

DEVELOPMENT PERMIT NO. 725-133

OWNER: Herald's Bay Development Ltd., Inc. No. BC1097933
10260-112 Street
Edmonton AB T5K 1M4

1. This RAR Development Permit is issued subject to compliance with all the Bylaws of the Regional District applicable thereto, except as specifically varied or supplemented by this Permit.
2. This Permit applies only to the lands described below:

Parcel A (DD 148402F and Plan B6878) of the South East ¼ of Section 21, Township 21, Range 9, W6M, KDYD (PID: 013-671-502), which property is more particularly shown outlined in bold on the map attached hereto as Schedule A and which proposed development is shown on the site plan attached hereto as Schedule B.
3. This Permit is issued pursuant to Section 12.4 of the "Electoral Area 'C' Official Community Plan Bylaw No. 725" for the development of 14 waterfront residential lots located within the 30 m RAR assessment area and is based on the report submitted by Triton Environmental Consultants, December 12, 2017, attached hereto as Schedule C, which satisfies the requirements of the Riparian Areas Regulation Development Permit as set out in the Electoral Area C Official Community Plan Bylaw No. 725. The subject property must be developed in accordance with the recommendations contained within this report.
4. An amendment to the Permit will be required if development is not in substantial compliance with this Permit.
5. It is understood and agreed that the Regional District has made no representation, covenants, warranties, guarantees, promises or agreement (verbal or otherwise) with the developers other than those in the permit.
6. This Permit shall inure to the benefit of and be binding upon the parties hereto and

their respective heirs, executors, administrators, successors and assigns.

7. This Permit is NOT a building permit.

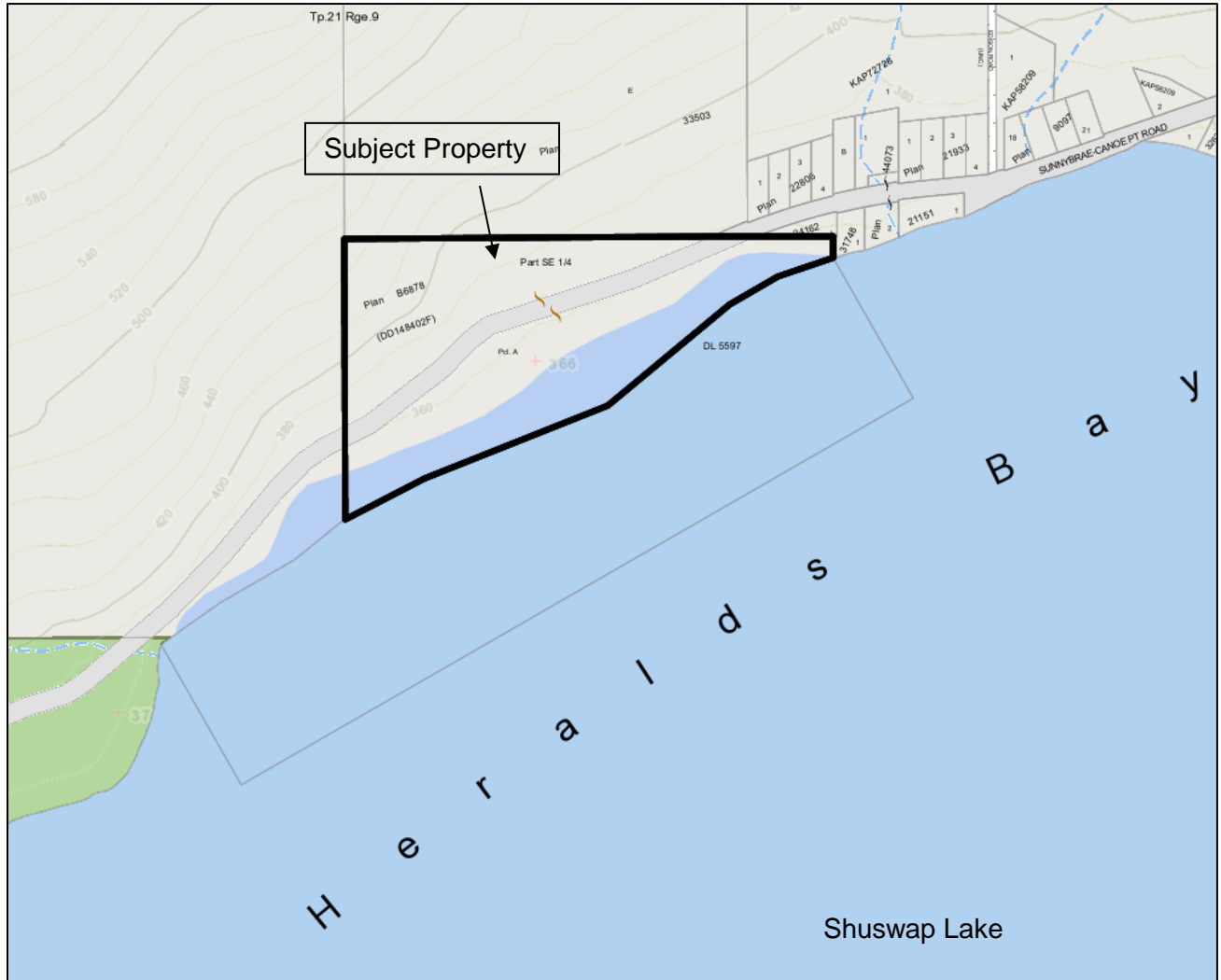
AUTHORIZED AND ISSUED BY the Manager of Development Services of the Columbia Shuswap Regional District on the _____ day of _____, 2018.

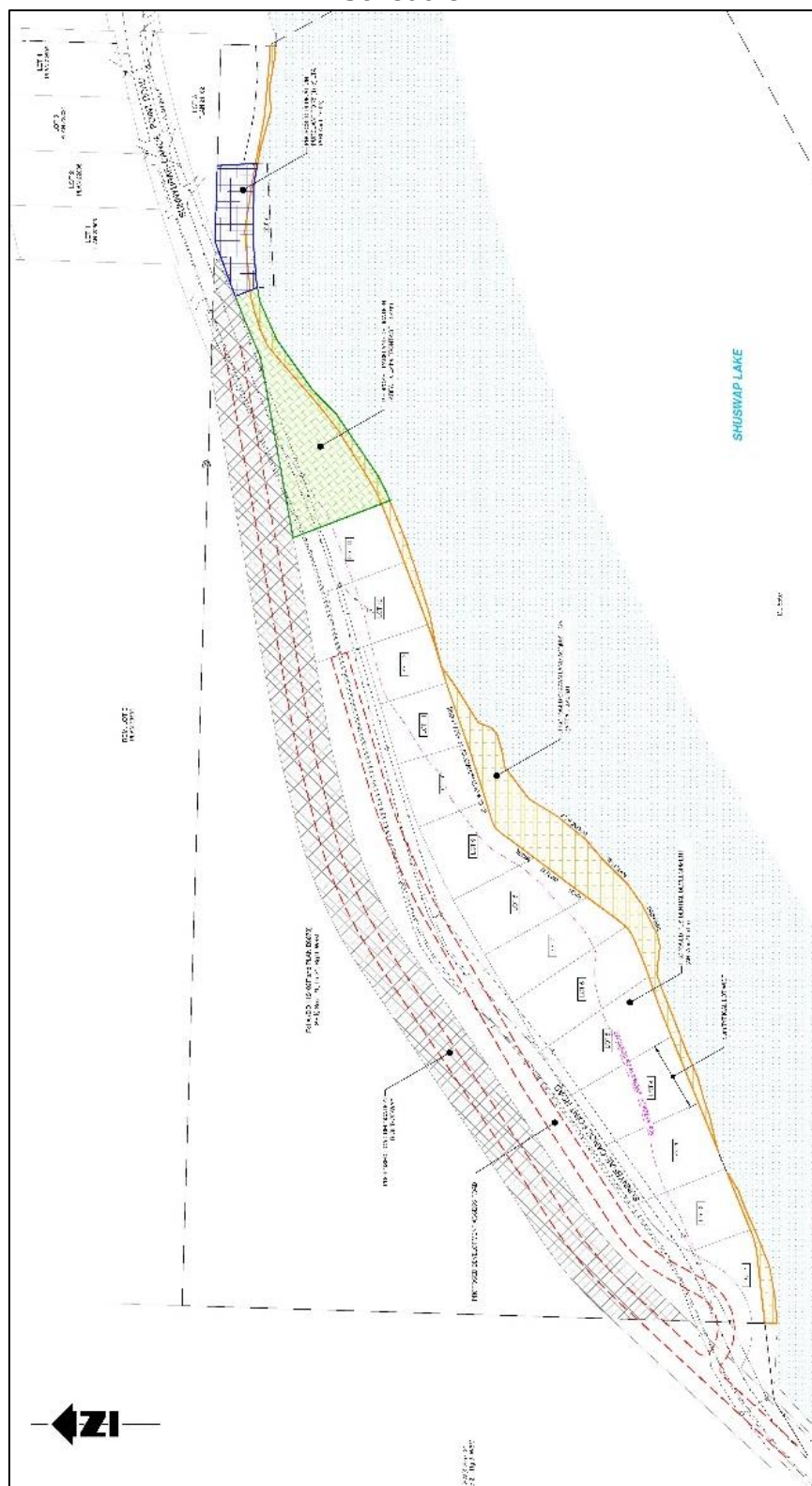
Gerald Christie
Manager, Development Services

PLEASE NOTE:

- 1) Pursuant to Section 504 of the Local Government Act, if the development of the subject property is not substantially commenced within two years after the issuance of this permit, the permit automatically lapses.**
- 2) This Permit addresses Local Government regulations only. Further permits or authorizations may be required from Provincial and Federal governments. It is the owner's responsibility to call Front Counter BC at 1-877-855-3222 regarding this project.**

Schedule A





Schedule C

FORM

1 Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

Riparian Areas Regulation: Assessment Report Date **December 12, 2017**

I. Primary QEP Information

First Name	Bill	Middle Name	
Last Name	Rublelee		
Designation	R.P. Bio	Company	Triton Environmental Consultants Ltd.
Registration #	573	Email	brublelee@triton-env.com
Address	1326 McGill Road		
City	Kamloops	Postal/Zip	V2C 6N6
Prov/state	B.C.	Country	Canada
		Phone #	250-851-0023

II. Secondary QEP Information (use Form 2 for other QEPs)

First Name	N/A	Middle Name	
Last Name			
Designation			
Registration #		Email	
Address			
City		Postal/Zip	Phone #
Prov/state		Country	

III. Developer Information

First Name	Herald's Bay Developments LTD	c/o Rominovski and Associates
Last Name		
Company	Herald's Bay Developments LTD.	
Phone #	403 620-3914	Email Herald's Bay Developments LTD.@telus.net
Address	10260 112 St.	
City	Edmonton	Postal/Zip T5K 1M4
Prov/state	Alberta	Country Canada

IV. Development Information

Development Type	Residential	
Area of Development (ha)	.65	Riparian Length (m) 1000
Lot Area (ha)	11.92	Nature of Development Redevelopment
Proposed Start Date	January 1, 2018	Proposed End Date January 1, 2023

V. Location of Proposed Development

Street Address (or nearest town)	4990 Sunnybrae-Canoe Point Road		
Local Government	CSRD	City	Salmon Arm
Stream Name	Shuswap Lake		
Legal Description (PID)	013-671-502	Region	Central Interior Region
Stream/River Type	Lake	DFO Area	BC Interior
Watershed Code	128		
Latitude	50	47	51
Longitude	119	11	23

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Riparian Areas Regulation - Qualified Environmental Professional - Assessment Report

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Section 1. Description of Fisheries Resources Values and Description of the Development proposal

Fisheries Resource Values

Shuswap Lake (WSC: 128) and its tributaries, part of the Thompson River Watershed, is an important fish-bearing waterbody which supports many species of fish, including anadromous Salmon.

Shuswap Lake contains the following fish species. (Habitat Wizard, 2016):

Common Name	Scientific Name	Common Name	Scientific Name
Rainbow Trout	<i>Oncorhynchus mykiss</i>	Carp	<i>Cyprinus carpio</i>
Burbot	<i>Lota lota</i>	Dace	<i>Rhinichthys spp.</i>
Kokanee	<i>Oncorhynchus nerka</i>	Lake Chub	<i>Couesius plumbeus</i>
Sockeye Salmon	<i>Oncorhynchus nerka</i>	Lake Trout	<i>Salvelinus namaycush</i>
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	Lake Whitefish	
Pink Salmon	<i>Oncorhynchus gorbuscha</i>	Northern Pikeminnow	<i>Ptychocheilus oregonensis</i>
Sculpin	<i>Cottus</i>	Largescale Sucker	<i>Catostomus macrocheilus</i>
Coho	<i>Oncorhynchus kisutch</i>	Leopard Dace	<i>Rhinichthys falcatus</i>

Shuswap is a large lake (approximately 31,000 ha) with a maximum depth of 162 m. The area has a high annual runoff and the theoretical flushing rate of the basin is 2.2 years. The average conductivity ranges from 55-114 umho/cm² and the morphoedaphic index (conductivity divided by depth in meters) is 1.4 (Williams 1989). The measurements of conductivity and morphoedaphic index indicate that Shuswap Lake is classified as an oligotrophic lake, one with generally low nutrient values. The dominant nutrient pathways in large lakes are tied into the inputs from tributary streams and other surface runoff, the airshed and sunlight. Nutrients enter the lake from these pathways and are taken by living organisms at the bottom of the food chain (plants, algae and phytoplankton). The nutrient inputs eventually make their way up the food chain as zooplankton and invertebrates consume the plant/algae/phytoplankton organisms and eventually become available as food sources for fish. Tributary streams can also be a direct source of zooplankton and insects that contribute to the food chain in the lake.

The littoral or shoreline zone of the lake is important for rearing of many fish species and is of particular importance to juvenile salmon. Salmon spawn in tributaries that enter into the lake in the fall (trout spawn in the spring) and eggs incubate throughout the winter. In the spring, fry descend the rivers and take up position along the shoreline and start feeding. As the fry grow they migrate along the shore to distribute throughout the basin. As they become larger and better swimmers they can forage in greater water depths.

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Sockeye fry migrate off shore after several weeks to begin rearing in the deeper waters out in the lake. As temperatures increase in the summer, chinook fry move further offshore into deeper cooler water but maintain their affiliation with the lake margins (Russell, 1978). Fish will sometimes move into shallower water at night and return to cooler deeper water during daylight hours. Lake Trout spawn in the fall in shoal areas associated with lakeshores. Some lake Trout spawning occurs along the north shore of the main arm of Shuswap Lake. Lake Trout spawning occurs in coarse cobble and boulder substrate. Use by salmonids would be dependent on water temperatures inside the basin. It is possible that young of the year salmon could rear in the area in May and early June but would likely move out into the lake when temperatures rise. Generally temperatures in excess of 16°C will cause rearing juvenile chinook to move off shore in Shuswap Lake to deeper water habitats (Russell 1979).

The Shuswap Foreshore and inventory mapping report identifies that the project lies within segment 253 which describes the area as sand beach with a low Aquatic Habitat Index score, with no sockeye or char spawning activity associated with the site (Ecoscapes 2008, Shuswap Lake Sockeye and Char Spawning Atlas). The site visit confirmed that the site has minimal fish habitat values, fish use would be associated with foraging and transient rearing of juvenile salmonids.

Riparian Area

The lower portions of the site has limited vegetation due to its historic use as a log sort. There is a fringe of Douglas fir along the nearshore at the south-west end of the property. The west of the property and the area above the road has a competent open fir forest. Understory includes Saskatoon bushes and Oregon grape cover. There was some evidence of a previous restoration (replanting) initiative in the barren areas near the lake, however the initiative did not appear to be successful, likely due to the very poor soil conditions. The proximity to the Sunnybrae Canoe Point Road likely influences wildlife use, this and the limited habitat values in the proximity of the lake. Deer sign was noted in the area to the south of the highway.

Site Condition and Development Proposal

The site was historically used as a log sort located adjacent to a booming area in the lake. The major site clearing and earthworks which took place prior to 1974 resulted in clearing and flattening of the log sort area near Shuswap Lake at the north east end of the property. There is evidence of historic wood waste throughout the site. In spite of the fact that the areas has not seen industrial activity for several years there is little revegetation due to the infertile nature of the site. The presence of wood waste was confirmed in a consultant report which indicated evidence of non-native materials extending to a depth of up to 1.5 m in the log sort area (GD Assessments Inc.).

The development proposal is to reclaim the site and create 14 building lots each with lakefront. The site reclamation will include removing the non-native material, re-contouring, add appropriate growth medium and replanting the area once it has been restored. The SPEA is 15 m throughout the site and there is ample room for houses to be constructed and be outside the defined SPEA. See Site Drawing Figure 3.

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References:

Ecoscapes, 2008, Foreshore Inventory Mapping Shuswap and Mara Lakes

GD Assessments Inc. 2017 Stage 1 and Partial Stage 2 Preliminary Site Investigation 4990 Sunnybrae Canoe Point Road

Province of BC, 2017. Habitat Wizard. Accessed June 2017

Russell, L.R., Graham, C.C., Sewid, A.G., and Archibald, D.M. 1981. Distribution of juvenile Chinook, coho, and sockeye salmon in Shuswap Lake – 1978 – 1979—biophysical Inventory of Littoral Areas of Shuswap Lake 1978. Fisheries and Oceans Canada, Fish. Mar. Serv. Man. Rept. No. 1479.

Shuswap Lake Sockeye and Char spawning atlas 2017 <http://www.shim.bc.ca/shuswap/>

Williams, I.V., 1989. Studies of the lacustrine biology of the sockeye salmon (*O. nerka*) in the Shuswap System. Int. Pac. Salmon Fish. Comm. Bull. No. XXIV.

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Section 2. Results of Detailed Riparian Assessment

Refer to Chapter 3 of Assessment Methodology

Date: July 2017

Description of Water bodies involved (number, type)

1 - Lake

Stream	
Wetland	
Lake	1
Ditch	
Number of reaches	1
Reach #	1

Channel width and slope and Channel Type (use only if water body is a stream or a ditch, and only provide widths if a ditch)

Channel Width(m)		Gradient (%)
starting point		
reedman		
downstream		
Total: minus high /low mean		
	R/P	C/P S/P
Channel Type		

I, Bill Rublee, hereby certify that:

a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;

b) I am qualified to carry out this part of the assessment of the development proposal made by the developer HERALD'S BAY DEVELOPMENTS LTD.;

c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

Site Potential Vegetation Type (SPVT)

	Yes	No
SPVT Polygons		X

Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes

I, Bill Rublee, hereby certify that:

a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;

b) I am qualified to carry out this part of the assessment of the development proposal made by the developer HERALD'S BAY DEVELOPMENTS LTD.;

c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and

d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

Polygon No: LC SH TR

SPVT Type LC SH TR X

Method employed if other than TR

Zone of Sensitivity (ZOS) and resultant SPEA

Segment	1	If two sides of a stream involved, each side is a separate segment. For all water bodies multiple segments occur where there are multiple SPVT polygons
No:		
LWD, Bank and Channel Stability ZOS (m)	15	
Litter fall and insect drop ZOS (m)	15	

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Shade ZOS (m) max	30	South bank	Yes		No	x
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)					
Ditch Fish Bearing	Yes		No		If non-fish bearing insert no fish bearing status report	
SPEA maximum	15	(For ditch use table3-7)				

I, Bill Rublee, hereby certify that:

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

Comments

The SPEA for this property is 15m.

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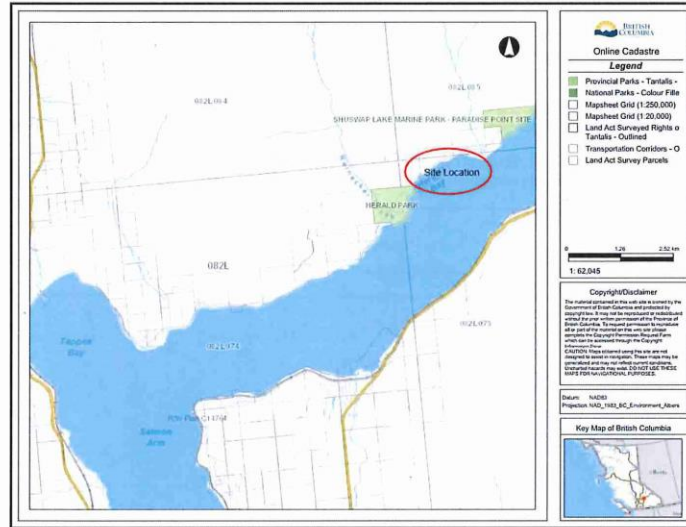
Section 3. Site Location

Figure 1 Site Location

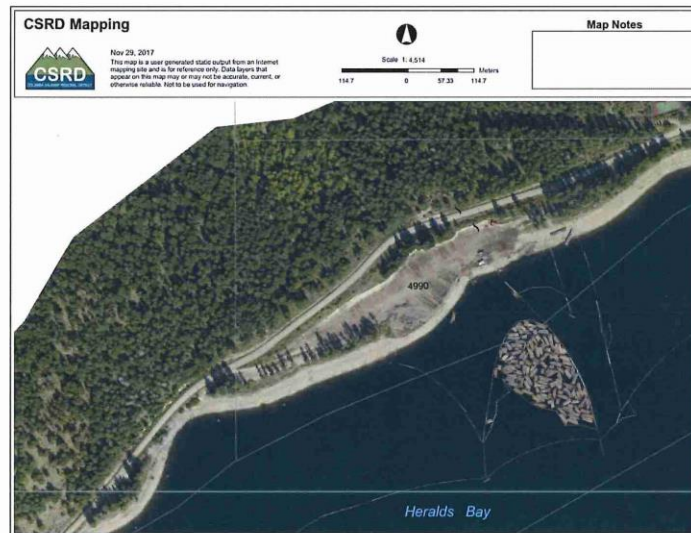


Figure 2 Orthophoto of site

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Section 4. Site Plan

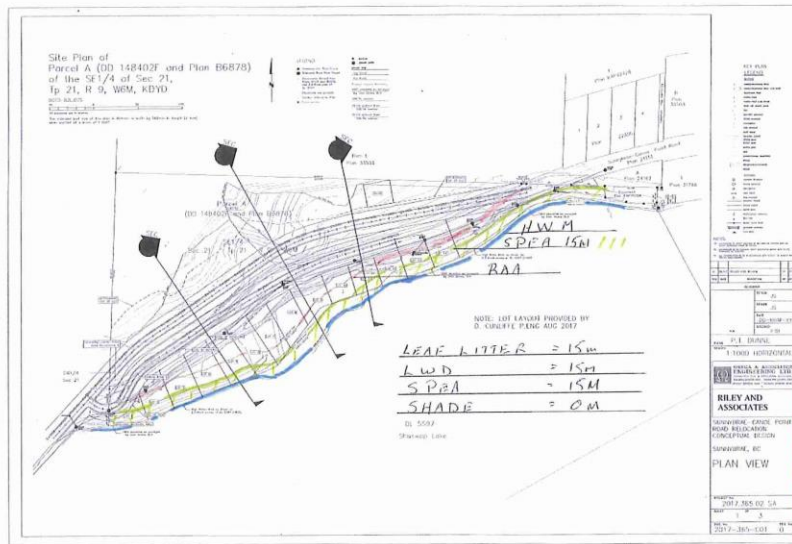


Figure 3: Site drawing with setback.

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Section 5. Measures to Protect and Maintain the SPEA

Please note. I have commented in measures windows that deal with engineering and geotechnical for which I am not a QEP. I am however comfortable in identifying that input from these professional is not required in this case. If there any of these measures required attention these professionals would have been brought in to provide services.

Danger Trees	No danger trees were noticed during site visit.
I, <u>Bill Rublee</u> , hereby certify that: a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; b) I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u> ; c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
Windthrow	No windthrow risk identified on site.
I, <u>Bill Rublee</u> , hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u> ; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d. In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
Slope Stability	The purposed area for development has been previously modified, no slope stability issues have been identified.
I, <u>Bill Rublee</u> , hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u> ; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and d. In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
Protection of Trees	The SPEA will be delineated prior to any works being undertaken. No trees within the SPEA will be impacted during development activities.
I, <u>Bill Rublee</u> , hereby certify that: I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; a. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u> ; b. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and c. In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
Encroachment	The 15 m SPEA and all siting of houses associated with development area will be back from the SPEA.
I, <u>Bill Rublee</u> , hereby certify that: a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i> ; b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u> ; c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and	

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d. In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation	
Sediment and Erosion Control	<p>Any risks to sediment reaching the lake during reclamation and construction activities will be managed and mitigated for. During construction, BMPs (Land Development Guidelines and Provincial A Users Guide to Working Around Water) must be used including silt fencing, storing spoil away from the water and tarping spoil piles</p> <p>BMPs including the use of silt fencing will The SPEA will be delineated by fencing during construction.</p> <p>Recommended sediment and erosion control include:</p> <ul style="list-style-type: none"> • Silt fence and run-off controls (straw bales and poly sheets) during the pouring of cement pad; • No cement pouring during Increment weather and any soils excavated and left for more than 1 day must be covered by a tarp; • No excavated materials may be stored within 15m of the highwater mark; and • Install BMP's early in the construction process.
<p>I, <u>Bill Rublee</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and</p> <p>d. In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
Stormwater Management	Stormwater coming from the roof of the structures will be directed into a groundwater drain system.
<p>I, <u>Bill Rublee</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and</p> <p>d. In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	
Floodplain Concerns (highly mobile channel)	There are no floodplain concerns and all development will be in accordance to CSRD floodplain bylaws.
<p>I, <u>Bill Rublee</u>, hereby certify that:</p> <p>a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the <i>Fish Protection Act</i>;</p> <p>b. I am qualified to carry out this part of the assessment of the development proposal made by the developer <u>HERALD'S BAY DEVELOPMENTS LTD.</u>;</p> <p>c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and</p> <p>d. In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation</p>	

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Section 6. Environmental Monitoring

Monitoring during construction activities will be done on an as needed basis to ensure that Best Management Practices are followed to protect against sediment inputs into the Shuswap Lake. An initial site visit will correspond with start of activity to ensure that the contractor is aware on the requirements for BMPs and primarily sediment control. The initial site visit will serve to identify those sensitive works that will require an on-site monitor.

A post project monitoring assessment will be conducted and a report documenting adherence to the Assessment Report SPEA and Measures designed to protect the SPEA will be submitted.

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Section 7. Photos



Photo 1. Herald's Bay Looking North, July 2017



Photo 2. Fill area, July 2017

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Photo 3. Log waste and fill, July 2017



Photo 4. Disturbed area and treed section to the North end fill, July 2017

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Photo 5. Fir forest upslope (south east) off the Sunny Brae Canoe Point Road, July 2017

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Section 8. Professional Opinion**Assessment Report Professional Opinion on the Development Proposal's riparian area.**Date

November 30, 2017

1. We, Bill Rublee, R.P. Bio

hereby certify that:

- a) We are qualified environmental professional(s), as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
- b) I am/We are qualified to carry out the assessment of the proposal made by the developer HERALD'S BAY DEVELOPMENTS LTD., which proposal is described in section 3 of this Assessment Report (the "development proposal");
- c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
- d) In carrying out my/our assessment of the development proposal, I have/We have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation; AND

2. As qualified environmental professional(s), we hereby provide my/our professional opinion that:

- a) ☐ if the development is implemented as proposed by the development proposal there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area in which the development is proposed, **OR**

(Note: include local government flex letter, DFO Letter of Advice, or description of how DFO local variance protocol is being addressed)

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

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Appendix 1 PDF of Development

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