HWL also requires liaison with Local Government, as other permits may exist.)	Enhanced	Standard
Septic application	Enhanced	Standard

The following boxes explain the level of engagement process for engaging with the Ktunaxa in order to streamline a development application process.

Standard Engagement with Ktunaxa
Shoreline areas identified as requiring standard engagement with the Ktunaxa Nation should follow the engagement procedure outlined within the Ktunaxa – BC Strategic Engagement Agreement: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/consulting-with-first-nations/agreements/knc_sea_extension_schedule_a_to_confirmation_agreement_final_-_2018.pdf Applications in standard engagement areas should be submitted to the appropriate regulatory agency and referred to the KNC as per standard practice. Please also follow the guidelines within the ecological and archaeological risk matrices and provide a detailed application package to the regulatory body.

Enhanced Engagement with Ktunaxa

Shoreline areas identified as requiring enhanced engagement with the Ktunaxa Nation Council are those that are anticipated, based on current information, to be more complex in nature and require a more in-depth review by the Ktunaxa Nation Council or one of its member communities. Decisions made within enhanced engagement areas will generally call for increased Ktunaxa Nation involvement.

This level of engagement aligns with the Ktunaxa – BC Strategic Engagement Agreement available here:
http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations/first-nations-negotiations/first-nations-a-z-listing/ktunaxa-nation

If a development falls within an area requiring enhanced Ktunaxa engagement, please follow the guidelines within the aquatic ecosystem and archaeological risk matrices and provide a detailed application package to the appropriate BC or local regulatory body.

Depending on the activity and the shoreline area, there may be a high risk of infringing on Ktunaxa title and rights. In many cases, activities with high risk to Ktunaxa Cultural Values are unlikely to be supported unless mitigations or specific work procedures are agreed to, implemented and monitored. If you have questions about an activity identified being high risk, please contact the Ktunaxa Nation Council Referral Coordinator.

Referral Coordinator
Ktunaxa Nation Council
7468 Mission Road
Cranbrook, BC, V1C 7E5
Referrals@ktunaxa.org
1-250-489-2464 ext. 4026

3.4 Evaluating Archaeological Potential

3.4.1 Background

Archaeological remains include deposits of objects (stone artifacts, bone fragments and fire broken rock) and features such as pits, hearths, cairns and pictographs that were left behind as a result of a range of human activities that took place hundreds to more than 10,000 years ago. The arrangement of these materials on the landscape provides clues as to what these activities were, so as to decipher and reconstruct the ways of life of past inhabitants. Any disturbance of the arrangements of the clues makes it difficult to accurately reconstruct what happened. The *Heritage Conservation Act* was passed with the intention of protecting archaeological sites from disturbances or alterations that would negatively affect their value or "significance". One activity of archaeologists is to assemble inventories of archaeological sites so that they can be conserved.

There have been a number of inventories conducted over the years, but the scarcity of resources to support this activity are such that most parts of the province have not been subject to intensive investigation. The need to be proactive in attempting to conserve important archaeological evidence has given rise to the prediction of the likelihood of occurrence of significant archaeological remains (known as "archaeological potential"), one of the products of an Archaeological Overview Assessment (AOA).

A number of historic shipwrecks exist on the West Arm and main body of Kootenay Lake. While these sites are not covered by the Shoreline Guidance Document's archaeology assessment or associated shoreline maps, all Historic Wrecks and their cargo are protected under the provincial *Heritage Conservation Act*, and may not be damaged, altered or moved in any way without a Section 12 or 14 permit.

3.4.2 Risk Determination

In this assessment, risk to archaeological values is evaluated related to the likelihood of disturbance occurring to landforms known to be associated with archaeological materials and features. The following Archaeological Risk Matrix outlines the level of risk the proposed activity would have on potential archaeological sites, based on the colour of the shoreline segment the activity falls within.

Table 5a - Archaeological Risk Matrix - Part 1. After determining the Archaeological Values colour for a shoreliune segmement, find the risk assessment associated with the specific activity. (L = Low, M = Moderate, H = High, VH = Very High)

Activity	Risk Assessment			
	Red	Orange	Yellow	Brown
Aquatic Vegetation Removal				
Removing native aquatic vegetation by hand or mechanical cutting for swimming areas and private beach access	M	M	L	L
Removing non-native/invasive aquatic vegetation by hand or mechanical cutting for swimming areas and private beach access	M	M	L	L
Dredging, Infilling and Beach Creation				
Dredging (new proposals)	H	H	M	L
Maintenance Dredging: dredging has occurred in last 10 years, no temporary or permanent increase in footprint below the natural boundary, dredged material deposited on land	H	H	M	L
Lake infilling (e.g. extension of upland landscaping)	H	H	M	L
Beach creation below lake natural boundary	VH	VH	M	L
Beach creation above the lake natural boundary	Refer to Landscaping in Land Development			
Transition to Private Land from Crown Land				
Application to purchase crown land (crown grant)	VH	VH	H	L
Erosion Control, Foreshore Sediment Control, Foreshore Disturbance or Wave Control Structures				
New groyne construction or increase in existing footprint	Not allowed			
Maintenance of existing groyne, no increase in existing footprint	VH	VH	H	L
Erosion control (e.g. concrete, rip rap, vegetation, etc.)	H	H	H	L
Infill breakwaters or boat basins	H	H	H	L
Wave control structures	H	H	H	L
Foreshore sediment disturbance and removal of lakebed substrate	VH	VH	H	L
Boat Launches				
Construction of new hard surface boat launch or repair/upgrade of existing hard surface boat launch without land tenure	VH	VH	H	L
Upgrade/repair of existing hard surface boat launch with land tenure and within existing footprint	VH	VH	H	L
Upgrade/repair of existing hard surface boat launch with land tenure and increasing size of the existing allowable footprint	VH	VH	H	L
Construction of new boat rail launch or repair/upgrade of existing boat rail launch without land tenure	VH	VH	H	L
Upgrade/repair of existing boat rail launch with land tenure and within existing footprint	H	H	M	L

Table 5b - Archaeological Risk Matrix - Part 2. After determining the Archaeological Values colour for a shoreline segmement, find the risk assessment associated with the specific activity. (L = Low, M = Moderate, H = High, VH = Very High)

Activity	Risk Assessment			
	Red	Orange	Yellow	Brown
Buoys				
Placement of up to 2 helical screw anchor mooring buoys for non-commercial use. Refer also to Transport Canada - Navigable Waters	M	M	M	L
Placement of up to 2 non-helical screw mooring buoys for non-commercial use. Refer also to Transport Canada - Navigable Waters	M	M	M	L
Placement mooring buoys for commercial use – refer to Marina Activities. Refer also to Transport Canada - Navigable Waters	H	H	M	L
Docks / Boathouses / covered boat storage areas				
Docks	VH	VH	M	L
Residential boathouses / covered boat storage / permanent non-moorage structures	Not allowed			
Marinas - Commercial				
Upgrade and new construction	VH	VH	H	L
Water Withdrawal, Use or Discharge				
Waterline - directional drilling (May require a Water Licence)	M	M	M	L
Waterline - open excavation (May require a Water Licence)	VH	VH	H	L
Geothermal heating/cooling - commercial, industrial, strata or multi-family (May require a Water Licence)	VH	VH	H	L
Geothermal heating/cooling - single family residence (May require a Water Licence)	H	H	H	L
Treated effluent discharge pipe	H	H	H	L
Commercial water withdrawals (May require a Water Licence)	H	H	H	L
Pile-supported Structures below the Natural Boundary				
Overwater piled structure (e.g. building, deck, etc.)	M	M	M	L
Elevated boardwalk located offshore of the lake natural boundary	M	M	M	L
Land development				
Native Vegetation modification / removal	H	H	H	L
Non-native Vegetation modification / removal	M	M	M	L
Building permit application	M	M	M	L
Landscaping with Native Vegetation	M	M	M	L
Landscaping with Non Native Vegetation	M	M	M	L
Development permit applications	H	H	H	M
Drilling and blasting (note that any drilling or blasting within 30 m of high water level also requires liaison with Local Government, as other permits may exist.)	VH	VH	H	M
Septic application	VH	VH	H	M

The following boxes explain the archaeological risk level categories and recommended actions to take in order to streamline a development application process.

In the case that an archaeological assessment is needed, a list of archaeological consultants who are permitted to work in British Columbia can be found here: https://www.bcapa.ca/consulting-firms/

Low Risk
Low risk implies that the action is not likely to impact archaeological materials or features. This could also mean that the action is to take place where recent disturbance is sufficiently great as to have altered the context beyond the capacity of archaeological investigation to detect evidence or reconstruct past human activity beyond presence. If your proposed activity is deemed to have low risk, no further archaeological assessment or action is required.

Moderate Risk
Moderate Risk applies to situations where the activity itself might not constitute a potential threat to intact archaeological materials but ancillary activities (e.g. those involving access to, from or across land or some disturbance of mineral soil) may cause impacts to known archaeological sites or where such are likely to be present. If your proposed activity is deemed to have moderate risk, please follow the Archaeological Chance Find procedure found in Table 2.

High Risk
High Risk pertains to localized and/or relatively superficial effects in locations where the physical evidence is likely to be very sparse, highly localized, deeply buried and/or already too highly disturbed to be of further archaeological value. If your activity is deemed to be of high risk, please contact a consulting archaeologist with experience in this area. The archaeologist should conduct a review of your project and provide you with a recommendation for further action. If the recommendation is that no further work is needed, please submit this in writing to the relevant regulatory agencies as part of your application. If further work is needed in the form of an in-field assessment, please submit the results of the assessment as a part of your application package.

Very High Risk
Very High Risk is defined as the potential for significant pre-contact archaeological remains to be adversely impacted by the activity. If your activity is deemed to be very high risk, please contact a consulting archaeologist with experience in this area to conduct an in-field archaeological assessment. This assessment may require an additional permit, which can take time to obtain, so it is recommended that you contact an archaeologist as soon as possible. The results of the assessment should be submitted to the relevant regulatory agencies as part of your application package.

4.0 PROCESS CONSIDERATIONS

4.1 Monitoring and Adaptive Management

Through the Kootenay Lake Partnership and all the work that was done to create this document, decision-makers around Kootenay Lake move from a reactive position that solicits referrals, offers advice and authorizations, and tracks correspondence as a measure of program outputs to a proactive position. This proactive position enables and engages those best-placed to deliver results-based standards, monitor and audit compliance, and monitor effectiveness. It also allows for reporting on the status of fish and riparian habitat at an ecosystem level through periodic updates to FIM survey data, updating the provincial archaeological database and a way to better address Ktunaxa concerns. Ultimately, whether or not this change achieves objectives such as “No Net Loss” of productive fish habitat or preventing further loss of public access to Kootenay Lake will likely depend on agency preparedness at all levels of government to reallocate staff time that would previously have been spent on referral review and response to compliance and effectiveness monitoring of the FIM, the AOA and the Ktunaxa Cultural Values identification and adaptive management presented in this report.

This document is a living document that is reviewed and maintained by the Kootenay Lake Partnership. Revisions will take place as needed. Any concerns about the content in this document can be communicated to the Program Coordinator of the Kootenay Lake Partnership.

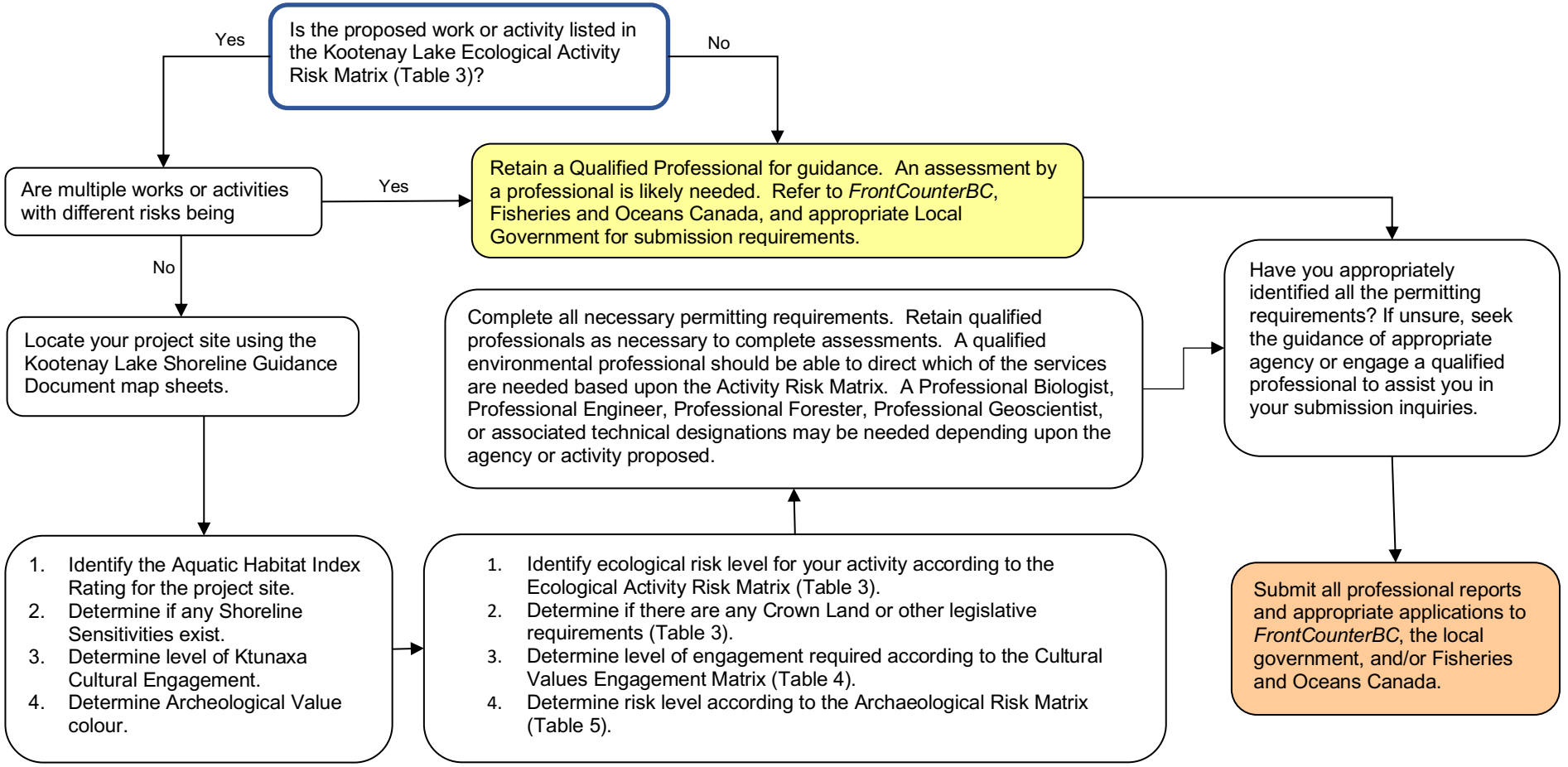
5.0 PROCESS FLOW CHARTS

The following process flow charts are intended to be another tool to help proponents navigate the planning of development activities on Kootenay Lake for certain activities.

Flow charts have been created to show design and assessment steps for:

1. Starting a proposed development activity on Kootenay Lake
2. Lakeshore erosion control on Kootenay Lake
3. New private moorage on Kootenay Lake
4. Commercial and strata moorage on Kootenay Lake

Figure 1 – Design, Assessment, and Review Process Flow Chart for Development Activities that may Impact Fish Habitat, Cultural Values, or Archaeological Values on Kootenay Lake.

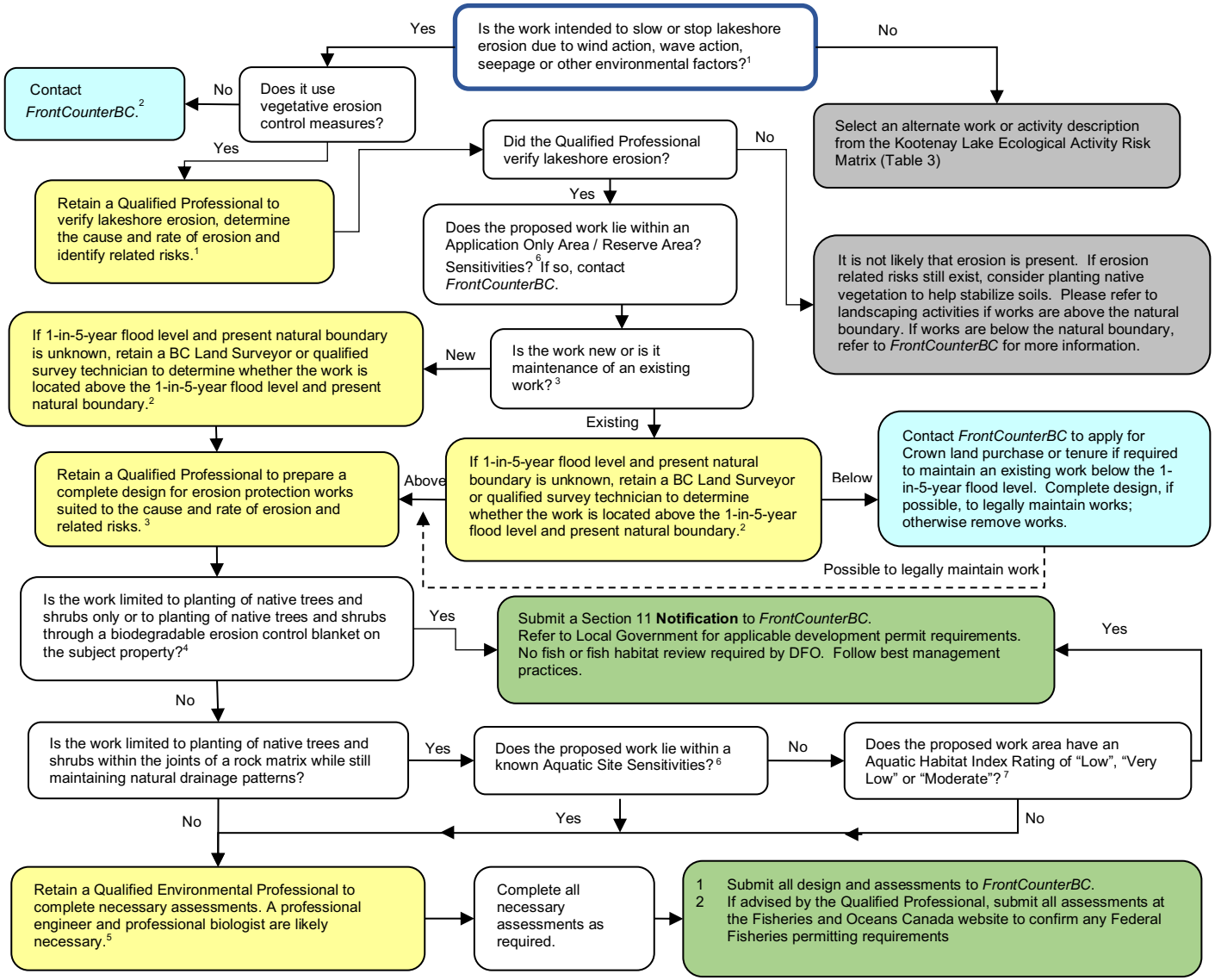


Submission Inquiries

1 Contact *FrontCounterBC* for all Provincial inquiries (Crown Land / Water Act).
2 Contact appropriate Local Government (RDCK, Nelson, and Kaslo) with any local government inquires.
3 Refer to Projects Near Water for Federal Fisheries Inquiries.
4 Engage a Qualified Professional to aid in your submission if needed.

Proponents should contact *FrontCounterBC* for the most up to date application or permitting process for development activities that may impact fish habitat.

Figure 2 – Design and Assessment Flow Chart for Lakeshore Erosion Control on Kootenay Lake



Proponents should contact *FrontCounterBC* for the most up to date application or permitting process for lakeshore erosion control.

Notes:

[1] Indicators of lakeshore erosion include large areas of bare soil and steep, high banks at the natural boundary, noticeable recession of the natural boundary over a period of time, leaning or downed trees with exposed roots at the natural boundary, large patches of muddy water at the lake margin during high water and large deposits of eroded soil on the lakeshore following high water.

[2] All proposed works should not alter the present natural boundary of the subject property and a survey is needed to confirm the location with a high degree of accuracy. Erosion-related risks include loss of property and damage or loss of nearshore structures. You must prove that the works are not able to be placed on private land. Applications pertaining to rock gravity walls, retaining walls, or foreshore fills on Crown land are not normally accepted by *FrontCounterBC*.

[3] The proposed design should be bioengineered and may require the services of a Professional Biologist and Engineer. Maintenance of an existing work is limited to replacement of less than one half of an existing erosion control structure on its existing foundation and must not include any lake ward extension of the existing structure or backfill.

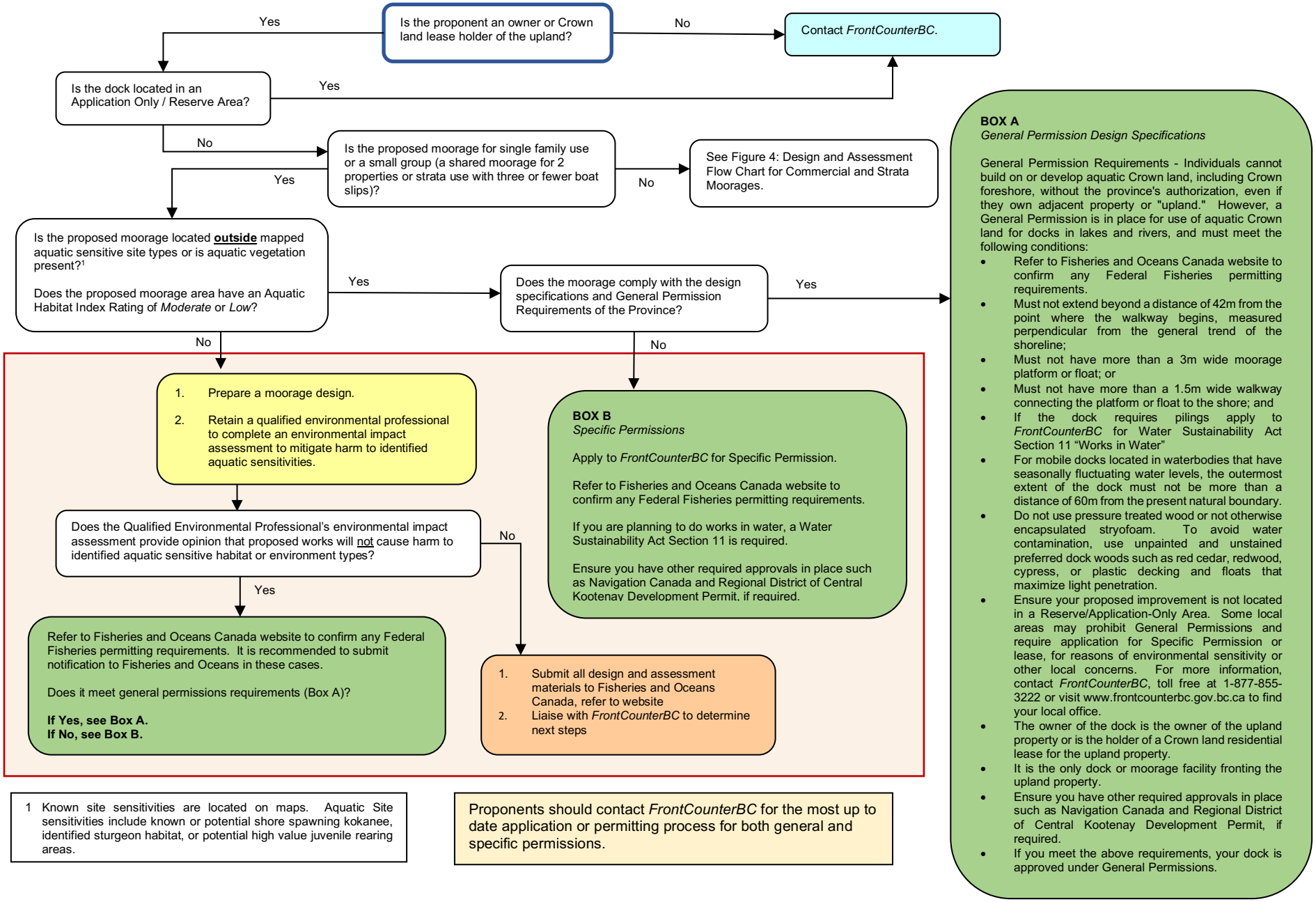
[4] Refer to appropriate bioengineered Best Management Practices and seek the guidance of a professional(s) as needed. Depending upon risks, more than one professional may be required to address engineering or biological considerations.

[5] Many lakeshore erosion protection options are available, including planting of native trees and shrubs, planting of native trees and shrubs through a biodegradable erosion control blanket, planting of native trees and shrubs within the joints of a rock matrix and hard armoring techniques. Additional information is provided in the BC Ministry of Environment report titled *Best Management Practices for Lakeshore Stabilization* (refer to referenced Best Management Practices in this document and through Provincial or Federal Agencies.

[6] Known site sensitivities are located on maps. Aquatic Site sensitivities include known or potential shore spawning kokanee, identified sturgeon habitat, or potential high value juvenile rearing areas. Other site sensitivities may also be present onsite, and a Qualified Environmental Professional should be consulted for guidance if needed (e.g., raptor nests, etc.)

[7] Aquatic Habitat Index Ratings are located on the maps included in this document.

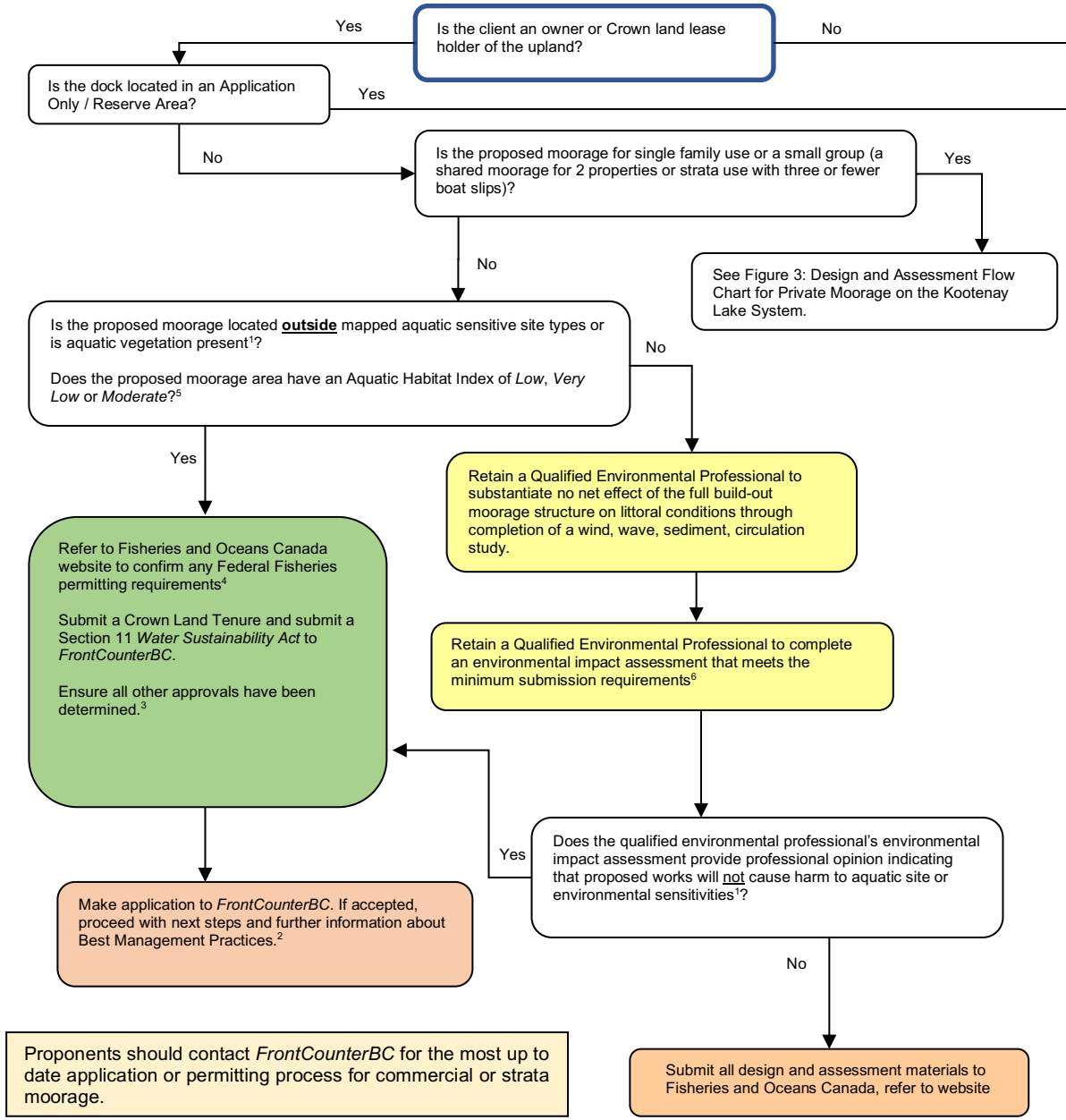
Figure 3 – Design and Assessment Flow Chart for New Private Moorage on Kootenay Lake



1 Known site sensitivities are located on maps. Aquatic Site sensitivities include known or potential shore spawning kokanee, identified sturgeon habitat, or potential high value juvenile rearing areas.

Proponents should contact *FrontCounterBC* for the most up to date application or permitting process for both general and specific permissions.

Figure 4 – Design and Assessment Flow Chart for Commercial and Strata Moorage on Kootenay Lake



[1] Known site sensitivities are located on maps. Aquatic Site sensitivities include known or potential shore spawning kokanee, identified sturgeon habitat, or potential high value juvenile rearing areas.

[2] Draft BMPs include the following walkout/dock dimensions and shoreline proximity standards (http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/regs_best_mgmt_practices_updated.pdf):

- Floating portions of the dock must be located offshore of the 6-meter depth contour at mean annual low water.
- Access to floating portions of the dock must be achieved by a single elevated fixed deck and ramp that must not exceed 1.5 meters in width. At a minimum, the base of the elevated fixed deck must be located at least 1 meter above the lake 1-in 5-year flood level. The remainder of the dock surface must not exceed 3 meters in width for any other portion of the dock.
- Supported dock structures must use widely spaced wooden or steel piles that are made of non-toxic materials (solid core pilings will not be allowed). Do not use pressure treated wood.
- Dock structures including any attached or detached boatlift mechanism must be greater than 5 meters from property lines. (Generally, property lines are projected perpendicular to shoreline.) If property is adjacent to a dedicated public beach access or park - a 6-meter offset is required. At least 10 m from any other moorage facility should be accommodated.
- The placement of the dock shall be undertaken in a manner that:
  - is consistent with the orientation of neighboring docks
  - is sensitive to views and other impacts on neighbors
  - is sensitive to increased boat traffic on neighbors
  - avoids impacts on access to existing docks and adjacent properties
- No roof or covered structures are to be placed on the dock or the boat lift.
- Boat Lifts:
  - No overhead boat lift mechanisms - utilize post style or facsimile that is supported from the bottom of the lake or to dock.
  - No roof or covered structures.
  - Must be located at least 5 meters from property line as lifts are considered as part of moorage structure.
- Follow Operational Best Practices detailed in the BC Ministry of Environment document "Best Management Practices for Small Boat Moorage on Lakes" (see http://www.env.gov.bc.ca/wld/documents/bmp/BMPSmallBoatMoorage_WorkingDraft.pdf)

[3] Refer to Fisheries and Oceans Canada website or *FrontCounterBC* for minimum submission requirements.

[4] Applications should be submitted to the Projects Near Water website for review by DFO.

[5] Aquatic Habitat Index Ratings are located on the maps included in this document.

6.0 REFERENCES

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7.0 ATTACHMENTS

7.1 Foreshore Inventory Mapping

The following maps are the result of the shoreline assessments done on Kootenay Lake that provide the needed information to use this Shoreline Guidance Document.