Brilliant Headpond
Shoreline Management Guidelines

Prepared for:

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Version 2

Updated September 25, 2018

VE52664.2017

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PREFACE

The Brilliant Headpond Shoreline Management Guidelines are intended to clarify and streamline land use decision-making processes between different regulatory agencies, proponents, and stakeholders as they relate to riparian, fish and fish habitat. These guidelines provide a visual description of the locations of sensitive habitats for fish and riparian wildlife in the Brilliant Headpond, highlighting the risk associated with various activities based on environmental values present in a given shoreline area. These guidelines outline the steps necessary for development activities to be considered for anyone who is planning to do work on Crown and/or private lands, noting that not all permitting requirements have been identified for every type of application. A flow chart outlines the decision-making process to be followed prior to proceeding with a proposed development. An activity risk and permitting table, intended to be used as a relatively quick reference tool, is also provided. It should be noted that while this document outlines risks associated with common development activities, it is not possible to identify all foreseeable risks and the services of Qualified Professionals may be required. In addition, permitting requirements associated with the proposed development are subject to change depending on the regulatory environment. A large proportion of the foreshore lands in the Brilliant Headpond are owned by Brilliant Power Corporation (BPC), and, as such no alterations or developments are permitted on these properties. The Foreshore properties not owned by BPC are subject to easements. These easements detail a release of any liability relating to the operations of the Brilliant Dam and Headpond. Daily headpond fluctuations relating to hydroelectric generation in the Brilliant Headpond may impact any permitted development in the foreshore area.

A Foreshore Inventory and Mapping (FIM) project was conducted on the Brilliant Headpond to describe baseline conditions present along the shoreline. The FIM project followed standard federal procedures wherein the entire shoreline was mapped, divided into a series of segments based on shoreline characteristics, and various fish, aquatic, wildlife and riparian features were inventoried and assessed. This methodology has been used to map the shorelines of lakes and riparian areas of rivers in British Columbia and elsewhere in Canada, and provides a standard basis for integrating biophysical information into land use guidance documents. Brilliant Headpond is operated as a run-of-river power generation system, and therefore has unique flow management considerations that influence the adjacent habitat and development potential. Information from this FIM procedure was then used to evaluate shoreline areas by applying an Aquatic Habitat Index (AHI) to rank the relative value of each shoreline area as Very Low, Low, Moderate, High, and Very High. The AHI ranking, along with maps developed during FIM, identify unique shoreline features and sensitive habitat areas. Very High and High value shorelines are the most vulnerable to habitat degradation due to the presence of sensitive riparian, fish and fish habitat features. Moderate, Low, and Very Low value shorelines may also contain these sensitive habitats (e.g. wetlands and tributary mouths) within select areas, but the majority of these shorelines may have already been degraded by development.

These guidelines are intended to protect high value aquatic habitats along shoreline areas. Those high value shorelines may require more detailed project design and assessment information to support regulatory reviews during project permitting. In contrast, low risk activities proposed in shoreline areas with lower value aquatic habitat, may require less detailed assessment information for the regulatory permitting review process. A key outcome of this guidance document is to provide development guidelines and best management practices that

can be used to maintain existing riparian, fish and fish habitat values and minimize development impacts.

This report only provides direction relating to fish, wildlife and riparian shoreline habitat values, and as such, does not consider other development factors. For example, these guidelines do not address development risks to non-aquatic species, such as reptiles or upland terrestrial ecosystems. These guidelines do not include the process for approvals related to archaeological sites nor do they include First Nations engagement requirements. Archaeological sites are protected from disturbances and alterations that would negatively affect their value or "significance" under the *Heritage Conservation Act*. It is the responsibility of the proponent to follow proper procedures to evaluate archaeological risk, engaging the services of a qualified professional to assist with project evaluation, application and monitoring, if necessary. The ultimate responsibility for consultation and engagement with First Nations is held by Local, Provincial and Federal governments, however, these governments may delegate some aspects to private landowners and developers during the application process. Certain applications may require other agency approvals and it is the responsibility of the proponent to ensure that all applicable permits or applications have been submitted and approved prior to proceeding with any works.

ACKNOWLEDGEMENTS

The following people are gratefully acknowledged for assistance and information contributions during this study:

Brilliant Headpond Stewardship Collaborative

Andy Davidoff, Area I Director, Regional District of Central Kootenay
Walter Popoff, Area H Director, Regional District of Central Kootenay
Meeri Durand, Planning Manager, Regional District of Central Kootenay
Cal Lorenz, area resident, Shoreacres
Kelly Poznikoff, area resident, Shoreacres
Peter Wood, area resident, South Slocan
Kenton Andreashuk, Stewardship & Protection, Canadian Columbia River Inter-Tribal Fisheries Commission, Ktunaxa Nation Council
Nicole Kapell, Environment and Archaeology Stewardship Manager, Ktunaxa Nation Council
Michael Zimmer, Columbia Region – Fisheries Team Lead, Okanagan Nation Alliance
David DeRosa, Major Projects Biologist, Okanagan Nation Alliance
Evan Smith, Fish Technician, Okanagan Nation Alliance
Blair Weston, Manager, Community and Aboriginal Relations, FortisBC
Audrey Repin, Indigenous and Community Relations Lead, Columbia Power Corporation
Kat Hartwig, Executive Director, Living Lakes Canada
Heather Leschied, Operations Director, Living Lakes Canada
Bruce MacDonald, Fish Habitat Biologist, Living Lakes Canada

Funding and In-kind contributions for this project were provided by:

Regional District of Central Kootenay
Columbia Basin Trust
FortisBC
Columbia Power Corporation
Living Lakes Canada
Members of the Brilliant Headpond Stewardship Collaborative

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1.0 INTRODUCTION

The Brilliant Headpond is situated in the Regional District of Central Kootenay (RDCK) Electoral Area I. Road access is available at various points along the west bank but is limited along the east bank, restricted to areas around the unincorporated community of Glade. Glade is accessed by ferry and is the only community on the east shoreline of the reservoir. Residential development along the foreshore is more common on the west side of the reservoir and includes the communities of South Slocan, Shoreacres, Tarrys, Thrums, RDCK Area I, RDCK Area H, and the City of Nelson that are directly accessed from Highway 3A. A railway parallels the east bank and is directly adjacent to the Headpond between Thrums and the Brilliant Dam navigational buoys. The Brilliant Headpond is bounded by hydroelectric dams at the upstream and downstream extent and experiences daily water level fluctuations due to dam operations. A large proportion of the foreshore lands in the Brilliant Headpond are owned by Brilliant Power Corporation (BPC), The Foreshore properties not owned by BPC are subject to easements. These easements detail a release of liability relating to the operations of the Brilliant Dam and Headpond. Throughout the region, increasing development pressure along lake shorelines has led to habitat degradation, recreational use conflict and water quality impacts. These issues have prompted Federal and Provincial regulatory agencies to initiate projects to improve our understanding of the current state of our watersheds and provide processes to manage them in a way that ensures long term sustainability.

Living Lakes Canada, on behalf of the Brilliant Headpond Stewardship Initiative, organized the preparation of these Brilliant Headpond Shoreline Management Guidelines following the completion of a Foreshore Inventory and Mapping (FIM) project and Aquatic Habitat Index (AHI) evaluation. Maps were produced to identify shoreline sensitivities and the relative aquatic habitat value of mapped shoreline areas. These maps are provided in Attachment A.

The Kootenay Lake Shoreline Management Guidelines, Version 7 dated January 16, 2018 (Schleppe 2018) was used as a template to prepare this document as it is the most recently completed Shoreline Guidance Document, and includes updated federal and provincial regulations. Shoreline guidance documents have also been prepared for other lakes in the Kootenay region (e.g., Windermere, Moyie, Koocanusa and Slocan) and were also reviewed during the development of this document. All shoreline guidance documents referenced have previously been reviewed by Federal Provincial and local regulatory agencies, First Nations and other stakeholders. The wording of this Brilliant Headpond guidance document, activity risk matrix and flow charts remain primarily unchanged from the Kootenay Lake Shorelines Management Guidelines document and recognition for the development of these guidelines should go to the original authors (Schleppe 2018) as well as those involved in planning processes and documents for other B.C. lakes.

2.0 BACKGROUND INFORMATION

2.1 Common Development Activities

The following authorized and/or unauthorized development activities were identified using FIM survey data for the Brilliant Headpond:

- Aquatic vegetation removal;
- Boat launches;
- Construction of pile-supported structures below the natural boundary;
- Docks;
- Erosion control and shoreline sediment structures (e.g. groynes and retaining walls);
- Land development (e.g., roads, railways, housing etc.) within 30 m of the natural boundary;
- Mooring buoys; and,
- Substrate modification to create beaches;

2.2 Development Design to Avoid, Minimize and Compensate for Impacts

The following are steps to avoid and minimize development impacts.

2.2.1 Avoidance of Impacts

The general principles of shoreline development are to design such that there is "No Net Loss" in habitats present. These principles are supported by the Provincial policy for Environmental Mitigation (http://www.env.gov.bc.ca/emop/). In general, this principle is 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) restoration on site of environmental values and associated components, and,

(4) offsetting of impacts to environmental values for residual impacts that cannot be minimized.

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 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, 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.

2.2.2 Minimization of 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.

2.2.3 Compensation for Residual Impacts

Compensation is the last resort in the mitigation process and an indication of failure in the two 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.

After reviewing the project proposal and the potential impacts or risk to identified values, Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD), Fisheries & Oceans Canada (DFO), First Nations and/or the Regional District of Central Kootenay (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.

Habitat compensation involves replacing the loss of fish habitat with newly created habitat or improving the productive capacity of some other natural habitat (i.e., offsetting for impacts). 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 (i.e., 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 have foreseeable impact will be authorized by either the Province (MFLNRORD) under the *Water Sustainability Act*, or by Federal agencies (DFO) under the *Fisheries Act*. However, it is possible to obtain regulatory authorization if acceptable offsetting measures are developed and agreed upon.

All proponents are advised that data collected under the FIM process is available for use and proponents are encouraged to include this information in their planning for proposed activities. The data collected under the FIM process does not remove the requirement for proponents to retain a Qualified Professional (QP) to help them develop plans for their

activities because it does not include site-specific considerations due to the scale of the assessment.

2.3 Summary of Applicable Legislation

The following provides a brief summary of the current legislation that may be applicable to a proponent project as of April 17, 2018. 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 November 2016. The Project Near Water website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) 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 and proposed changes were introduced on February 6, 2018. The proposed changes are currently being reviewed before Parliament. 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

Regulations:

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

Provincial[1]:

- Water Sustainability Act

[1] Note that the Riparian Areas Regulation (RAR) does not apply to RDCK (Government of BC 2018).

- Fish Protection Act
- Wildlife Act
- Environmental Management Act
- Land Act
- Weed Control Act
- Local Government Act
- Heritage Conservation Act
- Species At Risk Act

Regional District of Central Kootenay:

- Applicable Local Land Use Bylaws (these are changing soon)
- Development Permit Areas (DPAs)
- Subdivision Servicing Bylaw
- Floodplain Management Bylaw
- Building Bylaw

2.4 Summary of Applicable Best Management Practices

The following table provides a summary of potentially applicable best management practices, noting that other best management practices may exist and be applicable to any given project (Table 1**Error! Reference source not found.**). Further, many of the documents are dated, and may have been revised from the time of this publication. FrontCounter BC or a QP should be contacted for more information on recent Provincial BMP's that may be specifically applicable to Brilliant Headpond. For Federal documents, the Projects Near Water website by Fisheries and Oceans Canada can also be referred to.

Table 1: Best Management Plans (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	Regionally Sensitive Species; Terrestrial, Aquatic and Riparian	This document is applicable to works involving any form of land development.	https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices/develop-with-care
Guidelines for Amphibian and Reptile Conservation during Urban and Rural Land Development in British Columbia	Amphibians and Reptiles	This BMP is applicable to ecosystems comprised of aquatic habitats, rocky outcrops and forested areas.	https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices/develop-with-care
Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia	Raptors	This BMP is applicable to terrestrial ecosystems comprised of mature coniferous and mixed woodlands.	https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices/develop-with-care
Best Management Practices Guidelines for Bats during Urban and Rural Land Development in British Columbia in BC	Bats	This BMP is applicable to terrestrial ecosystems comprised of arid grassland, Ponderosa Pine - Douglas-fir forests, 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	Aquatic	This BMP is applicable for works undertaken instream.	http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf

Provincial BMPs	Target Species Group and/or Habitat Feature	Applicability	Web link
Best Management Practices for Lakeshore Stabilization	Aquatic and Riparian	This BMP is applicable to areas with steep slopes that are accompanied by seepage, which increases the risk of releasing sediment and non-point source pollution.	http://www.env.gov.bc.ca/wld/documents/bmp/BMPLakeshoreStabilization_WorkingDraft.pdf
Land Development Guidelines for the Protection of Aquatic Habitat	Aquatic	This BMP is applicable to works undertaken in areas adjacent to riparian features.	http://www.dfo-mpo.gc.ca/Library/165353.pdf
Best Management Practices for Hazard Tree and Non-Hazard Tree Limbing, Topping or Removal	Terrestrial and Aquatic	This BMP is applicable for works involving tree removal.	http://www.env.gov.bc.ca/wld/documents/bmp/BMPTreeRemoval_WorkingDraft.pdf
Best Management Practices for Boat Launch Construction & Maintenance on Lakes	Terrestrial and Aquatic	**Okanagan	http://www.env.gov.bc.ca/okanagan/documents/BMPBoat_LaunchDraft.pdf
Best Management Practices for Small Boat Moorage on Lakes	Terrestrial and Aquatic	**Okanagan	http://www.env.gov.bc.ca/okanagan/documents/BMPSmallBoatMoorage_WorkingDraft.pdf
Best Management Practices for Installation and Maintenance of Water Line Intakes	Aquatic	**Okanagan	http://www.env.gov.bc.ca/okanagan/documents/BMPIntakes_WorkingDraft.pdf
Beaver Management Guidelines in British Columbia	Aquatic	This BMP is applicable to areas that support beaver communities.	http://www.env.gov.bc.ca/van-island/pa/pdf/beaver_mgt.pdf

Provincial BMPs	Target Species Group and/or Habitat Feature	Applicability	Web link
Beaver Management Guidelines	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	Terrestrial	This criteria document is applicable to works involving tree removal and replacement.	http://www.env.gov.bc.ca/wld/documents/bmp/treereplcrit.pdf
Terms and Conditions for Changes In and About a Stream Specified by Ministry of Environment (MOE) Habitat Officers, Kootenay Region (Region 4)	Aquatic	This BMP is applicable to works involving changes in and about a stream.	http://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/terms_conditions_kootenays.pdf
Fish Habitat Rehabilitation Procedures	Aquatic	This document is applicable to works with an erosion and sediment risk near water.	http://www.env.gov.bc.ca/wld/documents/wrp/wrtc_9.pdf
Wetland Ways; Chapter Ten Land Development	Aquatic, Riparian and Terrestrial	This document is applicable to works near wetlands.	https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/standards-guidelines/best-management-practices/wetland_ways_ch_10_development.pdf

3.0 SHORELINE MANAGEMENT GUIDELINES OVERVIEW

The Brilliant Headpond Shoreline Management Guidelines are intended to clarify and streamline land use decision making processes between different regulatory agencies, proponents, and stakeholders as they relate to riparian, fish and fish habitat. These guidelines provide a visual description of the locations of sensitive habitats for fish and riparian wildlife in the Brilliant Headpond, highlighting the risk associated with various activities based on environmental values present in a given shoreline area. These guidelines only specify risks associated with aquatic and riparian environmental values; they do not detail other risks, such as: the potential to disturb and encounter archaeological sites, sensitive terrestrial habitat or the risks associated with the erodibility of the foreshore area. These guidelines outline the steps necessary for development activities to be considered for anyone who is planning to do work on Crown and/or private lands, noting that not all permitting requirements have been identified for every type of application. The following steps are intended to help direct applicants and reviewers through these guidelines:

Step 1 – Identify land ownership
(see Section 3.1)

Step 2 – Identify the AHI ranking at proposed project location
(see Section 3.2 and Attachment A: Maps)

Step 3 – Use the Activity Risk Matrix to determine project risk rating
(see Section 3.3)

Step 4 – Use Flow Charts to determine the project design, assessment and review process
(see Section 3.4 and Attachment B: Flow Charts)

Step 5 – Review additional project considerations
(see Section 3.5)

Further details are provided for each of these steps below.

3.1 Step 1 – Identify Foreshore Land Ownership

The first step is to identify foreshore land ownership. proportion of the foreshore lands in the Brilliant Headpond are owned by BPC, affecting the types of foreshore activities that can take place. Upland owners are encouraged to review their land title, BC Land Title and Survey and Parcel Map BC, paying special attention to any easements placed on the title.

3.2 Step 2 – Identify the AHI Ranking at Proposed Project Location

Consult the maps in Attachment A to determine the AHI ranking at the proposed project location. The AHI ranking for a segment describes the current aquatic value of a shoreline segment relative to other shoreline segments in the Brilliant Headpond. The AHI uses data collected during the FIM survey, supplemented with other fish, aquatic and wildlife information, to evaluate the aquatic value of a segment based on biophysical characteristics, riparian condition, key fish and aquatic habitat (e.g. migration corridors), wildlife features (e.g. raptor nests) and existing shoreline modifications (e.g. retaining walls). The resulting AHI rankings of relative habitat value include Very Low, Low, Moderate, High, and Very High. However, all lakeshore areas provide fish habitat and although a segment may be ranked as Very Low or Low, fish habitat is still present. In addition, Zones of Sensitivity (ZOS) (wetlands, tributary mouths and wildlife habitat features) may be present and warrant consideration during any land use or shoreline modification proposal, regardless of AHI ranking. The key assumption of using this system to evaluate risk is that the vulnerability of a shoreline segment to land use changes corresponds directly with its aquatic habitat value or the presence of ZOS.

3.3 Step 3 – Determine Project Risk Rating

The following Activity Risk Matrix summarizes environmental risks for different activities, as they relate to shoreline habitat values on Brilliant Headpond (Table 2). In cases where multiple activities are proposed, the combined risk to fish habitat may increase, and proponents should default to the highest risk identified and retain a QP to determine whether the overall risk to fish habitat has increased. For development activities not listed in Table 2, proponents are recommended to contact FrontCounter BC for advice.

ble 2: Activity Risk Matrix. Risks are classified by designation Very High (VH), High (H), Moderate (M), and Low (L). Habitats are ranked by the Aquatic Habitat Index (AHI) as Very High (Red), High (Orange), Moderate (Yellow), Low (Blue) and Very Low (Grey). Zones of Sensitivity are included under the AHI Ranking of Very High (Red) regardless of the segment AHI Ranking. This table was incorporated from Schleppe (2018).

Activity*	Crown Land Tenure Required	Section 11 Water Sustainabiliy Act	Fisheries Act Review Recommended	Risk Assessment				
				AHI Ranking Very High	AHI Ranking High	AHI Ranking Moderate	AHI Ranking Low	AHI Ranking Very Low
uatic Vegetation Removal								
noving native aquatic vegetation by hand or chanical cutting for swimming areas and private ich access	N	Y	Refer to Website	VH	VH	VH	VH	H
noving non-native/invasive aquatic begetation by d or mechanical cutting for swimming areas and ate beach access	N	Y	Refer to Website	VH	VH	H	M	L
dging, Infilling and Beach Creation								
dging (new proposals)	Maybe	Y	Y	VH	VH	VH	VH	VH
ntenance Dredging: dredging has occurred in last 10 rs, no temporary or permanent increase in footprint ow the NB**, dredged material deposited on land	Maybe	Y	Refer to Website, Likely N	VH	VH	VH	VH	VH
e infilling (e.g. extension of upland landscaping)	Y	Y	Refer to Website, Likely Y	VH	VH	VH	VH	VH
ich creation below the lake NB	Maybe	Y	Y	VH	VH	VH	VH	H
ich creation above the lake NB	Maybe	Maybe	Refer to Website, Likely N	**Refer to Landscaping in Land Development**				
nsition to Private Land from Crown Land								
lication to purchase crown land (crown grant)	Y	N	N	VH	H	M	L	L
sion Control, Foreshore Sediment Control, Foreshore Disturbance or Wave Control Structures				**Refer to Figure 2**				
v groyne construction or increase in existing footprint	**Not allowed**							
ntenance of existing groyne, no increase in existing tprint	Maybe	Y	N	**Refer to Forests, Lands and Natural Resource Operations**				
sion control (e.g. concrete, rip rap, vegetation, etc.)	Maybe	Y	Refer to Website	VH	VH	H	M	L
l breakwaters or boat basins	Y	Y	Refer to Website	VH	VH	H	H	M
ve control structures	Y	Y	Refer to Website	VH	VH	H	M	L
eshore sediment disturbance and removal of lakebed strate	N	Y	Refer to Website	VH	VH	H	M	L
t Launches								
nstruction of new hard surface boat launch or air/upgrade of existing hard surface boat launch out land tenure	Y	Y	Refer to Website	VH	VH	VH	H	H
grade/repair of existing hard surface boat launch with d tenure and within existing footprint	Maybe	Y	N	VH	H	H	M	M
grade/repair of existing hard surface boat launch with d tenure and increasing size of the existing allowable tprint	Y	Y	Y	VH	VH	H	M	M
nstruction of new boat rail launch or repair/upgrade of sting boat rail launch without land tenure	Y	Y	Refer to Website	VH	H	M	L	L
grade/repair of existing boat rail launch with land ure and within existing footprint	Maybe	Y	N	H	H	M	M	M
oys								
cement of up to 2 helical screw anchor mooring ys for non-commercial use. Refer also to Transport nada - Navigable Waters	N	Maybe	N	H	H	M	L	L
cement of up to 2 non-helical screw mooring buoys non-commercial use. Refer also to Transport Canada avigable Waters	N	Maybe	N	VH	H	H	M	L
cement mooring buoys for commercial use – refer to rina Activities.	Y	Maybe	N	**Refer to Transport Canada - Navigable Waters**				
cks / Boathouses / covered boat storage areas								
cks	Maybe - Refer to Dock Figure 3	Y	Refer to Website	**Refer to Figure 3**				
idential boathouses / covered boat storage idential)	**Not allowed**							
rinas - Commercial								
grade and new construction	Y	Y	Refer to Website, Likely Y	**Refer to Figure 4**				
ter Withdrawal, Use or Discharge								
terline - directional drilling (may require a Water ense)	N	Y	Refer to Website	H	H	M	M	L

The following risk rating descriptors were developed to clarify and streamline review processes for common Low, Moderate, High and Very High risk development activities that may impact fish and fish habitat but may lack existing or endorsed standards:

Low Risk Activities
• Pose low risk of harm to fish habitat. • Harm to fish habitat can usually be prevented if experienced contractors complete works following endorsed best management practices. • Supervision of works by a qualified environmental professional is recommended to ensure harm to fish habitat does not occur. • DFO review depends upon the proposed works and at minimum should follow endorsed best management practices referenced in activity-specific footnotes. • Project proponents are responsible for ensuring that they comply with fish habitat protection provisions of *Fisheries Act* section 35(1) (see http://laws.justice.gc.ca/en/F-14/index.html). • Refer to the DFO Projects Near Water website before starting your work and complete a submission of a Project Review Application Form is desired or needed. (see http://dev-public.rhq.pac.dfo-mpo.gc.ca/habitat/steps/praf/form-formulaire-eng.pdf). • Refer to Table 2 to determine if a Section 11 under the Water Sustainability Act may needed and submit any required documentation to Front Counter BC. FrontCounter BC can provide guidance to help determine what permits or approvals are necessary for an application. • Refer to Table 2 to determine if a Crown Land tenure is required. Indicated coding of Y (Yes), N (No) or Maybe, is only a preliminary guide; each application and the requirement is based upon the site specific situation. You must contact FrontCounter BC before proposing work. Staff will provide additional guidance and provide you with 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
• Pose moderate risk of harm to fish habitat. • Some works will require authorization under section 35(2) of the *Fisheries Act* to legally proceed. • Harm to fish or fish habitat can usually be prevented if appropriate relocation, redesign and mitigation measures are implemented. • Professional planning and assessment is required; costs to the proponent *may* be high. • Mitigation and compensation costs to the proponent *may* be high. • DFO review depends upon the proposed works and at minimum should follow endorsed best management practices referenced in activity-specific footnotes to **Error! Reference source not found.**. • Project proponents are responsible for ensuring that they comply with fish habitat

protection provisions of *Fisheries Act*. section 35(1) (see http://laws.justice.gc.ca/en/F-14/index.html).

- Refer to the DFO Projects Near Water website before starting your work and complete a submission if a Project Review Application Form is desired or needed. (see http://dev-public.rhq.pac.dfo-mpo.gc.ca/habitat/steps/praf/form-formulaire-eng.pdf).
- Refer to Table 2 to determine if a Section 11 under the Water Sustainability Act may be needed and submit any required documentation to Front Counter BC. Front Counter BC can provide guidance to help determine what permits or approvals are necessary for an application.
- Refer to Table 2 to determine if a Crown Land tenure is required. Indicated coding of Y (Yes), N (No) or Maybe, is only a preliminary guide; each application and the requirement is based upon the site specific situation. You must contact FrontCounter BC before proposing work. Staff will provide additional guidance and provide you with 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

- Pose high risk of harm to fish habitat.
- Most works will require authorization under section 35(2) of the *Fisheries Act* to legally proceed.
- Include significant challenges to prevention of harm through relocation, redesign and mitigation measures or to compensation for fish habitat losses that may occur.
- Professional planning and assessment is required; costs to the proponent *may* be high.
- Mitigation and compensation costs to the proponent *may* be high.
- DFO review depends upon the proposed works and at minimum should follow endorsed best management practices referenced in activity-specific footnotes to **Error! Reference source not found.**. It is advisable to submit a Project Review for Very High and High risk activities to avoid potential harm to fish or their habitats.
- Project proponents are responsible for ensuring that they comply with fish habitat protection provisions of *Fisheries Act*. section 35(1) (see http://laws.justice.gc.ca/en/F-14/index.html).
- Refer to the DFO Projects Near Water website before starting your work and complete a submission of a Project Review Application Form is desired or needed. (see http://dev-public.rhq.pac.dfo-mpo.gc.ca/habitat/steps/praf/form-formulaire-eng.pdf).
- Refer to Table 2 to determine if a Section 11 under the Water Sustainability Act may needed and submit any required documentation to Front Counter BC. Front Counter BC can provide guidance to help determine what permits or approvals are necessary for an application.
- Refer to Table 2 to determine if a Crown Land tenure is required. Indicated coding of Y (Yes), N (No) or Maybe, is only a preliminary guide; each application and the requirement is based upon the site specific situation. You must contact FrontCounter BC

High Risk Activities
before proposing work. Staff will provide additional guidance and provide you with 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
• Pose very high risk of harm to fish habitat. • Most works will require authorization under section 35(2) of the *Fisheries Act* to legally proceed. • Include significant challenges to prevention of harm through relocation, redesign and mitigation measures or to compensation for fish habitat losses that may occur. • Professional planning and assessment is required; costs to the proponent may be high. • Mitigation and compensation costs to the proponent may be high. • DFO review depends upon the proposed works and at minimum should follow endorsed best management practices referenced in activity-specific footnotes to **Error! Reference source not found.**. It is advisable to submit a Project Review for Very High and High risk activities to avoid potential harm to fish or their habitats. • Project proponents are responsible for ensuring that they comply with fish habitat protection provisions of *Fisheries Act*. section 35(1) (see http://laws.justice.gc.ca/en/F-14/index.html). • Refer to the DFO Projects Near Water website before starting your work and complete a submission of a Project Review Application Form is desired or needed. (see http://dev-public.rhq.pac.dfo-mpo.gc.ca/habitat/steps/praf/form-formulaire-eng.pdf). • Refer to Table 2 to determine if a Section 11 under the Water Sustainability Act may needed and submit any required documentation to Front Counter BC. Front Counter BC can provide guidance to help determine what permits or approvals are necessary for an application. • Refer to Table 2 to determine if a Crown Land tenure is required. Indicated coding of Y (Yes), N (No) or Maybe, is only a preliminary guide; each application and the requirement is based upon the site specific situation. You must contact FrontCounter BC before proposing work. Staff will provide additional guidance and provide you with 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.

3.4 Step 4 – Determine Project Design, Review & Assessment Process

Consult Attachment B to determine design and assessment requirements for the proposed development. These flow charts provide the design, assessment and review process for

activities listed in the Activity Risk Matrix (Table 2). These include a general Decision Making Flow Chart that can be used for most development activities as well as additional flow charts outlining the process for more complex activities including lakeshore erosion control, new private moorage and commercial or strata moorage (Attachment B, Figures 1-4).

3.5 Step 5 – Additional Project Considerations

For works located in shoreline segments with identified ZOS (i.e., wetland areas, tributary mouth/fan, and wildlife observations; Attachment A) and/or having an AHI rank of Moderate, High or Very High, proponents will likely require the services of a QP to complete and submit documentation to FrontCounter BC and possibly DFO. Similarly, sites with archeological potential or of cultural importance may require QPs to assist with your application. The necessity to engage a QP increases as AHI rankings, the presence of environmental ZOS or a cultural or archeological potential increases. Information contained in these guidelines will assist proponents and Qualified Professionals in their work, but additional studies may be required to address site-specific issues and limitations of currently available information.

3.5.1 New and Existing Works

The Brilliant Headpond Foreshore Inventory and Mapping project identified impacts from existing structures along the shoreline of the waterbody. In carrying out this survey, it was identified that some works may have proceeded without appropriate permits or approvals in place and that these activities were at times not compliant with standard best management practices. It is suggested that land owner's first determine if the existing works are on their land, BPC land or on Crown Land, and if they are located in an Application Only Area / Reserve Area established under the *Land Act*. Depending on the situation, the proponent should then determine if the works were authorized by the land owner and appropriate authority or not. If no authorization was granted, the proponent must seek approval from the land owner or appropriate authority before proceeding with a new project. BPC will not permit any new foreshore development on BPC land, and any existing unauthorized works on BPC land may be subject to removal. If you have an existing dock on BPC property you must contact Columbia Power in order to obtain a sign warning people that they use the dock at their own risk. This sign must be clearly visible and securely attached. Approval for new and existing structures on private property may or may not be granted depending on the situation. In keeping with standard BMP's, proponents should expect to address existing infrastructure and current best management practices as part of their application by upgrading existing works as part of an application process. Existing infrastructure should be improved to meet current best management practices or design standards as part of mitigation planning for all applications. Further, including other mitigation practices such as landscape restoration (e.g., planting native riparian vegetation), improving historic substrate modification (e.g., removal or mitigation of existing retaining walls and other habitat improvements should all be considered during development of proposals by proponents and qualified environmental professionals. In addressing these issues, it is expected that applications can be reviewed more effectively.

Proponents interested in proposing new works must ensure that they make the appropriate application and seek the necessary approvals from Federal, Provincial and Local

government. Commencing work without approval is considered to be in trespass and may be subject to enforcement actions by the respective agencies. Contact FrontCounter BC and the Regional District of Central Kootenay for information pertaining to your proposal. Alternatively, retain the services of Qualified Professionals to do this work on your behalf.

3.5.2 Requirements of Other Agencies

The guidelines presented in this document are best applied during the initial stages of development planning. Proposed works may be subject to other requirements such as local government zoning or permitting, Water Sustainability Act approvals or notifications (many are noted herein, 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.

4.0 REFERENCES

Amec Foster Wheeler. 2018. Brilliant Headpond Foreshore Inventory and Mapping Report. Report Prepared for Living Lakes Canada, Nelson, BC. 30 pp. + 5 app.

Government of British Columbia. 2018. Riparian Areas Regulation. Citizen Resources. https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/riparian-areas-regulation/citizen-resources. Accessed 17 April 2018.

Schleppe, J. 2018. Kootenay Lake Shoreline Management Guidelines, A Living Document, Version 7, January 16, 2018. Prepared for Kootenay Lake Partnership. Prepared by Ktunaxa Nation Council, Regional District of Central Kootenay, Ministry of Forests, Lands and Natural Resource Operations, Ecoscape Environmental Consultants Ltd., Tipi Mountain Eco-Cultural Services Ltd., The Firelight Group Ltd., and Wayne Choquette, Archaeologist. 39 p + 1 attachment.

Brilliant Headpond Shoreline Sensitivity Maps

Attachment A

Flow Charts

Attachment B