



REGIONAL DISTRICT OF CENTRAL KOOTENAY

DEVELOPMENT PERMIT

DP1802HN-01086.300-PAYNTON-DP000083 (DP1802Hn)

Date: October 29, 2018

Issued pursuant to Section 489 of the *Local Government Act*

1. This Development Permit is issued to 0979411 BC Ltd c/o Deb Paynton as the registered owner (hereinafter called the "Permittee") and shall only apply to those lands within the Regional District of Central Kootenay, in the Province of British Columbia legally described as Lot A District Lots 298 and 4877 Kootenay District Plan NEP66984 (PID: 024-803-120) as shown on the attached Schedule 1, forming part of this Permit, referred to hereafter as the "said lands."
2. This Development Permit is issued subject to compliance with all of the bylaws of the Regional District of Central Kootenay applicable thereto, except as specifically varied or supplemented by this Permit.
3. This Development Permit shall not have the effect of varying the use or density of land as specified in the applicable Zoning Bylaw of the Regional District of Central Kootenay, nor a Floodplain Specification under Section 524 of the Local Government Act.
4. This Development Permit shall not relieve the applicant from meeting Provincial requirements and obtaining Provincial permits, including Water Act Permits for any associated foreshore works.
5. The said lands have been designated as a 'Watercourse Development Permit Area' pursuant to the Slokan Lake North Portion of Electoral Area H Official Community Plan Bylaw No. 1967, 2009, as amended.
6. The Permittee has applied to the Regional District of Central Kootenay to subdivide the parcel into 11 lots and construct three accessory buildings within the Watercourse Development Permit Assessment Area. Pursuant to this Development Permit and subject to the terms and conditions herein contained, as well as all other applicable Regional District Bylaws, the Regional District of Central Kootenay hereby authorizes the use of the said lands for this purpose.
7. The Permittee is required to obtain approval in writing from the Regional District of Central Kootenay prior to any further development, including the construction any new buildings, external additions to existing buildings or for any deviation from the development authorized in this Development Permit. Furthermore, the Permittee is hereby advised of the following requirements:
 - 7.1 The Regional District of Central Kootenay Building Department requires that the Permittee obtain a demolition permit and/or building permit prior to the removal of any existing buildings and structures, the renovation, expansion or alteration of any existing building and the construction of any new building.
 - 7.2 Development is authorized in accordance with the terms described in the report titled "Assessment for Watercourse Development Permit – Rosebery Shores", dated December 12, 2016, and the "Addendum to the Assessment for Watercourse Development Permit,

dated October 22, 2018” prepared by Ecora Ltd. attached to this permit as Schedules 2 and 3, including compliance with the recommendations – Protection of Work Limits; Site Preparation and Soil Management; Erosion and Sediment Control; Invasive Species Management and Site Restoration.

- 7.3 Construction of three accessory buildings (storage structure for kayaks, storage shed for supplies and gazebo) no larger than 100 square feet within the 0.040ha (0.099 acre) segment of said lands is authorized within the Watercourse Development Permit Assessment Area. Construction is not permitted within the Streamside Protection and Enhancement Area 0.034ha (0.83acre).
- 7.4 Invasive plant removal and site restoration planting with native grass seed, and a total of 50 trees, shrubs and groundcover plants to be completed as set forth in Sections 3.4 and 3.5 of Schedule 3.
- 7.5 Further development as defined in the Watercourse Development Permit area, including: removal, alteration, disruption or destruction of vegetation, installation of buildings or structures or impervious or semi-impervious pathways, yard maintenance, flood protection works or the creation of wharves or docks within the 15 metre streamside protection and enhancement area other than that authorized by this permit is strictly prohibited, except for the following:
 - 7.5.1 The removal of trees that have been examined by an arborist and certified to pose an immediate threat to life or property.
8. As a condition of the issuance of this Permit, the Regional District shall hold an irrevocable Letter of Credit submitted by the Permittee in the amount of \$5000 to ensure that the restoration planting requirements “the works” as set forth in Section 7 are completed and in accordance with the following provisions:
 - 8.1 A condition of the posting of the Letter of Credit is that should the Permittee fail to carry out the works and services as herein above stated, according to terms and conditions of this permit within the time provided, the Regional District may use the Letter of Credit to complete these works or services by servants, agents or contractors, and any surplus shall be paid over to the Permittee. If the amount of funds is insufficient to cover the actual cost of completing the works, then the Permittee shall pay such deficiency to the Regional District immediately upon receipt of the Regional District’s bill for same.
 - 8.2 The Permittee shall complete the works required by this Permit prior to November 2019. Within this time period the required work must be inspected and approved by the Regional District.
 - 8.3 If the work is not approved within this time period, the Regional District has the option of continuing to renew the Letter of Credit until the required work is completed or has the option of drawing from the Letter of Credit to complete the required work. In this event, the Regional District or its agents have the irrevocable right to enter into the property to undertake the required work for which the Letter of Credit was submitted.
 - 8.4 If the work is approved within this time period without the Regional District having to draw the on the Letter of Credit, 30% of the original amount of the Letter of Credit shall be returned to the Permittee.
 - 8.5 A hold back of 70% of the original amount of the Letter of Credit shall be retained until a final inspection is undertaken within 12 months of the date of the original inspection and approval was given to the work. If the work receives approval at final inspection, the 70%

hold back will be returned to the Permittee. If after the final inspection, approval of the work is not given, the Regional District has the option of continuing to renew the Letter of Credit until the required work is approved or has the option of drawing on the Letter of Credit the funds to complete the required work. In this event, the Regional District or its agents have the irrevocable right to enter onto the property to undertake the required work for which the Letter of Credit was submitted.

- 9. The said lands shall be developed strictly in accordance with the terms and conditions of this Development Permit and the requirements of all applicable Regional District Bylaws as well as any plans and specifications which may, from time to time, be attached to this Permit shall form a part thereof.
- 10. In accordance with the Local Government Act, if the development authorized by this Development Permit is not commenced within two years of the date of this Permit, this Permit shall lapse.
- 11. In accordance with the Local Government Act, 'Notice' shall be filed in the Land Title Office that the said lands are subject to this Development Permit.
- 12. The terms of this Development Permit including subsequent amendments, are binding on all persons who acquire an interest in the said lands associated with this Permit.
- 13. It is understood and agreed that the Regional District has made no representations, covenants, warranties, guarantees, promises, or agreement (verbal or otherwise) with the Permittee other than those in this Development Permit. It is solely the responsibility of the Permittee to ensure that the requirements of all other applicable government agencies are satisfied.
- 14. This Development Permit does not constitute a building permit.
- 15. This Development Permit shall come into force and effect 14 days after the date of issuance unless a Waiver of Appeal is received from the Permittee at which time the Development Permit shall be deemed to be issued upon receipt of the Waiver of Appeal. OR If a Notice of Appeal is received the Development Permit shall be suspended until such time as the Board of the Regional District of Central Kootenay has decided the Appeal.

Sangita Sudan, General Manager of Development Services

Date of Approval

Date of Issuance

Schedule 1: Location Map

Schedule 2: Ecora Environmental Assessment, dated December 12, 2016

Schedule 3: Ecora Environmental Assessment Addendum, dated October 28, 2018

Schedule 1: Location Map

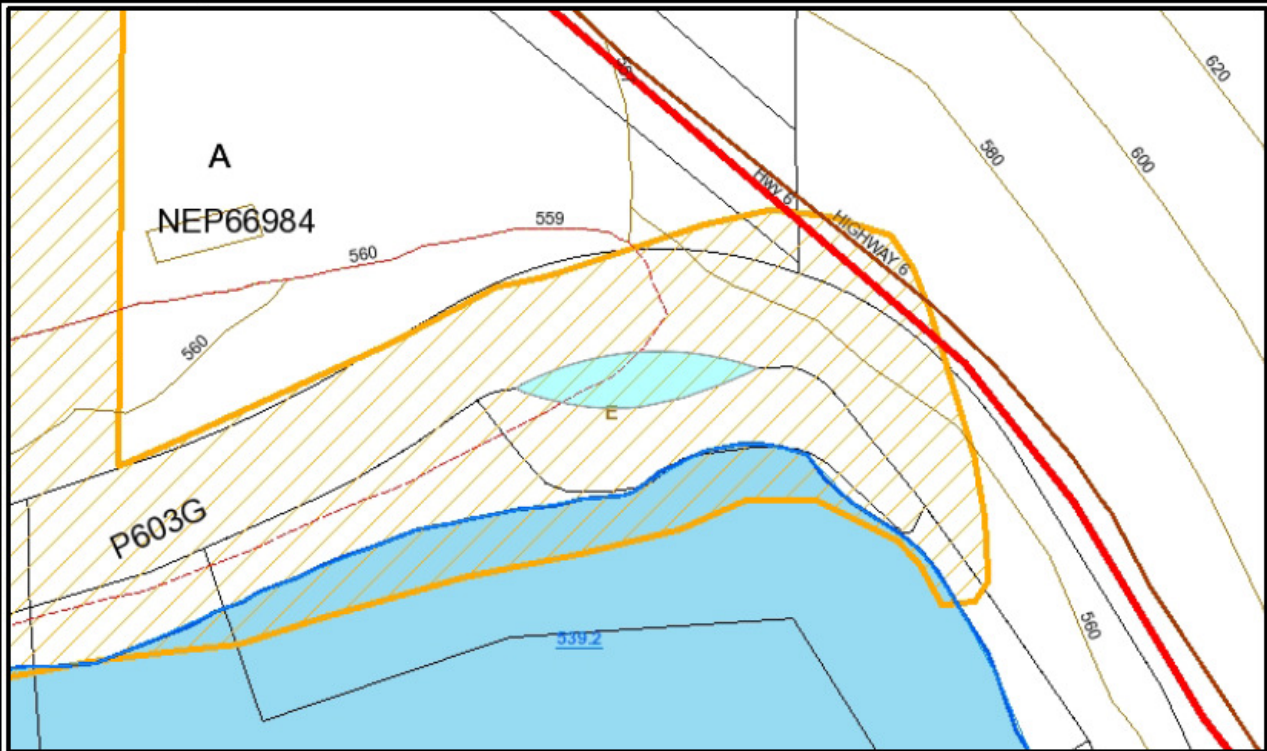


The Regional District of Central Kootenay
 Box 590, 202 Lakeside Drive, Nelson British Columbia V1L 5R4
 Phone: 250-352-6665 Toll Free 1-800-268-7325 Web:
 www.rdck.bc.ca E-Mail: Info@rdck.bc.ca

03-Aug-2016

Property Information Report

Owners:	0979411 B C LTD	EA: H
Mailing Address:	PO BOX 201^WINLAW BC V0G 2J0	
Folio Number:	710.01086.200	PID: 024-803-120 Parcel area: 11.02 ACRES
Site Address:	HIGHWAY 6	
Legal Description:	LOT A PLAN NEP66984 DISTRICT LOT 298 KOOTENAY LAND DISTRICT & DL 4877.	



Land-use Information

Zoning Designation:	UNZONED		
		NSFEA & Rating:	Wilson Creek E
	Actual Use Code:	429 Miscellaneous (Forest And Allied Industry)	

General Services Information

	Fire Department:	N DENVER/SILVER
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December 12, 2016

Ecora File No.: NN-16-565

Deborah and Wayne Paynton
PO BOX 201
Winlaw, BC V0G 2J0

Attention: Deb and Wayne Paynton

Reference: Assessment for Watercourse Development Permit - Rosebery Shores

1. Introduction

Ecora Engineering and Resource Group Ltd. (Ecora) was requested to undertake an assessment pursuant to obtaining a Watercourse Development Permit (WDP) as required by the Slokan Lake North portion of Electoral Area 'H' Official Community Plan (OCP) Bylaw 1967, 2009. This report is prepared for the Regional District of Central Kootenay as a precondition to the issuance of a Subdivision Approval at 153 Rosebery Road, in the Regional District of Central Kootenay (RDCK), BC (The Property). The Property is legally described as Lot A Plan NEP66984 District Lot 298 Kootenay Land District & DL 4877, PID: 024-803-120 (Figure 1.0). The owners of the property are 0979411 B C LTD (Deborah and Wayne Paynton). This report is to be included in a Development Permit under section 920 of the Local Government Act and filed on title of the subject property.

This report has been prepared for the owners of the Property and the Qualified Environmental Practitioner, Tom Braumandl RPF, has not acted for or as an agent of the Regional District of Central Kootenay.

The assessment is intended to determine appropriate lakeshore setback boundaries pursuant to the provincial Riparian Areas Regulation (RAR) guidelines, regional and municipal polices, and provincial best management practices.

1.1 Scope of Work

The project was based on the following scope of work.

- Complete a site assessment of the Property, including existing riparian and foreshore values and determination of appropriate riparian setback.
- Prepare a report and mapping deliverables with preliminary setback assessment results to incorporate into planning and design of future development of the Property.

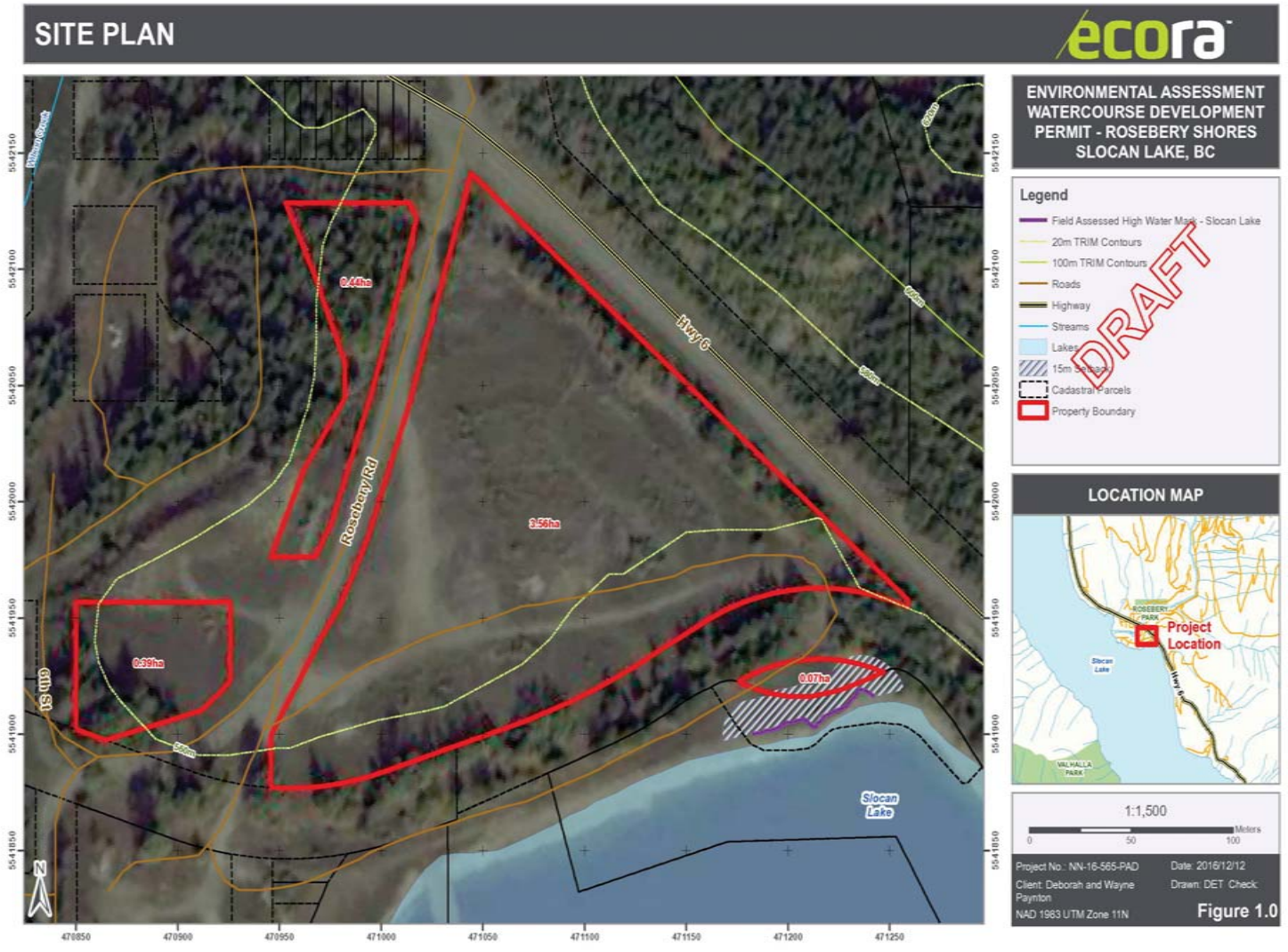


Figure 1.0 Map of Subject Property

1.2 Background Review

The subject property is located along the eastern shoreline of Slocan Lake about one kilometre south of the mouth of Wilson Creek at the southeast edge of the community of Rosebery (Figure 1.0). The 11.02 acre (4.4ha) Property is un-zoned but designated as Industrial (M1) under the RDCK OCP Bylaw #1967. The Property is currently undeveloped but has been previously disturbed by placement of non-native fill material, and had been used as a log storage yard but has been vacant for approximately 15 years¹. Single-family houses have been constructed on neighbouring lots to the west. The Property is bounded by Highway 6 on the northeast. The Property consists of four parcels, with the smallest, comprising 0.074ha (0.18 acre). This smallest parcel has triggered the Watercourse Development Permit process (within 30m of the mapped lake shore). This parcel is shaped elliptically with a length of about 70m and a width of about 16m (Figure 2.0).

¹ Keystone Environmental. Report of Findings – Phase II Environmental Site Assessment Rosebery Log Yard, Rosebery, Central Kootenay Regional District, BC Project No. 12680. Report prepared for MCP Acquisition Holdings Ltd. November 2015



Figure 2.0 Map of parcel subject to Watercourse Development Permit

The other portions (3 other parcels) of the Property were also assessed to ensure that activities on the parts of property more distant from Slocan Lake would not negatively affect Slocan Lake or Wilson Creek. All other portions of the property are either flat or gently sloping and have no surface water connection to either Wilson Creek or Slocan Lake. The nearest portion of the property is over 100m distant from Wilson Creek. The main parcel of the Property is over 35m distant from Slocan Lake.

Other sources of information pertaining to the Property that were accessed as part of the overall assessment and preliminary setback determination are provided below.

- Slocan Lake Foreshore Fish and Wildlife Habitat Assessment (Galena Environmental Ltd. 2011) (see footnote 1 for citation).

2. Environmental Assessment

Ecora conducted a site visit on December 7, 2016 to determine the location of the high water mark (HWM; aka natural boundary) of Slocan Lake and assess the riparian and foreshore values within the Property. The assessment was conducted by Tom Braumandl, R.P.F., a qualified environmental professional (QEP). Ecora has spoken with the Property owner and discussed the development plans and potential environmental constraints associated with the riparian setbacks. The plans for the Property are for the sub-division of 11 residential lots. On the smallest parcel (subject to the WDP process), the only potential development is installation of a canoe/kayak storage shed, a gazebo, and a fence around the parcel perimeter. No detailed plans (exact dimensions) or designs for the proposed structures are available at this time. The results of the assessment are described further below.

2.1 Riparian and Foreshore

The following statements refer to the smallest parcel of the Property adjacent to Slocan Lake. The parcel is a level terrace of gravelly, sandy fill material. This terrace was likely created to provide machine access to the foreshore where log booms were anchored. The parcel is bounded on the north side by the Galena rail trail, which rises about 2 m above the level of the parcel. The foreshore area below the HWM consists of boulders that were placed as rip rap (erosion protection) below the constructed fill terrace. There are few places where these boulders appear to have been displaced by wave action and gravels have been exposed. The foreshore beach was about 10m wide when the assessment was conducted and slopes gently (approximate 15% slope) (Photo 2.1). The parcel is dominated by invasive or planted non-native species, including knapweed (*Centaurea* sp.), hare's-foot clover (*Trifolium arvense*), and Kentucky bluegrass (*Poa pratensis*) (Photo 2.2). Very few trees are found on the parcel. An approximately 20m tall black cottonwood (*Populus trichocarpa*) is found at the very western end of the parcel. Several approximately 15m tall Douglas-fir (*Pseudotsuga menziesii*) trees occur at the extreme eastern end and two approximately 4m tall Douglas-fir occur just above the HWM, south of the middle of the parcel. The parcel is sometimes used recreationally by unauthorized users as evidenced by fire rings and apparently at times, substantial amounts of refuse is left on site (pers, comm., Deborah Paynton, December 2016).

The HWM (natural boundary) of Slocan Lake was located below the entire length of the parcel. The HWM was clearly demarcated by relatively-freshly-deposited driftwood and a distinct drop in vegetation cover (Photo 2.3). There was an approximately 1m wide band of low density vegetation along (i.e., immediately below) the HWM.

Ecora measured six points within the property that are 15m perpendicular from the HWM to indicate the approximate location of the riparian setback. These points were marked on the ground.



Photo 2.1 View of beach comprised of cobble and boulder substrates with some gravel.



Photo 2.2 View of invasive species dominated parcel (looking north near centre of parcel, raised area in rear-ground is outside of property).



Photo 2.3 Evidence of HWM from rafted debris.

2.2 Aquatic Values

Due likely to the past industrial use of the waterfront, the Aquatic Habitat Index (AHI)² was assessed as moderate value (juvenile rearing potential is rated as low, with no staging, migration or coarse woody debris habitat features) adjacent to the subject parcel (FIM segment 14). The property is between the even more heavily impacted log dump (segment 15, very low AHI) to the west and the undisturbed segment 13 (AHI high) to the east.

3. Setback Assessment

For the purposes of the assessment, an overview riparian setback assessment was completed pursuant to the Riparian Areas Regulation (RAR) setback guidelines. A detailed RAR assessment was not completed and the HWM of Slokan Lake was determined in the field and mapped using best resolution Google Earth™ imagery available. Setbacks from Slokan Lake are determined relative to the HWM, also referred to as the natural boundary. As per the provincial RAR, Streamside Protection and Enhancement Area (SPEA) setbacks were determined using the Zones of Sensitivity (ZOS), defined as:

- Litter fall and insect drop (15 m setback);and
- Large woody debris, bank stability, and channel stability (15 m setback)
- Shade (30 m due south). The shade ZOS is not applicable to this parcel as the parcel and beach face south.

The setbacks used in this assessment are those for Treed (TR) site potential vegetation type (SPVT). At present, the parcel is dominated by low growing (<1.5m high) and species-poor vegetation.

² Slokan Lake Foreshore Fish and Wildlife Habitat Assessment including Foreshore Inventory and Mapping (FIM) and Aquatic Habitat Index (AHI). Galena Environmental Ltd. Report prepared for Slokan Lake Stewardship Society. May 2011.

The two ZOS setbacks were applied to the Property relative to the identified HWL on Figure 2.0. Based on the overview RAR process, the maximum setback for the Property is 15 m from the HWM which results in a SPEA area of approximately 0.034ha (0.83acre), leaving 0.040ha (0.099acre) of developable area within the subject parcel of the Property (roughly 10m by 30m area is developable).

4. Recommendations

Ecora provides the following recommendations for the future planning and development of the Property, including the management and protection of the riparian area and foreshore.

The results of the preliminary setback assessment indicate that conservation of the 15 m setback area (i.e., SPEA) determined using RAR protocol will provide a reasonable measure of protection of riparian and aquatic resources within the Property. The 15 m setback includes most of the trees found on the parcel.

The setback provided in this report is based on an interpretation of the HWL and does not constitute a legal survey

Sufficient area exists within the parcel outside the ZOS setbacks to allow the location/construction of the desired structures.

This assessment does not address any requirements that may be needed to obtain the required Industrial Development Permit.

At present habitat values are very low on the parcel, activities such as planting native trees and/or shrubs and controlling invasive species would increase the potential for litter fall and insect drop into the lake. Removal of non-native species should be a high priority. Restoration planting using native species will enhance the Property shoreline and improve habitat values and ecological integrity. Fencing of the property would prevent the site from being used as a refuse disposal site and would protect habitat values that may be enhanced.

5. Conclusion

This report provides a summary of the environmental assessment at 153 Rosebery Road within the Regional District of Central Kootenay. The results of the site visit observations and the preliminary setback assessment indicate that a riparian setback pursuant to the provincial Riparian Areas Regulation (RAR) would result in a 15 m setback from the Slocan Lake high water mark (HWM). This setback would result in a riparian zone (aka SPEA) of approximately 0.034ha to be conserved and allow 0.040ha of developable area. It is hoped that habitat enhancement activities in conjunction with development of the subject Property will lead to higher fish and wildlife habitat.

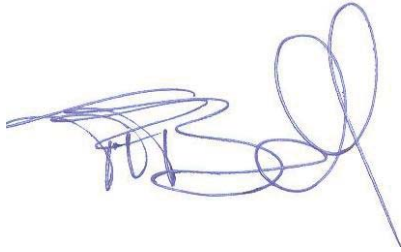
6. Closure

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Sincerely

Ecora Engineering &Resource Group Ltd.

Prepared by:



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Senior Ecologist
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Version Control and Revision History

Version	Date	Prepared By	Reviewed By	Notes/Revisions

References

BC Ministry of Environment (MOE). 2006. Best Management Practices for Lakeshore Stabilization. July, 2006.

Galena Environmental Ltd.). 2011. Slocan Lake Foreshore Fish & Wildlife Habitat Assessment Including Foreshore Inventory And Mapping (FIM) and Aquatic Habitat Index (AHI) report prepared for Slocan Lake Stewardship Society. May 2011.

Regional District of Central Kootenay (RDCK). 2009. Slocan Lake North Portion of Electoral Area 'H' Official Community Plan Bylaw No. 1967, 2009 Available: http://www.rdck.ca/assets/Government/Bylaws/Land~Use-Planning/1967_Hn_OCP.pdf

October 22, 2018

Ecora File No.: NK-18-416-PAD

Deborah and Wayne Paynton
PO BOX 201
Winlaw, BC V0G 2J0

Reference: Addendum to the Assessment for Watercourse Development Permit - Rosebery Shores Report Submitted to the Regional District of Central Kootenay (Revision 01)

1. Introduction

Ecora Engineering & Resource Group Ltd. (Ecora) was retained by Deborah and Wayne Paynton (Proponent) to complete an environmental assessment for proposed subdivision and development at 153 Rosebery Road (referred to as Rosebery Shores), in the Regional District of Central Kootenay (RDCK), BC (hereafter referred to as 'the Property'). The Property is legally described as Lot A, Plan NEP66984, District Lot 298, Kootenay Land District and DL 4877, PID: 024-803-120 (see site overview Figure 1.0). The Proponent previously submitted the December 2016 Ecora report entitled "Assessment for Watercourse Development Permit - Rosebery Shores" to the RDCK as part of the subdivision and Development Permit (DP) application in January, 2018.

Correspondence from the RDCK indicates that the development plans provided by the Proponent were unclear and were not consistent with the original assessment report. As such, this memo is intended to address the concerns of the RDCK, expressed in a June 27, 2018 correspondence and generally including:

- Development of an invasive plant management plan to guide restoration and/or enhancement activities within the riparian area;
- A site restoration plan showing proposed locations and extents of recommended riparian plantings, as well as suggested species, numbers, and sizes intended to improve riparian condition and ecological values; and
- A detailed site plan drawn to scale and showing the proposed locations of temporary structures, setbacks, restoration areas, and other development plans.

1.1 Scope of Work

This memo report was prepared based on the following scope of work.

- Complete a review of previously completed work, including the December 2016 report, figures, sketch plans, and correspondence from the RDCK;
- Development of a new site plan using GIS and incorporating details provided by the Proponent in AutoCAD format;
- Preparation of this memo report, including vegetation management plan and recommendations to guide site restoration and riparian enhancement. Assessment and reporting for permitting at the provincial level

(i.e., Section 11) for works below the high water level (HWL) of Slocan Lake (e.g., dock) were not considered part of the scope of this project.

2. Background and Proposed Works

The Property details are summarized in the December 2016 report, including a description of riparian, foreshore, and aquatic habitat values, as well as the results of the riparian setback assessment completed pursuant to the provincial Riparian Areas Regulation (RAR) guidelines. The report included recommendations regarding the removal of invasive species and the planting of native vegetation to improve habitat values and ecological integrity, especially within the prescribed setback area.

Ecora understands that the Proponent intends to place three (3) temporary structures on the subject portion of the Property and undertake vegetation management; including removal and control of invasive species and installation of native vegetation (see Figure 2.0). Ecora understands that each of the proposed structures will be approximately 10 feet by 10 feet in size or smaller (i.e., 300 square foot total maximum footprint) and will be constructed on grade with no foundation (e.g., no slab or concrete pad). The proposed structures include:

- A storage structure for kayaks (approximately 10 feet by 10 feet);
- A storage shed for supplies and equipment (approximately 10 feet by 10 feet); and
- A gazebo (approximately 10 feet by 10 feet).

The locations and relative size of each structure is shown on the attached Figure 2.0. The figure also shows the proposed location of each structure relative to the lake shoreline and setback area. All of the structures will be placed beyond (i.e., outside of) the prescribed riparian setback. Other proposed works include the installation of six inch diameter conduit below the surface grade of the railway (aka Galena Trail).

The Proponent's sketch diagram makes reference to a proposed future dock location but that will not be addressed by this memo. Future planning and development of the dock will be completed separately and must follow the relevant guidelines and legislation, including acquiring Crown Land tenure and dock construction approval under Section 11 of the *Water Sustainability Act* (WSA).

3. Recommendations

This section is intended to expand on the recommendations provided in the December 2016 report and provide clarification to the correspondence from the RDCK. The recommendations are meant to maintain consistency with municipal and regional guidance documents and provincial Best Management Practices (BMP), as described in *Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia* (2014). Ecora understands that there are no earthworks or vegetation clearing proposed at this time.

3.1 Protection of Work Limits

The disturbance footprint associated with the placement and/or construction of the proposed structures will be minimized through adherence to the protection measures outlined below. Unnecessary impacts to native vegetation and soils will be avoided at all times. Important wildlife habitat, including stick nests and other important features, will be identified and avoided prior to the initiation of activities.

- The historic CPR (Canada Pacific Railway) Right-of-Way (ROW) bisects the Property and forms the northern boundary of the subject portion of the Property. The ROW has been converted to a recreational trail that is owned and maintained by the province and is locally referred to as the Galena Trail.

- The Galena Trail ROW boundary must be clearly delineated in the field by a legal land surveyor and fencing must be installed to ensure protection of the boundary.
- Construction activities and equipment access must avoid the ROW except for movement across the ROW at the current access road-point. The conduit will be installed by open trench excavation and the ROW trail surface will be replaced back to original condition. The ROW surface must not be damaged or degraded by the construction works.
- The Proponent must ensure that the crossing is protected from damage by whatever means necessary as determined by the activity over the crossing (e.g., rig matting or equivalent measures).
- Temporary fencing (e.g., silt or snow) will be used to clearly delineate the riparian setback prior to the commencement of works. Fencing will also be used to clearly identify setbacks and buffers associated with identified environmentally sensitive areas. The fencing must remain in place and be maintained, repaired, or replaced as necessary to ensure it functions as intended.
- Vehicles and equipment will be operated or stored within the project limits and outside of the identified riparian setback boundary. All stockpiles and storage of other materials will occur within the construction limits.

3.2 Site Preparation and Soil Management

Erosion and sediment control (ESC) measures must be in place and functioning as required prior to the initiation of development activities. All mitigation measures must be maintained, repaired, replaced, or otherwise adapted as necessary to ensure appropriate protection of the natural environment.

- Site access will be from Rosebery Road via Highway 6. The ROW will be crossed from the northern portion of the Property to access the isolated elliptical-shaped portion to the south.
- Ecora understands that the subject portion of the Property has previously been cleared of vegetation and is currently dominated by herbaceous and weedy vegetation, with scattered shrubs. There are no plans to remove additional vegetation at this time.
- Staging, parking, storing of equipment, and stockpiling of materials must be within the Property boundary and outside of the riparian setback area.

3.3 Erosion and Sediment Control

The following Erosion and Sediment Control Plan (ESCP) provides mitigation measures that must be followed during construction and other development activities to protect environmentally sensitive habitats.

- The ESCP will be followed as required to mitigate risks throughout construction works. The plan is based upon provincial BMPs and other specifications and includes the following principles:
 - Where possible, construction works will be conducted during periods of dry weather with no forecasted precipitation;
 - Activities resulting in ground disturbance will not be conducted during periods of prolonged or heavy rain;
 - Natural drainage patterns will be maintained;
 - Existing native vegetation and topsoil will be retained;

- Stormwater will be directed away from exposed soils;
 - Sediment-laden water will be contained onsite and will not be directed to Slocan Lake or any surface water feature or other drainage system; and
 - Other erosion and sediment control measures will be implemented, inspected, maintained, and/or replaced as required to provide appropriate mitigation.
- The implementation of mitigation measures will be documented and provided to the RDCK. The Proponent will be responsible for inspecting the erosion control mitigation measures and ensuring that additional measures are installed, maintained, and repaired or replaced as required to maintain effectiveness.
 - Silt fence will be installed along the approximate SPEA boundary, as depicted on the site plan (Figure 2.0). Silt fencing will be staked into the ground and trenched a minimum of 10 cm to prevent flow underneath the fence, as per the manufacturer's specifications. Silt fencing will be inspected by the Proponent and any damages or areas where the integrity and function of the fencing have been compromised will be repaired or replaced promptly. Silt fence must remain in place until the completion of the project.
 - The release of silt, sediment, sediment-laden water, or any other deleterious substances into Slocan Lake or any ditch, watercourse, ravine, or other surface drainage feature must be prevented at all times.

3.4 Invasive Species Management

As part of the restoration of the site and prevention of ecological degradation, a noxious weed management plan is provided below. The intent of the weed management plan is to reduce the potential to spread noxious weeds within or beyond the Property. In general, invasive species must not be introduced to the Property and invasive species already present must be removed to prevent spread.

- The basic principles of the weed management plan include:
 - Suppression of weed growth;
 - Prevention or suppression of weed seed production;
 - Reduction of weed seed reserves in the soil; and
 - Prevention or reduction of weed spread.
- Weed species of concern identified on the Property during the original assessment include knapweed, clover, and bluegrass. There are biological controls available for knapweed and infestations of these species have been declining over the past decade (<https://www.for.gov.bc.ca/hra/plants/plantsInfo.htm>). It is recommended that the Property owner consult with the province to determine if the Property is a candidate site for the distribution of this bio-control.
- Clover and bluegrass are not considered aggressive or noxious invasive species and can be controlled with routine pulling or mowing. These species will likely give way to suitable native species with an appropriate plan for planting, maintenance, and monitoring. Ecora recommends that the Property owner complete routine mowing of these weeds until the prescribed restoration measures (described further below) have become established.
- Other non-native or invasive species observed onsite can be controlled with regular hand-pulling. Plants should be removed prior to the flowering and/or seed development stage. Plants should be bagged and disposed of at an appropriate landfill facility.

- Equipment and vehicles should be washed and free of weed seeds prior to mobilization and demobilization to the Property. Vehicles and equipment will not be stored, parked, or staged within weed infested areas.

3.5 Site Restoration

Site cleanup and restoration refers to activities used to return disturbed areas within the project site to a state resembling the original habitat characteristics. Protection of existing ecosystems is generally much more efficient than ecosystem enhancement and restoration following construction. The following recommendations are intended to enhance the existing condition of the riparian community.

- A native grass seed mix will be applied to the restoration area shown on Figure 2.0. A hydroseed mix with tackifier and mulch is recommended but given the small area, a suitable dry seed mix broadcast by hand is considered suitable. A minimum application rate of 45 kg/ha is recommended. Given the recommended restoration area is less than 0.04 ha (400 m²), a 2 kg bag of grass seed would be sufficient to seed the area.
- The grass seed mix must be certified as Canada #1 Grade by Agriculture Canada to minimize the weed seed count. The seed mixture will include native species appropriate for the ecological conditions and will be reviewed and approved by the RDCK prior to application. An example of a suitable mix is provided below:
 - 15-25 %
 - Slender Wheatgrass (*Elymus trachycaulus*)
 - Rocky Mountain/Alpine Fescue (*Festuca saximontana*)
 - Bluejoint Reedgrass (*Calamagrostis canadensis*)
 - Tufted Hairgrass (*Deschampsia cespitosa*)
 - 5-15%
 - Pinegrass (*Calamagrostis rubescens*)
 - Canada Wildrye (*Elymus canadensis*)
 - Blue Wildrye (*Elymus glaucus*)
 - 1-5%
 - Junegrass (*Koeleria macrantha*)
 - Fowl Bluegrass (*Poa palustris*)
 - Fringe Bromegrass (*Bromus ciliates*)
- Native vegetation will also be installed in the areas shown on Figure 2. These will include a mix of trees, shrubs, and groundcover vegetation suitable for the site conditions and the ecological setting. Recommended species, sizes, and numbers are provided below. Changes or substitutions to proposed species, sizes, and numbers must be reviewed and approved by the RDCK.

Type	Common Name	Latin Name	Size	Number
Tree	interior Douglas-fir	<i>Pseudotsuga menziesii</i>	#5	3
Shrub	common snowberry	<i>Symphoricarpos albus</i>	#2	7
	Nootka rose	<i>Rosa nutkana</i>	#2	5
	tall Oregon-grape	<i>Mahonia aquifolium</i>	#2	5
Groundcover	kinnikinnick	<i>Arctostaphylos uva-ursi</i>	4"/plug	10
	wild strawberry	<i>Fragaria virginiana</i>	4"/plug	10
	yarrow	<i>Achillea millefolium</i>	4"/plug	10
			Total	50

- Native plants may require ongoing maintenance (i.e., watering, weeding, fertilizing, etc.) depending on the local conditions and timing of planting. The late summer to early fall period provides optimal conditions for planting due to the cool temperatures and increased likelihood of precipitation. Fall planting will also provide the plants with time to become established over the winter which will improve survivability during future periods of heat and drought.
- Shrubs should be spaced approximately 3 m apart (on centre). In other words, each plant will have an approximately 1.5 m radius surrounding it and occupies approximately 7 m². Trees can be spaced further apart, with an approximate radius of 2.5 m around each plant (i.e., occupies approximately 20 m²). Ground cover plants should be distributed throughout the restoration area, as shown on Figure 2.
- Given the total proposed restoration area of 370 m², Ecora recommends installing 50 plants, including 3 coniferous trees, 17 shrubs, and 30 groundcover plants. Plants should be installed in clusters rather than evenly distributed or in a grid-like pattern. Where possible, plant clusters should be installed within suitable microsites (e.g., moisture-receiving areas) or around features such as logs, surface drainages, slope breaks, etc.
- Plants must be obtained from a reputable nursery that grows plants from indigenous stock. The planting works must be completed by a suitably qualified landscape or restoration contractor with knowledge and experience related to the selection and installation of native plants. Changes to the relative numbers or species substitutions must be reviewed and approved by the RDCK.
- Given the nature of the existing soils, amendment products such as topsoil, compost, and/or mulch should be incorporated into the plantings to reduce the need for maintenance and increase the likelihood of survivability.
- Silt fencing and other temporary mitigation features will be removed upon substantial completion of works as long as the risk of surface erosion and sediment transport has been adequately mitigated with other permanent measures.
- All equipment, supplies, waste, and other non-biodegradable materials will be removed from the site by the contractor.

4. Closure

We trust this information meets your present requirements. If you have any questions or comments, please contact the undersigned.

Sincerely

Ecora Engineering & Resource Group Ltd.

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Reviewed by:



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Version Control and Revision History

Version	Date	Prepared By	Reviewed By	Notes/Revisions
A	August 27, 2018	AP	SH	final draft for client review
0	August 28, 2018	AP	SH	final
1	October 22, 2018	AP		revision

Attachments: Figure 1.0 Site Location
Figure 2.0 Site Plan

Figures

Figure 1.0 Site Location

Figure 2.0 Site Plan

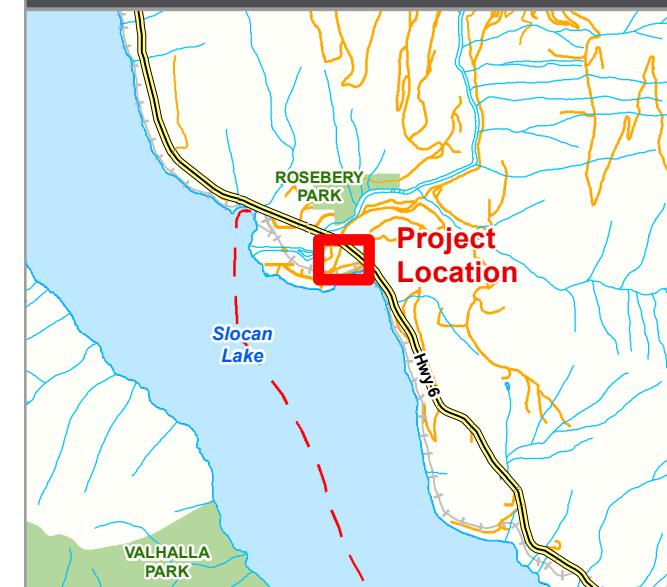
OVERVIEW MAP

ENVIRONMENTAL ASSESSMENT 153 ROSEBERY ROAD NEW DENVER, BC

Legend

- Fresh Water Atlas Streams
- Digital Atlas Roads
- TRIM Contour Lines
- Legal Parcels
- Proposed Lot Layout
- Property Boundary

LOCATION MAP



1:1,500



Project No.: NK-18-416-PAD
Client: Deborah Paynton

Date: 2018/08/28
Drawn: JS Check: DT

NAD 1983 UTM Zone 11N

Figure 1.0

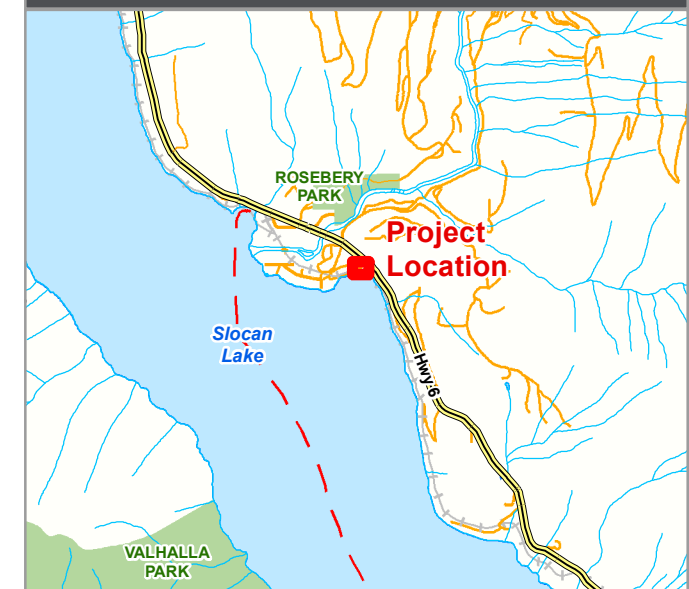


ENVIRONMENTAL ASSESSMENT 153 ROSEBERY ROAD NEW DENVER, BC

Legend

- | | |
|---|----------------------------------|
| Trees | 15m Setback |
| 2016 Field Assessed High Water Mark - Slocan Lake | Beach Storage |
| Digital Road | Gazebo |
| TRIM Contour Lines | Kayak Storage |
| Legal Parcels | 6" Conduit for Future Water Line |
| Proposed Lot Layout | Existing Road |
| Property Boundary | Restoration Area |
| | Herbs & Grass Seed |
| | Trees, Shrubs, & Grass Seed |

LOCATION MAP



1:500



Project No.: NK-18-416-PAD
Client: Deborah Paynton

Date: 2018/10/23
Drawn: JS Check: DT

NAD 1983 UTM Zone 11N

Figure 2.0



471140 471170 471200 471230 471260

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