



Committee Report

Date of Report: 09/28/2022
Date & Type of Meeting: 10/12/2022, Rural Affairs Committee
Author: Eileen Senyk, Planner
Subject: SITE SPECIFIC EXEMPTION TO THE FLOODPLAIN MANAGEMENT BYLAW
File: F2202J - Lodge
Electoral Area/Municipality J

SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is for the Rural Affairs Committee and Regional Board to consider an application for a Site Specific Exemption to Regional District of Central Kootenay Floodplain Management Bylaw No. 2080, 2009, in Electoral Area 'J'.

The applicant seeks relief from the Flood Construction Level specified for the Lower Arrow Reservoir, which is 443.5 metres Geodetic Survey of Canada (GSC), in order to build 1.0 m lower at 442.5 metres GSC. Staff recommend that the Board approve the site-specific exemption to the Floodplain Management Bylaw.

SECTION 2: BACKGROUND/ANALYSIS

GENERAL INFORMATION

Property Owner: Jeremy Lodge

Property Location: 5386 Broadwater Road, Electoral Area 'J'

Legal Description: STRATA LOT 3 DISTRICT LOT 4599 KOOTENAY DISTRICT STRATA PLAN EPS370 TOGETHER WITH AN INTEREST IN THE COMMON PROPERTY IN PROPORTION TO THE UNIT ENTITLEMENT OF THE STRATA LOT AS SHOWN ON FORM V (PID 028-683-625)

Property Size: 0.15 hectares

SURROUNDING LAND USES

North: Rural Residential (R3)

West: Suburban Residential (R1)

East: Suburban Residential (R1)

South: Open Space (OS) – Arrow Reservoir

Background and Site Context

The subject property is located between the community of Robson and Syringa Provincial Park in Electoral Area 'J'. It is part of Strata Plan EPS 370, a four lot bare land strata. The strata properties are serviced by community water and a community sewer system. There is an easement between Broadwater Road and the northern lot

line on the subject property where the utilities are located. The property is currently vacant. It slopes gently toward the Lower Arrow Reservoir.

The applicant is requesting consideration of a site specific relaxation to the Flood Construction Level (FCL) requirements established under RDCK Floodplain Management Bylaw No. 2080 from 443.5m GSC to 442.5m GSC as established by BC Hydro as a safe-line under SRW XH7876 in order to construct a single family dwelling. The applicant has submitted supporting documentation prepared by a qualified geotechnical engineer in support of this request.



Figure 1: Overview Map



Figure 2: Building Site



Figure 3: Building Site with Reservoir visible in background

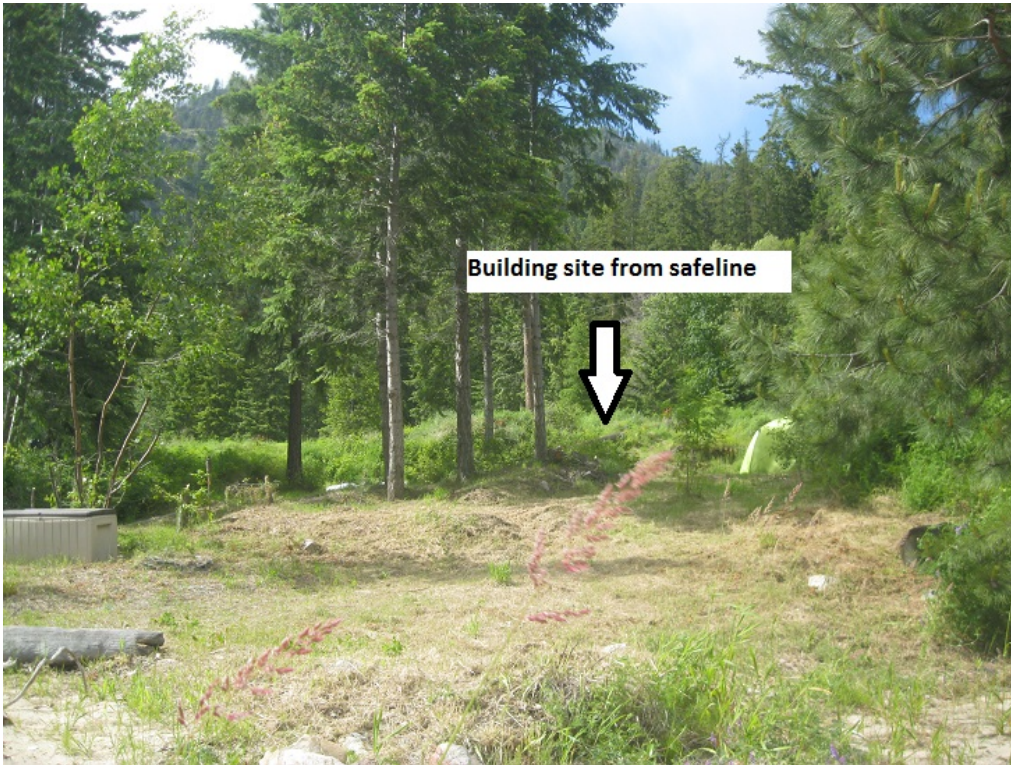


Figure 4: Building Site from Reservoir

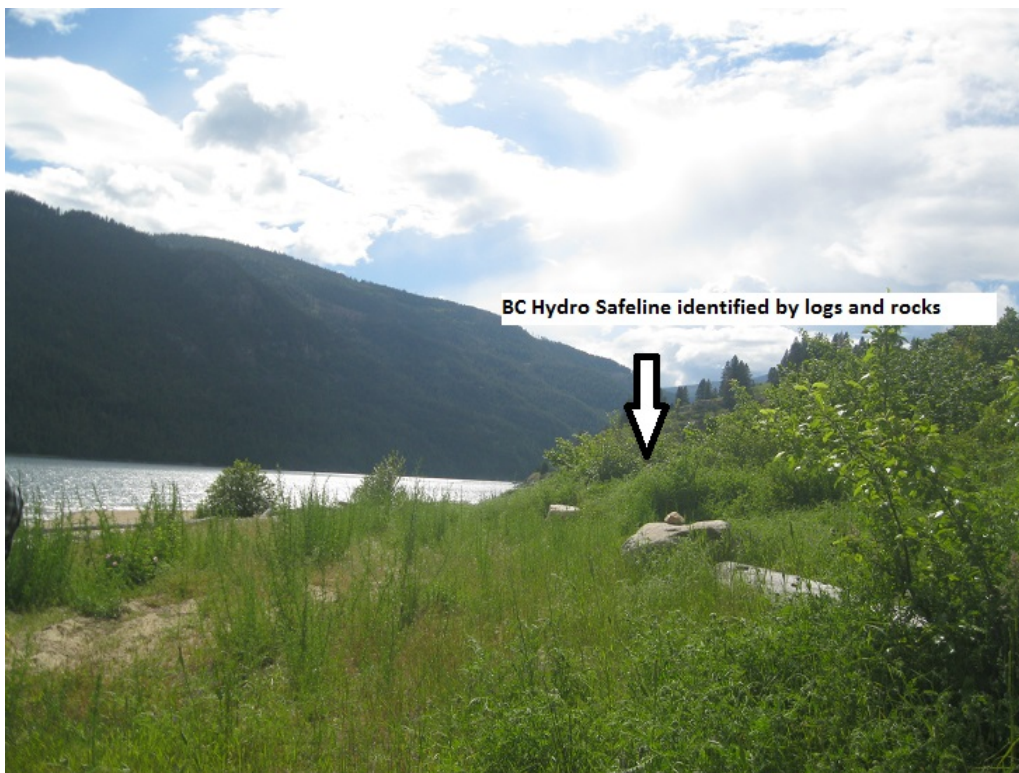


Figure 5: BC Hydro Safeline

Legislative Framework and Applicable Policy

Pursuant to Section 524 of the *Local Government Act*, a local government may exempt a person from the application of a floodplain bylaw in relation to a specific building if the local government considers it advisable and either:

- a. Considers that the exemption is consistent with the Provincial Guidelines; or
- b. Has received a report that the land may be used safely for the use intended where such a report is certified by a person who is a professional engineer or geoscientist and experienced in geotechnical engineering.

The Board adopted 'Terms of Reference for Professional Engineers/Geoscientists undertaking Geotechnical Reports/Flood Hazard Assessment Reports' to outline basic information that should be included in such reports.

The **Provincial Guidelines** or the Flood Hazard Area Land Use Management Guidelines for landowner requests for modification of bylaws provides the following guidance:

Flood Construction Level:

For smaller reservoirs, the FCL is either an elevation of 1.5 metres above the crest of the spillway or is 0.6 metres above the crest of the dam, whichever is greater. For larger reservoirs, reservoir specific FCLs are established.

The Arrow Lakes reservoir is a large reservoir. BC Hydro operates the reservoir and has established a 'Safeline' at the 440.7 metre contour interval. The 'reservoir specific' FCL is 443.5 metres elevation (GSC datum). A 'Safeline' is defined as the boundary beyond which land adjacent to reservoir will not regress due to progressive erosion cause by progressive reservoir action.

The RDCK adopted Floodplain Management Bylaw No. 2080 in 2009. This bylaw specifies that the FCL on the Arrow Reservoir is 443.5 metres elevation (GSC datum) and where more than one FCL is applicable, the higher elevation shall be the specified FCL. RDCK Floodplain Management Bylaw No. 2080 also specifies that the floodplain setback shall be above the the safe line for properties with a covenant and reference plan and shall be 30 metres from the 440.70 metre contour interval for properties without a covenant and reference plan. In the case the property has a covenant and reference plan specifying that the floodplain setback shall be 7.5 metres from the BC Hydro safeline.

Kootenay-Columbia Rivers Official Community Plan Bylaw No. 1157, 1996

2.2 Environmental

2.2.1 To preserve natural values.

2.2.2 To protect environmentally sensitive lands such as steep slopes, floodplains, watersheds and soils subject to erosion from land uses having major environmental impacts.

2.2.3 To protect all watersheds within the Plan Area.

2.2.4 To provide for the protection and enhancement of buildings and sites of historical and archaeological value.

SECTION 3: DETAILED ANALYSIS

3.1 Financial Considerations – Cost and Resource Allocations:

Included in Financial Plan: Yes No Financial Plan Amendment: Yes No
Debt Bylaw Required: Yes No Public/Gov't Approvals Required: Yes No

The application fee was paid in full pursuant to RDCK Planning Fees and Procedures Bylaw No. 2457, 2015.

3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

Section 524 of the Local Government Act (LGA) provides the authority for local governments to grant exemptions from the requirements of a Floodplain Management Bylaw. The applicant has submitted a report that meets the RDCK's Terms of Reference for Geotechnical Reports in support of the application. The reports states that the land may be used safely for the use intended and is certified by a person who is a professional geotechnical engineer and therefore satisfies the requirements of Section 524 of the LGA.

Electoral Area 'J' does not have a requirement for Watercourse, or Environmentally Sensitive Watercourse Development Permits.

3.3 Environmental Considerations

The Ministry of Forests, Lands, Natural Resources and Rural Development responded to the referral with a recommendation that an environmental assessment be conducted by a qualified professional prior to construction and that development within 30m of the riparian area be avoided. Given the limited area available between the BC Hydro Safeline and the setback from Broadwater road, there is no opportunity to develop outside of the riparian area. Electoral Area 'J' does not have requirement for Environmentally Sensitive Development Permit Areas.

3.4 Social Considerations:

There is no public benefit associated with the application.

3.5 Economic Considerations:

None anticipated

3.6 Communication Considerations:

The application was referred to internal RDCK departments, and other relevant government agencies. The following response was received:

Interior Health Authority – Team Leader Healthy Community Development

Given the connection of this property to community water and sewer, our review has been completed and there are no health impacts associated with this proposal have been identified. As such, our interests are unaffected by this proposal.

Ministry of Forests, Lands, Natural Resources and Rural Development

It is recommended that the proponent provide an environmental assessment conducted by a qualified professional, ideally between April and August. Development activities within a 30 m setback of a riparian area should be avoided.

This project should not create significant adverse environmental impacts if the proponent adopts mitigation strategies identified in the previously recommended environmental assessment, follows all of the applicable regulatory acts, implements measures to prevent introduction and/or reduce the spread or establishment of invasive plants on site, and adequately secures wildlife attractants.

Habitat Concern	Details
Tree Removal	See Section 34 of the <i>Wildlife Act</i> regarding tree removal. Remove trees outside of the sensitive nesting period (generally April to August), and check for existing or active nests prior to tree removal. Avoid the removal of large diameter trees (dbh > 30 cm: live and dead), especially deciduous, and that are actively used by wildlife (e.g. contains visible nests and tree cavities).
Migratory Bird Window	If works will occur within the breeding bird window (generally April 15 to August 15) the applicant should be aware of requirements under the Migratory Bird Convention Act for addressing incidental take. More information can be found at https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds.html
Aquatic Habitat	Any works within or adjacent to a stream are subject to the Provincial Water Sustainability Act. Please review the Kootenay Region’s Terms and Conditions for Instream works and timing windows available through the Kootenay Boundary Region drop down menu at: https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-licensing-rights/working-around-water/regional-terms-conditions-timing-windows to ensure that you can abide by these guidelines.
Human-wildlife conflict	<p>The proponent should ensure appropriate security measures for wildlife attractants (ie. garbage, compost, gardens, pet food etc.) to avoid wildlife habituation.</p> <p>The BC <i>Wildlife Act</i> states that: (1) A person must not (a) intentionally feed or attempt to feed dangerous wildlife or, (b) provide, leave or place an attractant in, on or about any land or premises with the intent of attracting dangerous wildlife.</p>
Invasive Species	<p>To support ongoing treatment efforts in the vicinity, an invasive plant management strategy is necessary throughout activities and reclamation. Practices should prevent introduction and reduce spread/establishment of invasive plants on site. To control invasive plants:</p> <ul style="list-style-type: none"> • Treat invasive plants prior to any activities (preferably using a qualified professional).

	<ul style="list-style-type: none"> • Ensure that equipment brought onto site is free of soil and plant material to reduce the possibility of invasive plant species spread/establishment. <p>The proponent should maintain records of herbicide treatments, and should report invasive plants using the Report-A-Weed program (https://www.reportaweedbc.ca/)</p> <p>The primary risk of concern from the proposed activities is introduction and spread of invasive plants. Invasive plants are typically introduced to British Columbia through human activities. These invasive plants lack natural predators and pathogens that would otherwise keep their populations in check. Invasive plants often establish themselves in soils disturbed from development of roads, utility lines, trails, commercial recreation sites, agriculture, etc. Once established, invasive plants have a tremendous capacity to invade adjacent, undisturbed natural plant communities displace wildlife and disrupt natural ecosystem functions.</p>
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3.7 Staffing/Departmental Workplace Considerations:

Should the Board approve the site-specific exemption, staff will draft a restrictive covenant.

3.8 Board Strategic Plan/Priorities Considerations:

Not applicable.

SECTION 4: OPTIONS

Planning Discussion

The subject property has had established base lines with regard to setback requirements and flood construction levels since the original parent parcel was created in 1995. At that time BC Hydro established a setback of 7.5 m from the 440.7 m contour interval and a flood construction level of 442.5 m GSC. These provisions were registered on the original title and approved by Provincial staff at the time, as being sufficient.

In 2004, the Regional District took over floodplain management responsibilities from the Province and established an FCL of 443.5 m GSC for the Lower Arrow Lake reservoir. The setback requirements were not amended and remain as stated within the original covenant documentation. Erosion continues to be experienced along the foreshore of the reservoir due to the high fluctuation of water levels and frequency of high water events as a result of maximizing power production and recreational values. Erosion is generally caused by wave action. A hazard assessment has been conducted for the property and has re-confirmed that an FCL of 442.5 GSC is appropriate. However, it is cited that even with a relaxation of the FCL, there will be requirements for structural fill or support structures to accommodate any development on Lot 3. Calculations were based on the full pool elevation of the Lower Arrow Lake reservoir.

The application is for a site specific exemption to the Flood Construction Level from 443.5m GSC to 442.5m GSC. A geotechnical report prepared by a qualified geotechnical engineer has been submitted in support of this request. The report provides information regarding the surficial geology, an erosion assessment, considers wave action, and provides recommendations for development. It meets the RDCK's Terms of Reference for Geotechnical Reports. For these reasons, staff recommend that the Board approve the site specific exemption.

Option 1

That the Board APPROVE a Site Specific Exemption to reduce the required Flood Construction Level for the Arrow Reservoir from 443.5 metres above mean sea level GSC datum, to 442.5 metres above mean sea level GSC datum in accordance with the Engineering Report prepared by Mike Walsh for property located at 5386 Broadwater Road and legally described as STRATA LOT 3 DISTRICT LOT 4599 KOOTENAY DISTRICT STRATA PLAN EPS370 TOGETHER WITH AN INTEREST IN THE COMMON PROPERTY IN PROPORTION TO THE UNIT ENTITLEMENT OF THE STRATA LOT AS SHOWN ON FORM V (PID 028-683-625) SUBJECT to registration by Jeremy Lodge of a restrictive covenant under Section 219 of the Land Title Act and Section 56 of the Community Charter in favour of the Regional District of Central Kootenay.

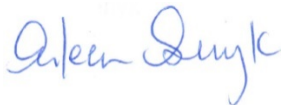
Option 2

That the Board NOT APPROVE a Site Specific Exemption to reduce the required Flood Construction Level for the Arrow Reservoir from 443.5 metres above mean sea level GSC datum, to 442.5 metres above mean sea level GSC datum in accordance with the Engineering Report prepared by Mike Walsh for property located at 5386 Broadwater Road and legally described as STRATA LOT 3 DISTRICT LOT 4599 KOOTENAY DISTRICT STRATA PLAN EPS370 TOGETHER WITH AN INTEREST IN THE COMMON PROPERTY IN PROPORTION TO THE UNIT ENTITLEMENT OF THE STRATA LOT AS SHOWN ON FORM V (PID 028-683-625).

SECTION 5: RECOMMENDATIONS

That the Board APPROVE a Site Specific Exemption to reduce the required Flood Construction Level for the Arrow Reservoir from 443.5 metres above mean sea level GSC datum, to 442.5 metres above mean sea level GSC datum in accordance with the Engineering Report prepared by Mike Walsh for property located at 5386 Broadwater Road and legally described as STRATA LOT 3 DISTRICT LOT 4599 KOOTENAY DISTRICT STRATA PLAN EPS370 TOGETHER WITH AN INTEREST IN THE COMMON PROPERTY IN PROPORTION TO THE UNIT ENTITLEMENT OF THE STRATA LOT AS SHOWN ON FORM V (PID 028-683-625) SUBJECT to registration by Jeremy Lodge of a restrictive covenant under Section 219 of the Land Title Act and Section 56 of the Community Charter in favour of the Regional District of Central Kootenay.

Respectfully submitted,



Eileen Senyk

CONCURRENCE

Planning Manager – Nelson Wight

General Manager Sustainability and Development Services – Sangita Sudan

Chief Administrative Officer – Stuart Horn

ATTACHMENTS:

Attachment A – Geotechnical Report

Attachment B – Instrument on Title XH007876



Skmana Creek Consulting
3038 Allegro Mews
Kelowna, BC, V1V 2K3
(250) 801-5325

Attention: Jeremy Lodge

September 13, 2022

**Re: 5386 Broadwater Road, Robson, BC
Lot 3, DL 4599, NEP89229
Site Specific Floodplain Exemption Assessment**

Our File: 2022-021

As per your request, an assessment was performed on the Flood Construction Level (FCL) and Setback provisions governing development on your lot at 5386 Broadwater Road in Robson, BC. This assessment was performed to determine the potential to establish alternate FCL and Setback requirements while still maintaining suitable requirements for the safe development of the property.

The property is located in the Allendale Creek subdivision along a peninsula on Broadwater Road approximately 16 kilometers west of Castlegar, BC (see Figure 1 & 2 in Appendix). The co-ordinate position of the area is UTM 11N, 506,250m E, 5,552,700m N.

The following are the results of our assessment and our recommendations.

History

During the establishment of the original Lot in 1994, from which the current property was subdivided, BC Hydro established an FCL of 442.50 metres elevation and a safeline (setback) requirement of 7.50 metres from the dam highwater level 440.70m (HWL). These provisions were registered on the original title with a reference plan (see Figure 3 - XH007876 in the Appendix).

Subsequent to the BC Hydro covenant, the Regional District of Central Kootenay (RDCK) established Floodplain Management Bylaw No. 2080 in 2009; which governs development along the shoreline of the Arrow Reservoir. This bylaw specifies that where Floodplain Mapping is not available, the FCL is to be 443.50 metres elevation and, where more than one FCL is applicable, the higher elevation shall be the specified FCL. Consequently, based on the provisions of this Bylaw, the governing FCL for the property is established to be 443.50 metres elevation.

The RDCK Bylaw further establishes the Floodplain Setback shall be above the safe line for properties with a covenant and reference plan and, shall be 30 metres from the 440.70 metre contour interval for properties without a covenant or reference plan. Consequently, based on the pre-existing covenant and reference plan established on title, the requirements governing the setback for development on the property is still maintained as 7.50 metres from the 440.70m elevation contour.

Field Review

To assess the characteristics of the shoreline and the lot, a field reconnaissance was performed. This investigation was performed on August 29th, 2022 by Mr. Mike Walsh, P.Eng. The work comprised of a field assessment of the following areas:

- A foot traverse of the Allendale Creek fan shoreline and;
- A foot traverse of the subject property.

During the field reconnaissance, the slopes, soil conditions, and the site/slope drainage were examined with respect to its present and future potential for erosion. Basic measurements were made using an inclinometer and GPS. Local soil and rock characteristics were determined by inspection of slope exposures, stream banks and road cuts.

Surficial Geology

No surficial geology maps are published for the general area; therefore, site information is based on observation and aerial image review. The surficial deposits along the shoreline and on the property are part of the Allendale Creek fan complex. The surficial soils observed over the lower portions of the fan are a consequence of alluvial deposition and comprise of material between 0.25mm and 25mm (rounded sands and gravels) with localized minor deposits of colluvium (sub-angular to angular cobbles and boulders). These deposits were generally noted to be dense to compact throughout the site.

The gradient of the terrain below the high water level (440.70m) has a consistent slope and varies across the width of the fan between 10 – 12.5%. The terrain above the HWL varies from 12% along the shore to 10% upslope.

Lot Description

The Lot is bordered on the northern boundary by Broadwater Road, to the east by Strata Lot 2, to the west by Strata Lot 4 and, to the south by the Lower Arrow Lake Reservoir.

The terrain along the shoreline directly above the high water level is essentially an extension of the beach gradient. The HWL was characterized by the deposition of wood debris and a transition from open sands to a vegetated surface with grasses, bushes and trees.

Exposures of surficial material along the shoreline and throughout the surface of the property indicated the subsurface soils are predominated by a sand and gravel matrix with a maximum particle size of 75mm with the occasional cobble up to 150mm.

Erosion Assessment

As the property is adjacent to the Arrow Reservoir, some shoreline erosion has been, and will continue to be experienced. As such, an erosion assessment was performed to establish the probable maximum extent of expected erosion as a consequence of wave action from the reservoir. To identify the extent of erosion, BC Hydro has developed the "Safeline" which is defined as the boundary beyond which land adjacent to reservoir will not regress due to progressive erosion caused by normal reservoir action.

As the predominant shoreline erosion is caused by wind-wave action, the assessment was performed using the methodologies developed by the US Army Corp of Engineers (1984).

To establish the maximum erosion as a consequence of wave action at the site, an estimate of the design maximum wind speed is required. The closest Environment Canada weather station is located at the Hugh Keenleyside Dam (ID #1141457) which is approximately 5.5 km from the property; making its historic data very applicable for assessment.

Based on the historic wind data, it was determined that the maximum winds essentially always prevail from the west, which is a consequence of the east-west orientation of the relatively steep and narrow mountain valley that the property and the dam reside in. However, as the shoreline along the property also tends to follow the east-west trend of the valley, the direction of the maximum wind would tend to develop waves that would strike the beach and property at an oblique angle, minimizing the erosional affects. Consequently, to develop a more conservative analysis, it was assumed that the shore-wave interaction occurs at a perpendicular orientation with the maximum sustained winds; causing the maximum erosional impacts.

Based on the site and wind data, the following information was utilized to perform the erosion assessment:

Wind speed = 69 km/h
Fetch length = 1850 m (WSW)
Lake depth = 12 m
Shoreline slope = 8H : 1V

Based on this information, the **wave setup** was determined to be 0.30m and the wave *runup* height was 1.0m; creating a **wave protection height** of approximately **1.30m** or, based on the wave action occurring during full pool of the reservoir, an elevation of 442.00m.

This wave height tends to be relatively conservative as a result of three factors:

1. The maximum wind speeds are experienced from a westerly direction but it was assumed for design purposes, the wave direction would be perpendicular to the beach; approximately from the south. This assumption is unlikely, and thus conservative, since the reservoir tends to be relatively narrow in this direction, limiting the wave development length and, the steep mountains to the south would tend to protect from the formation of this magnitude of wind.

2. The shore slope above the full pool level was assumed to be a continuation of the beach slope angle (8H:1V); allowing for greater wave runup height. However, in practicality the flood fringe between the high water level and the flood construction level would tend to be developed with fill or walls to limit ingress of waves onto the property; limiting runup and reducing the actual wave protection height.
3. The maximum level of erosion with respect to potential property impacts would have to coincide with full pool in the reservoir, which typically only occurs for approximately two months a year; limiting the probability of occurrence.

Recommendations

Flood Construction Level

Based on the conservative determination of the *Wave Protection Height* of 1.30m, it would be reasonable to propose the amendment of the Flood Construction Level for the property to an elevation equivalent to the 1.30m above the full pool level of the reservoir or, 442.00m elevation (Geodetic Survey of Canada Datum).

Setback Requirement

Over the forty year history of the reservoir, the present shoreline along the property has experienced little erosion and no local instability. Consequently, based on the present *Setback* of 7.50 metres from the 440.70m elevation contour, established by BC Hydro, it would be reasonable to maintain this setback distance to govern future development.

Development

To establish a habitable structure on the property, some recontouring of the present land or infilling may be required. The present bank along the shoreline of the property is considered to be comprised of soil appropriate to resist the design level of erosion within the flood fringe zone. However, as the bank and the land taper to the southwest, a significant portion of the property upslope of the setback line is below the proposed FCL, consequently, if the property owner intends to establish a structure within this area, structural fill and/or a supporting structure will be required.

If structural fill will be placed below the FCL to support a structure, it is recommended that this material comprise of a well graded 75mm minus pit run material compacted in place with a slope no steeper than 2H:1V.

If a wall is to be used to elevate a structure above the FCL, it is recommended that the underside of the foundation of the wall be established, at a minimum, 0.60 metres below a line projected at a slope of 8 horizontal to 1 vertical from the 440.70 metre contour.

Conclusion

Based on the analysis performed for this study and subject to the proposed Flood Construction Level and Setback requirements, it can be concluded that the Lot will be safe for its intended use as a residential site.

It must be understood that the recommendations in this report are intended to reduce the impact of erosion on the shoreline of the Lot. In the event that erosion does occur due to wave action during full reservoir, these requirements will not completely eliminate erosion and some damage may occur to the foreshore and property. This damage may comprise of, but not be limited to, the erosion of slopes and land, the flooding of property and, the deposition of silt/sand/gravel and wood.

The information, interpretations and recommendations presented in this report are solely with respect to the lot at 5386 Broadwater Road in Robson, BC.

The recommendations proposed in this report are based on the observations made during the review of the site. If there are any significant variations from the conditions described in this report, an additional site review should be performed to provide amendments to the original recommendations.

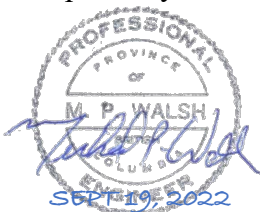
This report and the recommendations contained within were developed in accordance with generally accepted engineering practice. No additional warranty is either expressed or implied.

We acknowledge that the report is prepared for the Regional District of Central Kootenay as a pre-condition to the issuance of a Site Specific Exemption from the provisions of Floodplain Management Bylaw 2080, 2009 under Section 910 of the Local Government Act, and any conditions in this report shall be included in a Restrictive Covenant under Section 219 of the Land Title Act and filed against the title of the subject property.

This report has been prepared for and at the expense of the owner of the subject property and we have not acted for or as an agent of the Regional District of Central Kootenay in the preparation of the report.

We trust that this report meets your needs and if you should require additional information or review, please feel free to contact myself.

Prepared by:



Mike Walsh, P.Eng.
Skmana Creek Consulting Ltd.
Permit to Practice # 1003145

References

Environment Canada (2022). Climate Normals. Weather Station #1141457, Castlegar BCHA Dam.

U.S. Army Corps of Engineers, Shoreline Protection Manual, Department of the Army, Waterways Experiment Station, Corps of Engineers, Coastal Engineering Research Center, 1984.

Figure 1 – Location



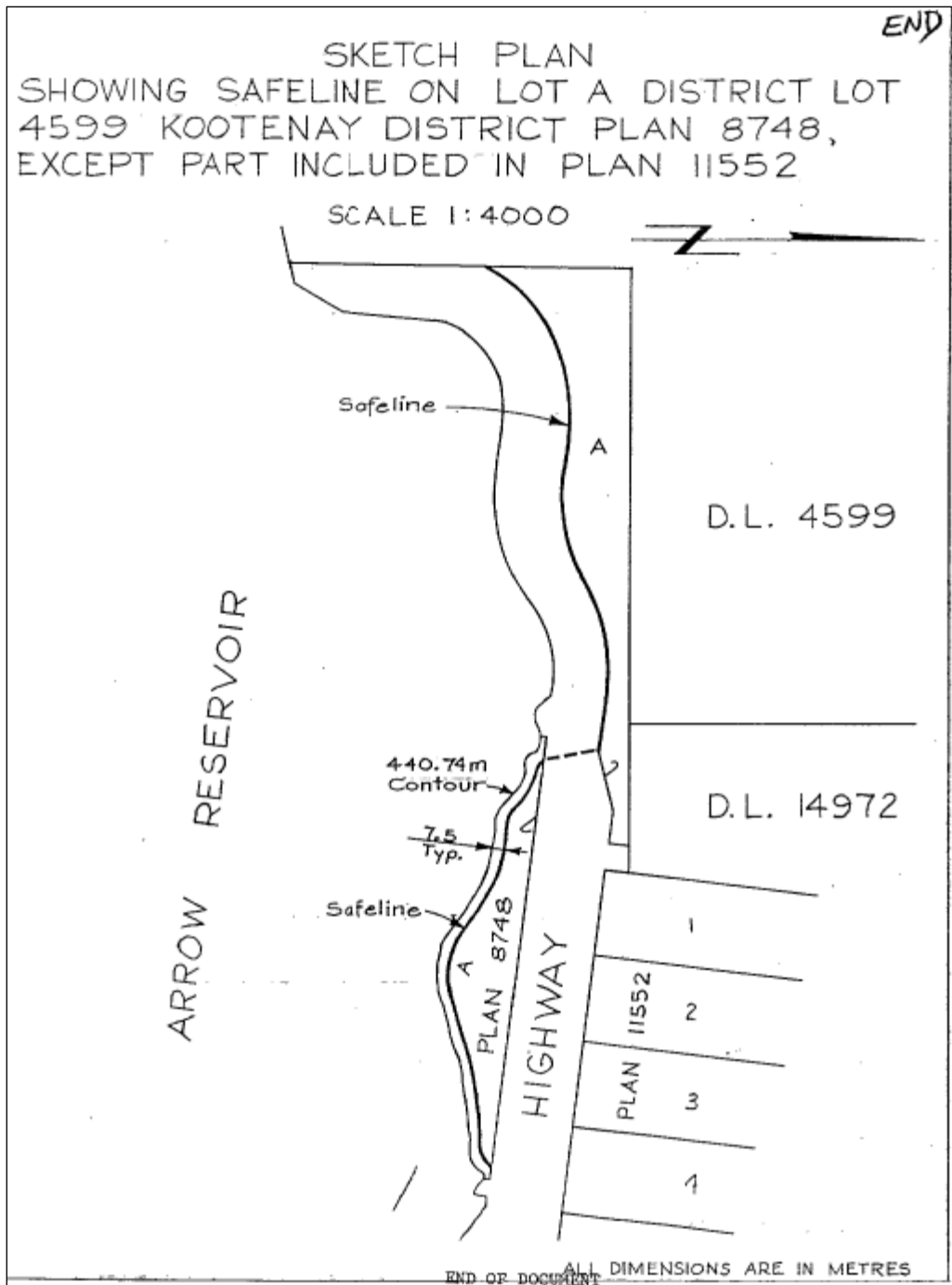
Google Maps (2022)

Figure 2 - Property



Google Earth (2022)

Figure 3 – Map - Original Covenant XH007876



C-NIC

NELSON
LAND TITLE OFFICE

XH007876

'94 MAR 29 AM 10 39

4

Land Title Act

FORM C

Province of British Columbia

GENERAL INSTRUMENT - PART 1

(This area for Land Title Office Use)

Page 1 of 7 pages

1. APPLICATION: Necessary for the operation and maintenance of B. C. Hydro's undertaking

Agnes MacPherson, Agent for
B. C. Hydro and Power Authority
8th Floor, 333 Dunsmuir Street
Vancouver, B. C. V6B 5R3

Agnes MacPherson
Telephone: 623-4377

SUFFREDINE BURCH

2. PARCEL IDENTIFIER(S) AND LEGAL DESCRIPTION(S) OF LAND:
011-288-647 Lot A, DL 4599, Kootenay District, Plan 8748 except part included in Plan 11552

CT X B 15209 All SRW (called "the land" in the attached Terms of Instrument - Part 2)

3. NATURE OF INTEREST:

Description	Document Reference	Person Entitled to Interest
Statutory Right of Way	Entire Instrument	Transferee
Priority Agreement granting SRW priority over Mortgage Numbers J20080 and modification of mortgage L24628 and K1892 and modification of mortgage L25230	Page 7	03/29/94 A21BB CHG FREE .00

Transferee

4. TERMS: PART 2 of this instrument consists of (select one only)

(a) Filed Standard Charge Terms	<input type="checkbox"/>	D.F. No.
(b) Express Charge Terms	<input checked="" type="checkbox"/>	Annexed as Part 2
(c) Release	<input type="checkbox"/>	There is no Part 2 of this instrument

A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument. If (c) is selected, the charge described in Item 3 is released or discharged as a charge on the land described in Item 2.

5. TRANSFEROR(S): HERBERT WOODS and MARIAN ELEANOR WOODS, Joint Tenants (Statutory Right of Way) and KOOTENAY SAVINGS CREDIT UNION (Priority Agreement)

6. TRANSFEREE(S): (Including postal address(es) and postal code(s))
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY,
333 Dunsmuir Street, Vancouver, B. C., V6B 5R3

7. ADDITIONAL OR MODIFIED TERMS: N/A

8. EXECUTION(S): This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s) DIANE PIKET Execution Date 94 03 17

Party(ies) Signature(s)

Herbert Woods
HERBERT WOODS

DIANE PIKET
Barrister & Solicitor

1233 - 3rd Street
Castlegar, B.C. V1N 3H4

As to both signatures

Marian Eleanor Woods
MARIAN ELEANOR WOODS

OFFICER CERTIFICATION:

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the Evidence Act, RSBC 1979, c. 116, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the Land Title Act as they pertain to the execution of this instrument.

File No.: 209-1201.0/1-165 Originator: AM/nm

Date: 94 02 24

Doc type: Flowage Agreement (with safeline)

TERMS OF INSTRUMENT - PART 2

"Owner" means the Transferor as set out in Item 5 on Page 1 (Form C) of the attached General Instrument - Part 1;

"B. C. Hydro" means the Transferee as set out in Item 6 on Page 1 (Form C) of the General Instrument - Part 1; and

"the land" means the land as set out in Item 2 on Page 1 (Form C) of the attached General Instrument - Part 1.

WHEREAS:

- A. In order to impound the waters of the Columbia River and the Arrow Lakes for electric power generation purposes, and for the purposes of controlling the flow of water along the Columbia River, B. C. Hydro is constructing or has constructed, a dam or dams on the Columbia River and may construct other such dams.
- B. The Owner is the owner of the land.
- C. As a result of the construction and operation of one or more such dams, the land or portions thereof will from time to time be flooded or injuriously affected.
- D. For the consideration set out below the Owner has agreed with B. C. Hydro to execute these presents.

NOW THIS AGREEMENT WITNESSETH THAT:

1. The Owner, for and in consideration of the premises and of the sum of Ten Dollars (\$10.00), (the receipt of which he hereby acknowledges) and of the covenants and agreements on the part of B. C. Hydro hereinafter contained, hereby grants in perpetuity to B. C. Hydro the right, liberty and right of way for B. C. Hydro, its servants, agents and all others the licensees of B. C. Hydro, for purposes related to the construction, maintenance or operation of a dam, reservoir or any other plant, used or to be used for or in connection with the generation, manufacture, distribution or supply of power or for the purposes of controlling the flow of water:
- (a) From time to time and for such period or periods and to such extent as B. C. Hydro may in its absolute discretion deem necessary or desirable, to saturate, permeate, overflow, flood and cover the land or any part or parts thereof with the flood, slack or backwater created by the erection or operation of any dam, dams, power generating plant or plants or other structure or structures;
 - (b) To cause debris to be deposited on the land in connection with overflowing, flooding or covering the land as aforesaid;
 - (c) To cause erosion, sloughing and slides on and of the land;
 - (d) To enter upon the land and remove, clear, destroy or dispose of any buildings, structures, timber or other natural growth, obstructions, accumulations, trash, filth or other things, and in particular, without limiting the generality of the foregoing, any buildings, structures, trailers, tents or shelters for human habitation, which in the opinion of B. C. Hydro might in any way interfere with navigation or flood control or the operation of any such dam or generating plant, or the reservoir created by any such dam, or

tend to render inaccessible, unsafe or insanitary either the said reservoir or the margin of the said reservoir;

- (e) To enter upon the land and erect structures and signs, excavate and do such other work as may be desirable in connection with the needs of navigation or flood control or the operation of any such dam, generating plant or reservoir;
- (f) Generally to do all acts necessary or incidental to the business of B. C. Hydro in connection with the foregoing.

2. For the consideration aforesaid, with intent that the covenant hereinafter on his behalf contained shall as far as possible bind the land and every part thereof, and the owner or owners thereof for the time being, and all persons claiming through, under or in trust for him, her or them, and shall enure to the benefit of B. C. Hydro, its successors and assigns, the Owner, for himself, his executors, administrators, successors and assigns, hereby covenants with B. C. Hydro not, without the written consent of B. C. Hydro first had and obtained, to make, place, erect or maintain any building, structure, material or thing or to plant any growth or to use or allow to be used for the purpose of human habitation any building, structure, trailer, tent or shelter upon the land.

3. Notwithstanding anything hereinbefore contained, B. C. Hydro hereby covenants with the Owner that it will give its consent to any activity or purpose set out in Paragraph 2 herein relating to any building, structure, material, thing, growth, trailer, tent or shelter wholly situate above a line, designated "the safe line" as shown in heavy black outline upon the sketch plan hereto annexed, provided that such activity or purpose has a minimum 7.5 metre horizontal setback inland from the 440.74 metre contour of the Arrow Reservoir shoreline, according to Geodetic Survey of Canada datum and provided that the underside of any flooring system of a building for human habitation on the property will be at a minimum elevation of 442.50 metres.

4. For the consideration aforesaid, the Owner does further hereby for himself, his executors, administrators and assigns, release and discharge B. C. Hydro of and from all claim for loss, costs, damages, charges and expenses of any nature or kind to arise out of the impoundment, overflowing or flooding of water occasioned by the construction or operation of any dam, dams, generating plant or plants, or the exercise by B. C. Hydro of any of the rights, liberties and rights of way granted to it in this Agreement, and does hereby accept the said consideration in full settlement and satisfaction of all present and future damages or causes of action which the Owner, his executors, administrators or assigns can now or may at any time hereafter incur, or have or make against B. C. Hydro by reason of the occurrence of any of the things aforesaid, and notwithstanding any such occurrence, he the Owner, for himself, his executors, administrators, successors or assigns, will not make any claim for compensation for personal injury (including death) or injury to any of his property, real or personal, on account of any such occurrence.

5. Notwithstanding anything hereinbefore contained, B. C. Hydro hereby covenants with the Owner not to cause the water impounded by the Hugh Keenleyside Dam to rise above a pool elevation of four hundred and forty point seven four (440.74) metres above mean sea level according to datum of the Geodetic Survey of Canada. The said water elevation is recorded at a gauging station at the Hugh Keenleyside Dam.

6. It is mutually agreed between the Owner and B. C. Hydro that:

- (a) The title to all timber cut on the land and to all things destroyed or disposed of by B. C. Hydro in the exercise of its rights hereunder shall vest in B. C. Hydro;
- (b) This Agreement shall be construed as running with the land, that no part of the fee of the soil shall pass to or be vested in B. C. Hydro under or by these presents and that the Owner may fully use and enjoy the land subject only to the rights and restrictions herein provided;

- (c) The expressions "Owner" and "B. C. Hydro" herein contained shall be deemed to include the executors, administrators, successors and assigns of such parties wherever the context so admits;
- (d) Where the expression "Owner" includes more than one person, all covenants herein on the part of the Owner shall be construed as being several as well as joint; and
- (e) Wherever the singular and masculine are used in this Agreement they shall be construed as meaning the plural or the feminine or body corporate where the context or the parties hereto so require.

IN WITNESS WHEREOF this General Instrument, consisting of both Part 1 and Part 2, has been duly executed on one or more pages.

END

SKETCH PLAN
 SHOWING SAFELINE ON LOT A DISTRICT LOT
 4599 KOOTENAY DISTRICT PLAN 8748,
 EXCEPT PART INCLUDED IN PLAN 11552.

SCALE 1:4000

ARROW RESERVOIR

