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May 11, 2022

Michael Shapray
2811 Colamont Road
Tulameen, BC
V0X 2L0
Phone: 604-725-4300
Email: mshapray@gmail.com

Dear Mr. Shapray,

RE: Riparian Setback Assessment for 2811 Coalmont Road, Tulameen, BC.

Madrone Environmental Services Ltd. ('Madrone') completed a preliminary assessment of the Otter Lake foreshore at 2811 Coalmont Road, Tulameen, B.C. (the 'Property') on behalf of the landowner. The purpose of this assessment was to inform a buildable envelope of the Property pertaining to the environmental and Streamside Protection and Enhancement Area (SPEA) setbacks in accordance with the *Riparian Areas Protection Regulation* ('RAPR')¹. The assessment was carried out as per the Regional District of Okanagan-Similkameen (RDOS) *Official Community Plan Bylaw No. 2497, 2012* (the 'Bylaw')² and the RAPR. Please note that this letter and enclosed map are not sufficient reporting to use in a Development Permit Application with the RDOS; this assessment was conducted only for the purpose of understanding the setbacks and for preliminary planning of potential future developments.

Madrone biologists evaluated the Property on May 5, 2022 to perform a watercourse assessment under the Detailed Assessment methodology of RAPR to inform SPEA setbacks on the Property as per Section 7.5.12 of the Bylaw. The results of this assessment confirmed that Otter Lake is the only watercourse on the Property subject to provincial and regional district considerations. Setbacks for the watercourse are calculated in accordance with RAPR.

¹ Riparian Areas Protection Regulation

<https://www.canlii.org/en/bc/laws/regu/bc-reg-178-2019/latest/bc-reg-178-2019.html>

² Regional District of Okanagan-Similkameen Electoral Area "H" Official Community Plan

<https://www.rdos.bc.ca/assets/bylaws/planning/AreaH/2497-A.pdf>

Site Description

The Property is approximately 0.14 hectares, zoned as Residential Single Family One (RS-1) by the RDOS¹. The lot is bordered to the west by Coalmont Road, to the east by Otter Lake, and to the north and south by additional RS-1 properties. A paved driveway extends from Coalmont Road into the Property through a landscaped walkway toward the existing home and storage garage. A concrete pad is present between the residential home and Coalmont Road. A wooden fence exists around the north, south, and western property line. The residential home backs onto the shoreline of Otter Lake on its eastern side, with a staircase descending onto the beach. The remainder of the shoreline is comprised of riprap, landscaping, and beach.

The Property contains vegetation that is typically found within the Okanagan Very Dry Hot Interior (IDFxh2) biogeoclimatic zone, such as Douglas fir (*Pseudotsuga menziesii*) and Ponderosa pine (*Pinus ponderosa*), red-osier dogwood (*Cornus sericea*), oregon grape (*Mahonia aquifolium*), and prickly rose (*Rosa acicularis*). Most of these species were present within the riparian area on the Property.

Otter Lake is supplied by various stream tributaries from neighbouring mountain ranges within the area and by upstream Frembd Lake and Otter Creek. It is known to be a fish-bearing lake containing species such as rainbow trout (*Oncorhynchus mykiss*) and largescale sucker (*Catostomus macrocheilus*)³. Common Loon (*Gavia immer*) were observed during the assessment.

Various small mammal species were also observed on the Property amongst the vegetation and structures such as ground squirrels (*Uroditellus* sp.) and chipmunks (*Tamias* sp.).

Streamside Protection and Enhancement Area

Otter Lake has an applicable SPEA that applies to development on the Property. SPEA calculations are based on the scientific methodology determined by RAPR. Watercourses are awarded a SPEA (setback) based on riparian conditions in the area and the watercourse features itself, such as vegetation nearby and watercourse size.

The SPEA is determined by the largest Zone of Sensitivity (ZOS) that applies to that watercourse. The three ZOS's that determine a SPEA setback is the riparian area's ability to provide large woody debris/bank stability, litter fall/insect drop, and shade to the watercourse. Each ZOS represents a setback distance from the Natural Boundary (NB), or high water mark, from the watercourse, in this case Otter Lake. The largest ZOS determines the SPEA for that specific watercourse.

³ Otter Lake – Lake Report

https://a100.gov.bc.ca/pub/reports/rwservlet?habitat_wizard_lakes_report&p_title=%22Ministry%20of%20Environment%22&P_LAKE_ID=333272

Based on the site potential vegetation type of the riparian area of Otter Lake, the ZOS for large woody debris/bank stability is 15 m. Similarly, the ZOS for litter fall/insect drop is also 15 m. The shade ZOS for this property is 0 m due to the property orientation. This results in a 15 m ZOS and thus a 15 m SPEA and setback horizontally from the NB of Otter Lake.

The NB of Otter Lake was identified and flagged on the Property during the assessment. If development is planned to occur on the Property, a professional land surveyor must be retained to perform a surveyed assessment of the identified NB to determine the onsite SPEA measured horizontally from its identified location.

Figure 1 outlines the approximate buildable envelope on the Property with considerations for SPEA setbacks and the approximate location of the NB of Otter Lake.



PROJECT: Riparian Assessment – 2811 Coalmont Road	LOCATION: Tulameen, BC	CLIENT: Michael Shapray	DOSSIER: 22.0127
ASSESSED BY: Richard Borthwick M.Sc., R.P.Bio. & Austin Lymburner B.Sc., B.I.T.	FIELD VISIT: May 5th, 2022	MAP SCALE: 1:350	MAPPING DATE: May 11, 2022
			DRAWN BY: Alyssa Etherington



Figure 1: Riparian Assessment and Streamside Protection and Enhancement Area for 2811 Coalmont Road, Tulameen, BC.



LEGEND

- Property Boundary
- Parcel Boundary
- Otter Lake (Natural Boundary)
- Riparian Assessment Area (30m)
- Buildable Area (849m²)
- Maximum SPEA (15m)
- Zones of Sensitivity
 - Shade (N/A)
 - Large Woody Debris (15m)
 - Insect Drop / Litterfall (15m)

0 5.5 11 16.5 m

All features on this map are approximate. Features measured in the field were located using a handheld GPS and accuracy can only be guaranteed to 15m

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Closure

One watercourse, Otter Lake, was determined to have an applicable SPEA on the Property. Otter Lake receives a 15 m SPEA setback measured horizontally from the Natural Boundary, in accordance with RAPR and conforming to the RDOS setback requirements.

An approximate developable area of 849 m² exists on the Property with considerations for Otter Lake riparian setbacks.

No environmental constraints were identified along the western property boundary. Because of the setback on the Property, new developments may require the calculation of an undue hardship, or a negotiated variance in property easements with the RDOS in order to preserve the ecological integrity of the Otter Lake Foreshore. A large proportion of the Property remains undevelopable (~551 m²) based on RAPR.

Yours truly,

MADRONE ENVIRONMENTAL SERVICES LTD.

Reviewed by:

**This is a digitally signed duplicate of the official manually signed and sealed document*

Richard Borthwick



Richard Borthwick
Ph.D. Candidate, R.P.Bio
Senior Biologist



APPENDIX I

Site Photos



PHOTO 1: LOOKING SOUTHWEST AT WALKWAY INTO PROPERTY AND STORAGE GARAGE.



PHOTO 2: LOOKING SOUTHWEST AT RESIDENTIAL HOME FROM SHORELINE OF OTTER LAKE.



PHOTO 3: LOOKING SOUTH AT OTTER LAKE SHORELINE.



PHOTO 4: LOOKING NORTH AT OTTER LAKE SHORELINE.



PHOTO 5: LOOKING NORTH AT NORTHERN SHORELINE PROPERTY BORDER.



PHOTO 6: LOOKING EAST AT OTTER LAKE FROM SHORELINE.