



Development Permit Application

Referral Form – RDCK File DP2606D

Date: May 13, 2026

You are requested to comment on the attached DEVELOPMENT PERMIT for potential effect on your agency's interests. We would appreciate your response WITHIN 30 DAYS (PRIOR TO JUNE 13, 2026). If no response is received within that time, it will be assumed that your agency's interests are unaffected.

LEGAL DESCRIPTION & GENERAL LOCATION:

5 Murphy Lower Road, Murphy Creek, Electoral Area 'D'
 LOT 1 DISTRICT LOT 12417 KOOTENAY DISTRICT PLAN NEP66900 (SEE PLAN AS TO LIMITED ACCESS)
 024-793-132

PRESENT USE AND PURPOSE OF PERMIT REQUESTED:

The subject property is located on the east side of Kootenay Lake in Murphy Creek. It is boat access only, with no road connecting the neighboring Murphy Creek community. The Property is 54 acres in size, has a western aspect, and is bordered by the Purcell Wilderness Conservancy Park to the north, Crown land to the east and Clute Creek to the south.

This Watercourse Development Permit (WDP) application has been submitted in response to the property owner's unauthorized disturbance and construction of various buildings within the 30m watercourse development permit area (WDPA).

AREA OF PROPERTY	ALR STATUS	ZONING	OCP
54.11 ha	N/A	N/A	Rural Residential (RR) Electoral Area 'D' Comprehensive Land Use Bylaw No. 2435, 2016

APPLICANT: Camille Baker, Derek Baker and Tanya Momtazian

Please provide your response via email.

If your agency's interests are 'Unaffected' no further information is necessary. In all other cases, we would appreciate receiving additional information to substantiate your position and, if necessary, outline any conditions related to your position. Please note any legislation or official government policy which would affect our consideration of this permit.

If you are an RDCK commission member, do not respond via email. Your response is the commission's recommendation which staff will collect from the meeting minutes.

<input checked="" type="checkbox"/> MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE <input checked="" type="checkbox"/> HABITAT BRANCH (Environment) <input checked="" type="checkbox"/> FRONTCOUNTER BC (MFLNRORD) <input type="checkbox"/> AGRICULTURAL LAND COMMISSION <input type="checkbox"/> REGIONAL AGROLOGIST <input type="checkbox"/> ENERGY & MINES <input type="checkbox"/> MUNICIPAL AFFAIRS & HOUSING <input checked="" type="checkbox"/> INTERIOR HEALTH, HBE TEAM <input type="checkbox"/> SCHOOL DISTRICT NO. <input type="checkbox"/> WATER SYSTEM OR IRRIGATION DISTRICT	REGIONAL DISTRICT OF CENTRAL KOOTENAY DIRECTORS FOR: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> H <input type="checkbox"/> I <input type="checkbox"/> J <input type="checkbox"/> K ALTERNATIVE DIRECTORS FOR: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> H <input type="checkbox"/> I <input type="checkbox"/> J <input type="checkbox"/> K <input checked="" type="checkbox"/> APHC AREA D <input checked="" type="checkbox"/> RDCK FIRE SERVICES <input checked="" type="checkbox"/> RDCK EMERGENCY SERVICES <input checked="" type="checkbox"/> RDCK BUILDING SERVICES <input type="checkbox"/> RDCK UTILITY SERVICES <input type="checkbox"/> RDCK RESOURCE RECOVERY
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<input type="checkbox"/> ARCHAEOLOGY BRANCH	<input type="checkbox"/> RDCK REGIONAL PARKS
<input checked="" type="checkbox"/> UTILITIES (FORTIS, BC HYDRO, NELSON HYDRO, COLUMBIA POWER)	<input checked="" type="checkbox"/> KTUNAXA NATION COUNCIL

The personal information on this form is being collected pursuant to *Regional District of Central Kootenay Planning Procedures and Fees Bylaw No. 2457, 2015* for the purpose of determining whether the application will affect the interests of other agencies or adjacent property owners. The collection, use and disclosure of personal information are subject to the provisions of FIPPA. Any submissions made are considered a public record for the purposes of this application. Only personal contact information will be removed. If you have any questions about the collection of your personal information, contact the Regional District Privacy Officer at 250.352.6665 (toll free 1.800.268.7325), info@rdck.bc.ca, or RDCK Privacy Officer, Box 590, 202 Lakeside Drive, Nelson, BC V1L 5R4.

RETURN TO: SADIE CHEZENKO, PLANNER
DEVELOPMENT AND COMMUNITY SUSTAINABILITY SERVICES
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RDCK Map




Earthstar Geographics



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Legend

- Place Names
-  Electoral Areas

Map Scale:

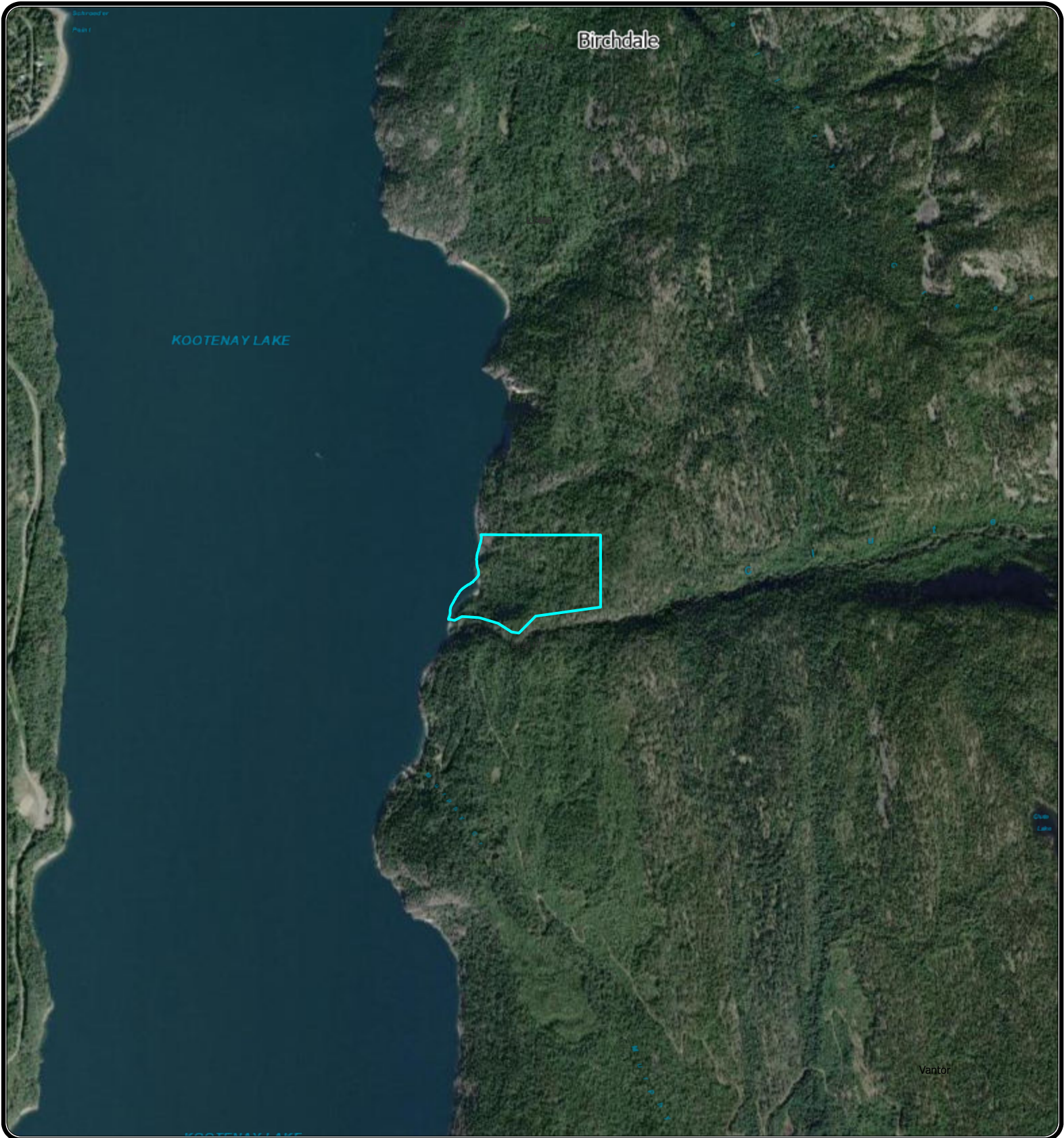
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Date: April 24, 2026




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Legend

- Place Names
-  Electoral Areas

Map Scale:

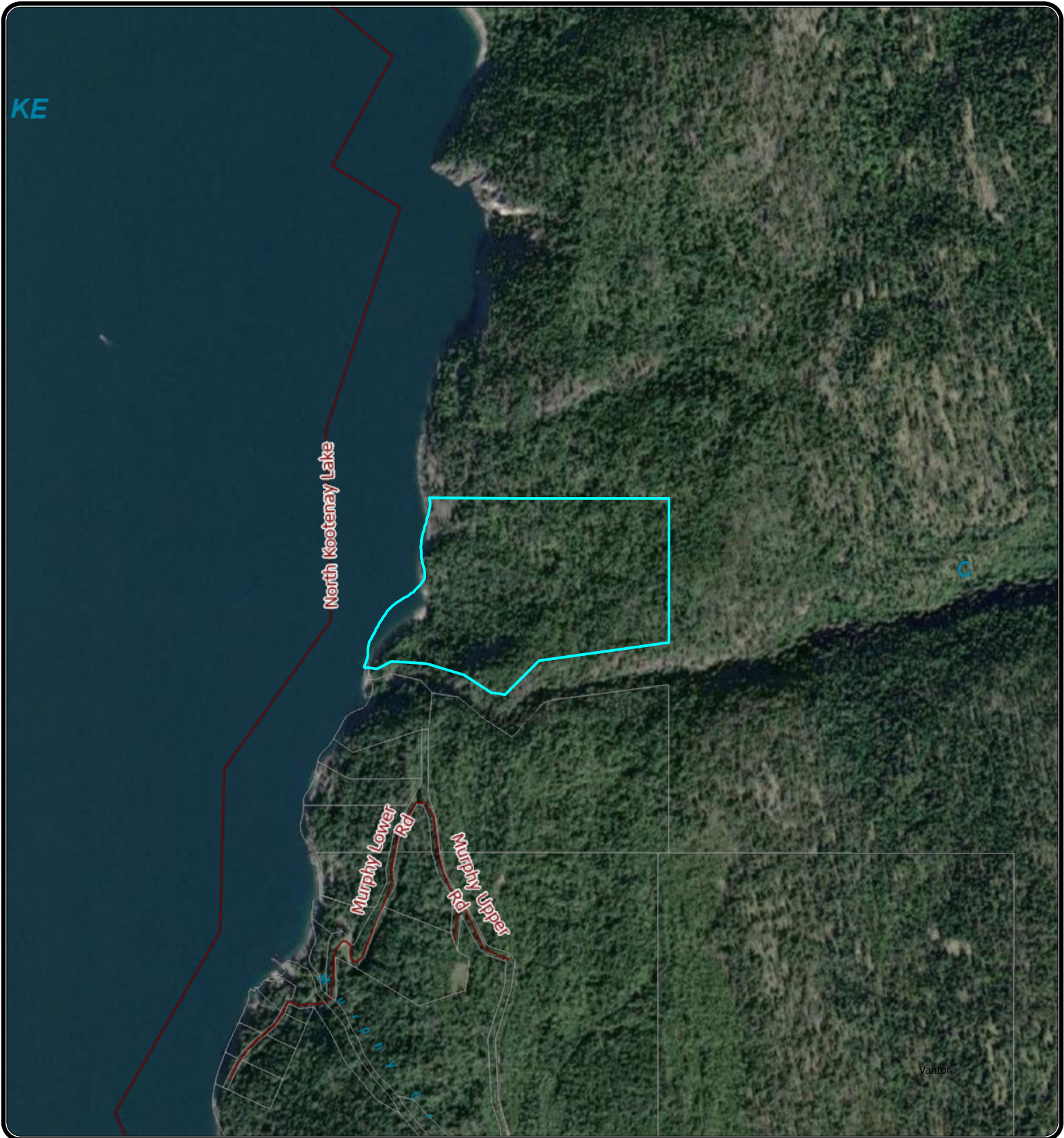
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Legend

-  Electoral Areas
-  RDCK Streets
-  Cadastre - Property Lines

Map Scale:

1:18,056

Date: April 24, 2026







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Legend

-  Electoral Areas
-  RDCK Streets
-  Cadastre - Property Lines
-  Address Points

Map Scale:

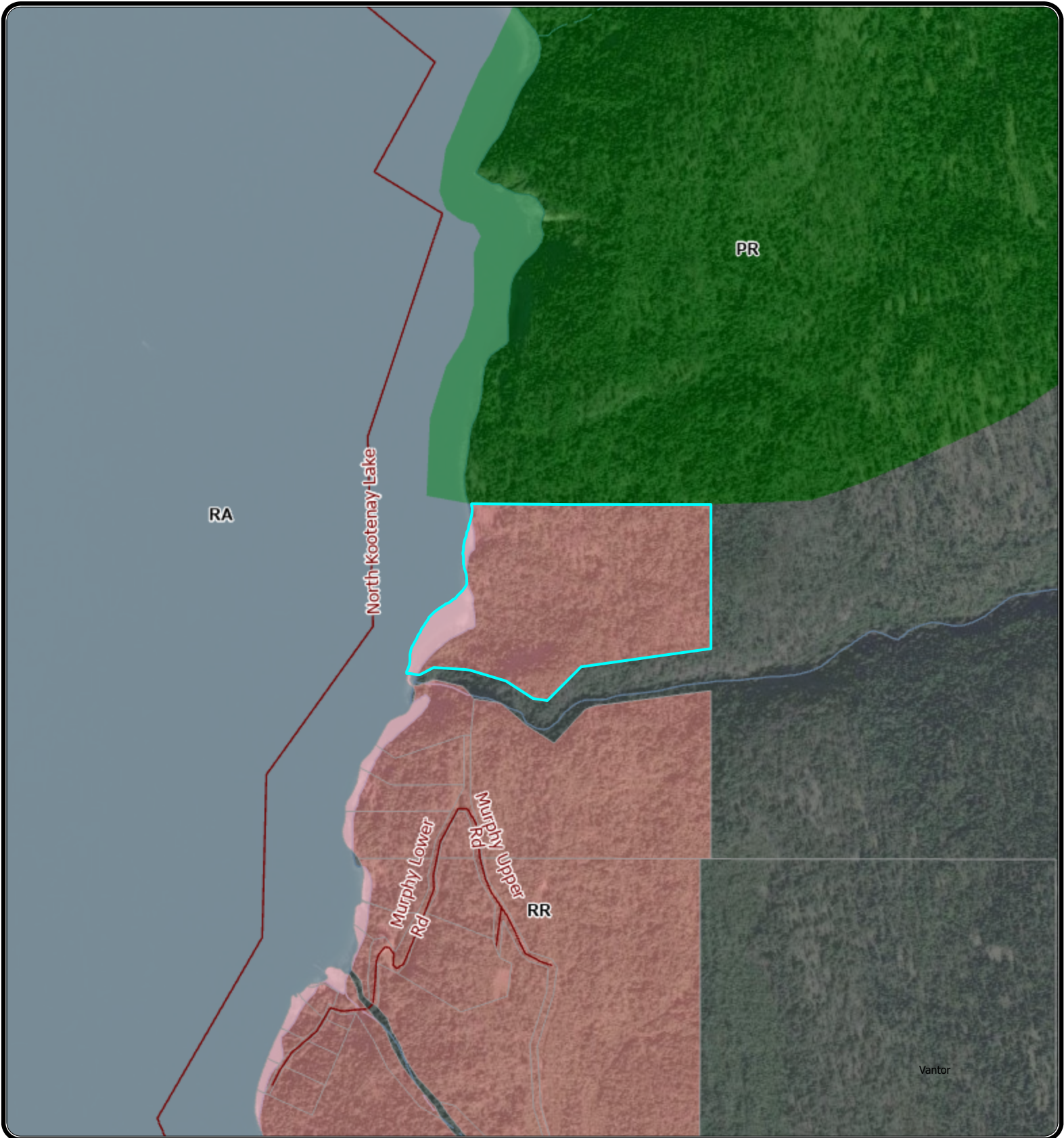
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Official Community Plan

- Agriculture
- Parks and Recreation
- Resource Area
- Rural Residential

Legend

- Lakes and Rivers
- Streams and Shorelines
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines

Map Scale:

1:18,056

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Legend

- Lakes and Rivers
- Streams and Shorelines
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines
- Watercourse
- Address Points

Development Permit Areas

Map Scale:

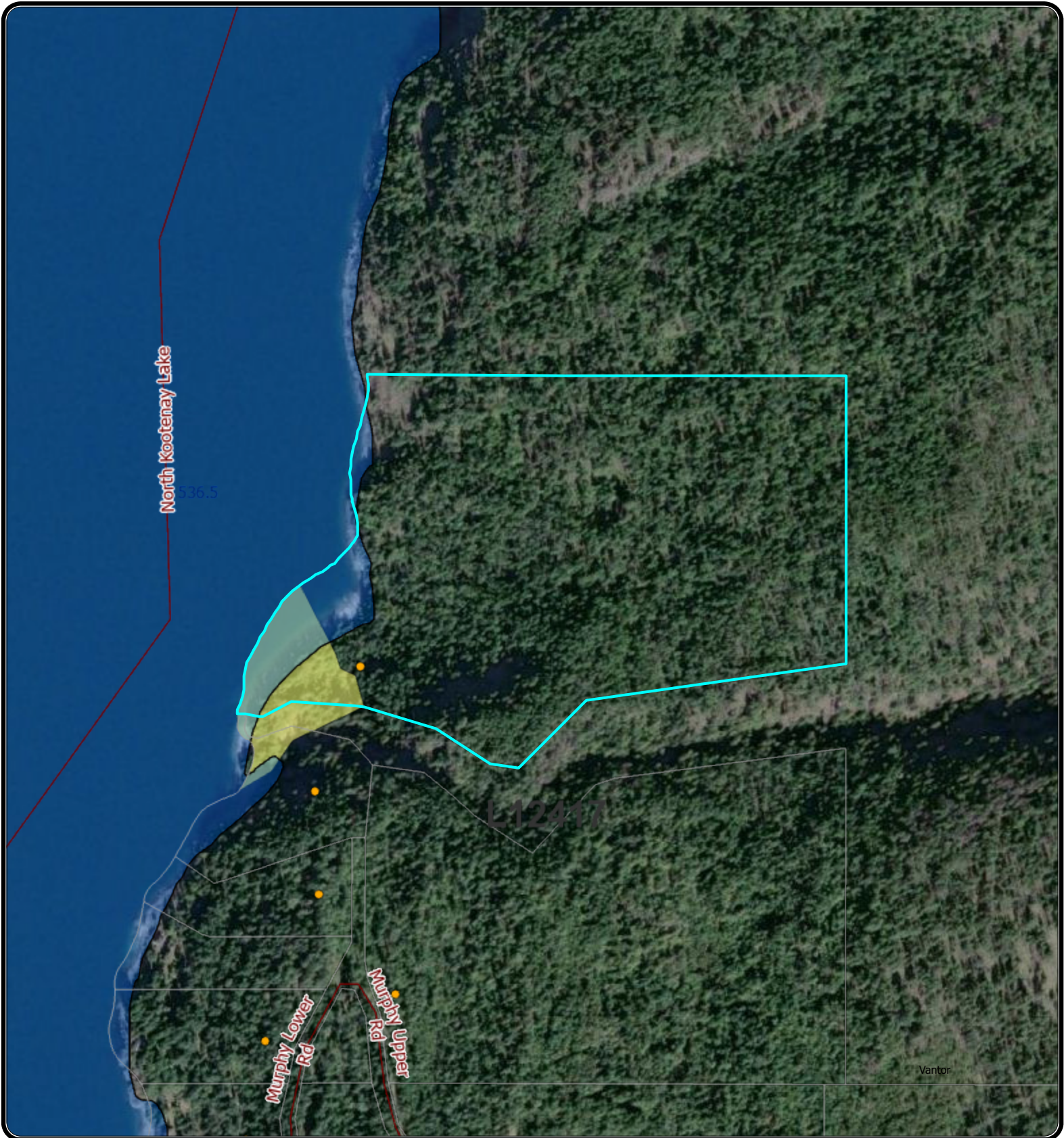
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Legend

- Non Standard Flooding Erosion Area
- Flood Construction Levels - 1990
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines
- Address Points

Map Scale:

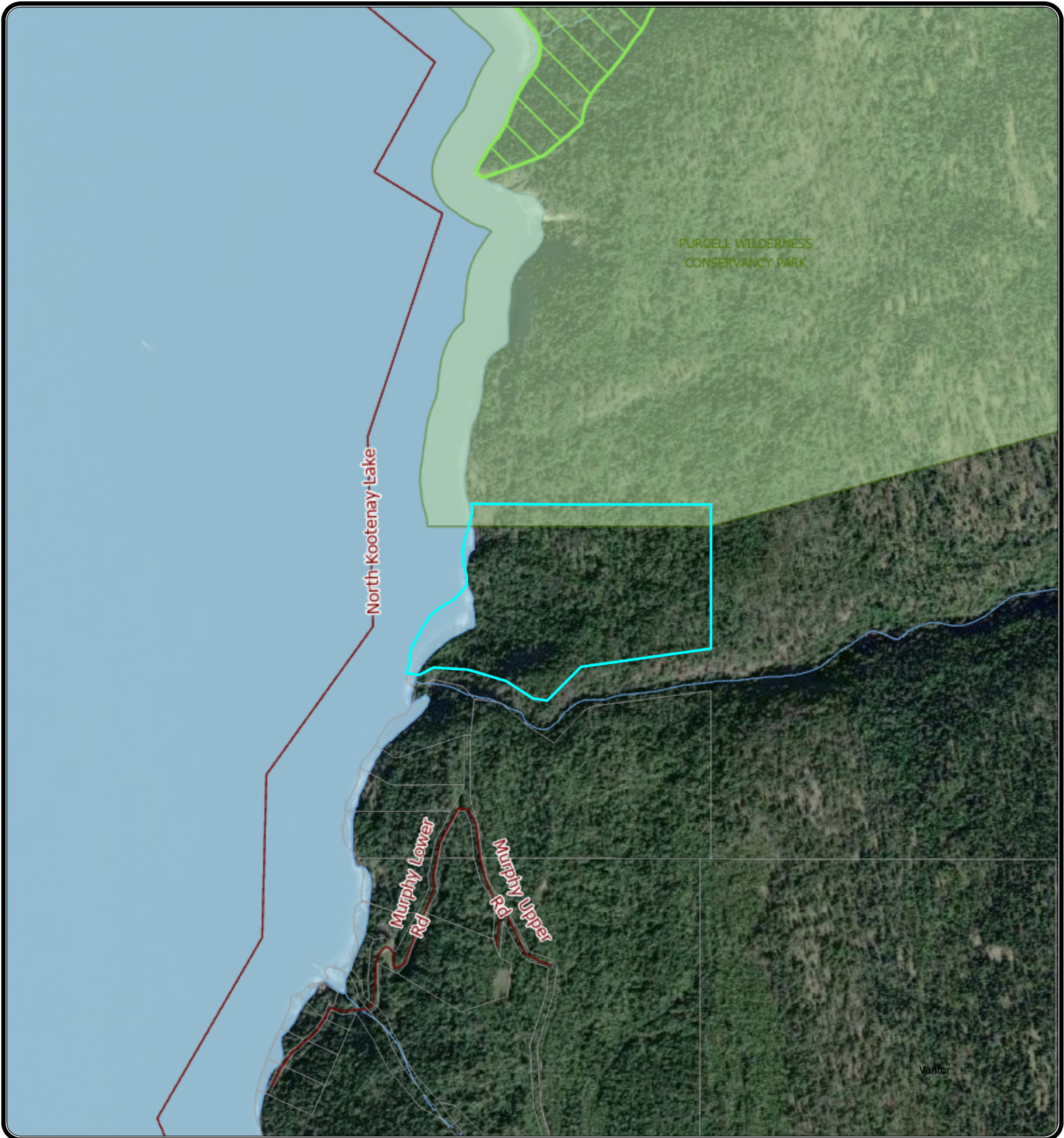
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Legend

- Parks and Rec
- Lakes and Rivers
- Streams and Shorelines
- Agriculture Land Reserve
- Electoral Areas
- RDCK Streets
- Cadastre - Property Lines

Map Scale:

1:18,056

Date: April 24, 2026



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5 Murphy Lower Rd, Murphy Creek, BC Riparian Assessment



Prepared for:

Camille and Derek Baker

5 Murphy Lower Rd

Murphy Creek, BC

March 31 2026

5 Murphy Lower Road – Riparian Assessment

Prepared by:
Masse Environmental Consultants
812 Vernon Street
Nelson, BC, V1L 4G4

Project Number 2025-1245

Disclosure Statement

This report has been prepared by Amber Warkentin ATAg. and Ico de Zwart, RPBio.

1. The authors are Qualified Environmental Professionals as defined under Section 21(2) of the Riparian Areas Protection Regulation,
2. The content of, and all associated statements in, this report are consistent with:
 - a. The Riparian Areas Protection Regulation methodology.
 - b. Provincial and federally recognised best management practises.
 - c. Relevant Species at Risk management Plans under the Species at Risk Act.
 - d. The habitat protection provisions of the Fisheries Act
3. This report has been prepared for the property owner to support a development permit approval.
4. The report has been prepared for Camille and Derek Baker at their expense. The RDCK may rely upon the information and recommendations in this report for the purposes of a Watercourse Development Permit Area application.

Limitations

This report has been prepared by the authors solely for the clients, Camille and Derek Baker. The content reflects the authors' professional judgment based on the information available at the time of preparation. Any use, reliance, or decisions made by third parties based on this report are solely at their own risk. The authors assume no liability for any damages, losses, or consequences arising from actions or decisions taken by third parties in reliance on this report. A record copy of this report is maintained at Masse Environmental and is considered the official version, superseding any copies or reproductions of the report.

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Appendix 1. Site Plan

1 INTRODUCTION

Masse Environmental Consultants Ltd. was retained by Camille and Derek Baker (Owners) to conduct a riparian assessment on their property at 5 Murphy Lower Road, Murphy Creek, BC (Lot 1 Plan NEP66900 District Lot 12417, PID 024-793-132). The assessment is part of the Owner's response to Do Not Occupy and Stop Work Orders filed by the Regional District of Central Kootenay (RDCK; dated September 16, 2025) on a cottage, lumber shed, white tent cabin, and sauna, due to a complaint alleging that a building was constructed without a building permit.

A site visit was completed on October 16th, 2025, by Amber Warkentin (ATAg) and Heather Shaw (RPBio). The scope of the assessment focussed on the area where the existing development has occurred, which is adjacent to Kootenay Lake and Clute Creek in the southwestern corner of the property. The assessment evaluates the current condition within the 30 m Watercourse Development Permit (WDP) Area, determines the Streamside Protection and Enhancement Area (SPEA) setback following the methodology of the Riparian Area Protection Regulation (RAPR; BC 2019), and identifies potential environmental impacts from the development. It is based on the following regulatory framework and best management practices documents, including:

- Electoral Area 'D' Comprehensive Land Use Bylaw 2435, 2016.
- RDCK Draft Standard Terms of Reference for Riparian Assessment Reports (RDCK n.d).
- Kootenay Lake Shoreline Management Guidelines (KLP 2020).
- British Columbia Riparian Areas Protection Regulation (BC 2019).
- British Columbia Water Sustainability Act (BC 2014).
- Natural Resources Best Management Practices (BC 2025)

2 PROJECT OVERVIEW

2.1 Site Description

2.1.1 Location

The subject Property is located in Murphy Creek, BC, along the eastern shore of Kootenay Lake. It is 'boat access' only, with no road connecting the neighboring Murphy Creek community. The Property is 54 acres in size, has a western aspect, and is bordered by the Purcell Wilderness Conservancy Park to the north, Crown land to the east, Clute Creek to the south and Kootenay Lake to the west (Figure 1).

5 Murphy Lower Road – Riparian Assessment

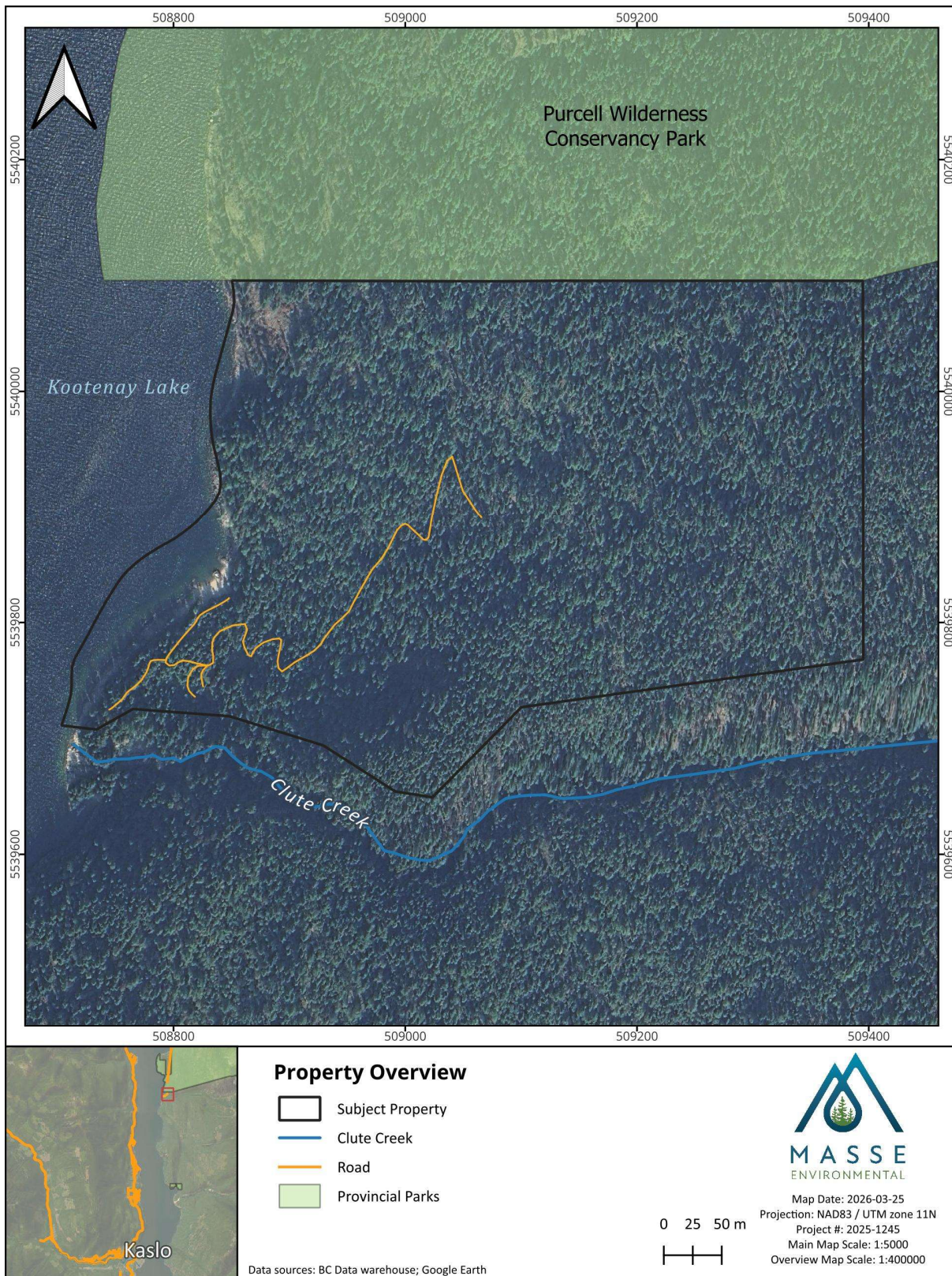


Figure 1. Location of subject property.

5 Murphy Lower Road – Riparian Assessment

2.1.2 Existing Development

The Property was purchased by the Owners in 2000, who have built a main house, the cottage, and other various sheds/structures on the property. The Property is heavily forested and aerial photo review of the property from 2003 to present date shows that minimal clearing has occurred in this time (Photo 1). A section of the property west of the cottage was thinned around 2015 for wildfire mitigation (Photo 2). The main house and the cottage are outside of the WDP Area.



Photo 1. 2003 historical aerial photograph.



Photo 2. 2015 historical aerial photo.

Existing development within the 30 m WDP Area includes three buildings (lumber shed , white tent cabin and sauna, Photos 3 - 5) that are the subject of the Stop Work Order, as well as Murphy Lower Road (Photo 6), boat moorage (dock with marine rails) with two sheds (Photo 7), and water intakes and a hydroelectric power house.

Murphy Lower Road was existing on the property when purchased. The lumber shed, white tent cabin and sauna are all located along this road, as well as two structures (wood storage and an open shop, Photo 8). Water is sourced from Clute Creek (Water licenses C124507), and power is provided by a residential hydroelectric system which includes an intake on Clute Creek and a power house and tailrace near the marine rails (Water Licenses C123049). The dock and marine rails have an existing tenure (Specific Permission) from the Province (Crown Land File #4403930).

5 Murphy Lower Road – Riparian Assessment



Photo 3. Lumber shed.



Photo 4. White tent cabin.



Photo 5. Sauna.



Photo 6. View of Murphy Lower Road within 30 m WDP area. Lumber shed on the right.



Photo 7. Marine rails and sheds.



Photo 8. Wood storage and shop building along Murphy Lower Road .

5 Murphy Lower Road – Riparian Assessment

2.1.3 Watercourses and Aquatic Habitat

2.1.3.1 Kootenay Lake

Kootenay Lake borders the Property along the western boundary for approximately 465 m. The foreshore is steep and consists mainly of large boulders and cobbles (Photo 9). A gravel beach ~ 30 m wide with small groynes on either side is present at the north end of the alluvial fan (Photo 10).

Kootenay Lake is a long, narrow, and deep lake with a surface area of approximately 400 km². Kootenay Lake's main inflows are the Kootenay River to the south and the Duncan River to the north. The lake drains through the West Arm into the Kootenay River. Lake levels can vary up to 4 m throughout the year, affecting the extent of the exposed shoreline (Fortis 2026). Kootenay Lake supports a variety of fish species, including kokanee (*Oncorhynchus nerka*), rainbow trout (*O. mykiss*), bull trout (*Salvelinus confluentus*), white sturgeon (*Acipenser transmontanus*), westslope cutthroat trout (*O. clarki lewisi*), and burbot (*Lota lota*).



Photo 9. View of boulder dominated shoreline along property. Photo 10. View of beach at north end of alluvial fan.

2.1.3.2 Clute Creek

Clute Creek (WSC 340-220200) borders the southern boundary of the Property (Photo 11-Photo 14). The reach of Clute Creek adjacent to the Property has a channel width ranging from 3 to 10 m, with an average width of 6.5 m, and gradients ranging from 7% at the mouth to 15% below the bedrock waterfall located ~ 200 m upstream from the confluence with Kootenay Lake (Photo 14). Large boulders and cobbles are the dominate substrates and stream morphology is primarily step-pool (Photo 13), although the lowermost parts of the creek are less stable (Photo 12). A flood event in 2012 resulted in scouring of the channel and bank erosion (Photo 14), and the historical air photos also show signs of flooding and material deposition at the confluence with Kootenay Lake.

5 Murphy Lower Road – Riparian Assessment

The Clute Creek watershed is part of the Purcell Mountain Range and flows east into Kootenay Lake. No fish information is available for Clute Creek. Fish presence is assumed up to the waterfall as this section of Clute Creek may be accessible to fish in Kootenay Lake.



Photo 11. Confluence of Clute Creek Kootenay Lake.



Photo 12. Lower Clute Creek shows signs of flood events and substrate transport.



Photo 13. Step-pool habitat in Clute Creek.



Photo 14. Clute Creek waterfall ~ 200 m upstream of Kootenay Lake.

2.1.4 Vegetation

The Property is within the West Kootenay Interior Cedar – Hemlock dry, warm (ICHdw1) biogeoclimatic subzone. This subzone typically ranges in elevation from 600-1225 m and is characterized by moist warm springs; hot to very hot dry summers; and mild dry winters with a moderately shallow snowpack. This subzone is highly productive with a great variety of tree species (MacKillop and Ehman 2016).

5 Murphy Lower Road – Riparian Assessment

Riparian vegetation within the property along Kootenay Lake is primarily dense second growth forest with a mix of coniferous and deciduous tree species, shrubs and herbs (Photo 15, Photo 16). Tree species include black cottonwood (*Populus trichocarapa*), paper birch (*Betula Papyrifera*), ponderosa pine (*Pinus ponderosa*), western larch (*Larix occidentalis*) and western red cedar (*Thuja plicata*). Shrubs include willows (*Salix sp.*), red osier dogwood (*Cornus sericea*), baldhip rose (*Rosa gymnocarpa*) and thimbleberry (*Rubus parviflorus*). Common herbs include violets (*viola sp.*), asters (*aster sp.*), rough bentgrass (*Agrostis scabra*), fescues (*Festuca sp.*), silver wormwood (*Artemisia ludoviciana*) and wall lettuce (*Mycelis muralis*). Moss cover is sparse near the shoreline and consists of red-stemmed feathermoss (*Pleurozium schreberi*), pipecleaner moss (*Rhytidiopsis robusta*) and rock moss (*Racomitrium spp.*).



Photo 15. Riparian vegetation at the confluence of Clute Creek and Kootenay Lake.



Photo 16. Dense young forest riparian vegetation between Murphy Lower Road and Kootenay Lake.

The riparian vegetation along Clute Creek consists of a mix of young and mature forest with a dense understory of moss and some herbs (Photo 9, Photo 16, Photo 17). Tree species include mature western red cedar and Douglas fir (*Pseudotsuga menziesii*), western larch, western hemlock (*Tsuga heterophylla*), and paper birch. The forest floor is densely carpeted with feathermoss, while thimbleberry has colonized the rocky banks scoured by the flood event. Flood disturbed banks adjacent to Clute Creek are regenerating with young western hemlock, western redcedar, and Douglas-fir.



Photo 17. Mature conifer forests along Clute Creek.



Photo 18. Riparian vegetation along Clute Creek..

The majority of the remaining property adjacent to the WDP Area consists of mature and second growth forest with western red cedar, western hemlock, Douglas fir, western larch, paper birch, ponderosa pine and lodgepole pine (*Pinus contorta*). The shrub layer includes moderate amounts of falsebox (*paxistima myrsinites*), Saskatoon berry (*Amelanchier alnifolia*) and black huckleberry (*Vaccinium membranaceum*). The herb layer includes twinflower (*Linnae borealis*), prince's pine (*Chimaphila umbellate*), western rattlesnake plantain (*Goodyera oblongifolia*) and kinnikinnick (*Arctostaphylos uva-ursi*). A thick carpet of feathermoss covers the forest floor.

2.1.5 Wildlife

The riparian areas can provide migration corridors connecting aquatic, riparian, and upland environments, and can provide habitat to support the life cycles of numerous species. Large and dead standing trees provide perching, nesting and foraging habitat for a variety of bird species. Wildlife features observed on the property during the field visit include:

- Two trees with multiple cavities within the Clute Creek riparian area (Photo 23 and Photo 24).
- Rocky substrates and coarse wood debris can provide cover for smaller mammals and herptiles.

5 Murphy Lower Road – Riparian Assessment



Photo 23. Wildlife tree within riparian area along Clute Creek.



Photo 24. Wildlife tree within riparian area along Clute Creek.

2.1.5.1 Species at Risk

The property overlaps with a mapped critical habitat polygon (unmapped range) for southern mountain caribou (*Rangifer tarandus*). Unmapped range lies within the local population unit boundary but has not been assigned a 'type' of critical habitat (ECCC 2014). The Property does not contain the biophysical attributes (mature cedar/hemlock/spruce forests) required to support southern mountain caribou.

No confirmed occurrences of species at risk are recorded on the property (BC CDC 2026). Mountain goat (*Oreamnos americanus*) have been observed north of the Property in the Purcell Wilderness Conservancy (iNaturalist 2026); however, the steep, cliffy terrain this species relies on is not present on the property. The property is within the Central-South Purcells grizzly bear population unit. Grizzly bear are a wide ranging species that may transiently use the area.

Kootenay Lake provides habitat for several at-risk fish species, including white sturgeon, bull trout and burbot.

2.1.6 Invasive Species

No invasive species were observed on the property.

Wall lettuce was observed within flood disturbed areas of the Clute Creek channel. Wall Lettuce is currently listed as a Priority 5 species in the Kaslo North Invasive Plant Management (KNIPM) Area by the Central Kootenay Invasive Species Society (CKISS), which means that there is insufficient information for these species on their distribution, impacts, potential for spread and/or feasibility of control (CKISS 2025).

2.2 Streamside Protection and Enhancement Area

The Streamside Protection and Enhancement Area (SPEA) for the property (Appendix 1) was determined by completing a detailed assessment following the Riparian Area Protection Regulation (RAPR) methodology. The SPEA is determined based on the maximum widths of Zones of Sensitivity (ZOS) for large woody debris, litter fall and insect drop, and shade (Table 2).

The SPEA for Kootenay Lake varies between 15 m and almost 30 m from the high-water mark of Kootenay Lake. The large woody debris (LWD) and litter fall/insect drop ZOS is 15 m inland from the high-water mark. The shade ZOS varies as the aspect and orientation of the property along Kootenay Lake varies from west-facing to north-facing. The shade ZOS ranges from 0 m for west facing shorelines, to 30 m for north facing shorelines. The SPEA for Clute Creek is 15 m and is determined by the litter fall/insect drop ZOS. As the property is located on the north side of Clute Creek, and Clute Creek flows in an east-west orientation, no shade ZOS is applicable.

Table 1. Results of detailed RAPR assessment for Kootenay Lake and Clute Creek.

Feature Type	SPVT ¹	Zones of Sensitivity			SPEA ³
		LWD ²	Litter Fall & Insect Drop	Shade	
Kootenay Lake	TR	15 m	15 m	0-30	15-30
Clute Creek	TR	6.5-13 m	15 m	N/A	15

¹SPVT: site potential vegetation type (TR-tree)

²LWD- large woody debris

³SPEA- streamside protection and enhancement area

2.3 Kootenay Lake Shoreline Management Guidelines

The Kootenay Lake Shoreline Management Guidelines (KLP 2020) provides guidance on risk assessment and regulatory requirements associated with specific works in or adjacent to Kootenay Lake, and includes risk matrices for ecological, archaeological, and cultural values. The Property shoreline is located within Foreshore Inventory Mapping (FIM) Segments 113 and 114 (Ecoscape 2016, KLP 2026). Aquatic habitat index rating and archaeological potential for these segments are summarised in Table 2.

Table 2. Foreshore Inventory Mapping segment information.

Segment	Aquatic Habitat Index Rating (AHI)	Site Sensitivity	Archaeological Potential	Enhanced Engagement
113	Moderate	Aquatic	Yellow	Required
114	High	Aquatic	Yellow	Required

The ecological risk matrix provided in the Kootenay Lake Shoreline Management Guidelines does not provide a risk assessment rating associated with building permits or the removal of native vegetation but defers to the applicable local government for these activities.

Kootenay Lake is part of the traditional territory of the Ktunaxa, Sinixt and Syilx (Okanagan) First Nations and archaeological evidence is documented at multiple sites along the shoreline and mountain sides of Kootenay Lake, and most of the east side of Kootenay Lake is considered to have archaeological potential. The archaeological risk matrix provided in the Kootenay Lake Shoreline Management Guidelines indicates that for segments with a yellow classification there is a high level of risk associated with native vegetation modification/removal and moderate level of risk associated with building permits applications. High risk pertains to localized and/or relatively superficial effects in locations where the physical evidence is likely to be very sparse, highly localized, deeply buried and/or already too highly disturbed to be of further archaeological value. Consulting an archaeologist is recommended in situations where the activity is deemed to be high risk. A moderate risk is one where the activity itself might not constitute a potential threat to intact archaeological materials but ancillary activities (e.g. those involving access to, from or across land or some disturbance of mineral soil) may cause impacts to known archaeological sites or where such are likely to be present. Following an Archaeological Chance Find Procedures is recommended for moderate risk activities.

The cultural values engagement matrix provided in the Kootenay Lake Shoreline Management Guidelines indicates that enhanced engagement with Ktunaxa is required for land development, including building permit applications and native vegetation removal.

2.4 Proposed Development

At the time of the assessment no new development activities are proposed as works have already been completed. This assessment has been completed in response to the Stop Work Orders issued by the Regional District of Central Kootenay.

3 IMPACT ASSESSMENT

The potential impacts associated with development in the SPEA and the loss of permanent or temporary vegetation include:

- Reduction of potential suitable wildlife habitat (i.e. potential nesting and perch habitat), and nutrient cycling from loss of vegetation potential.
- Change in cover habitat from natural forest to exposed ground and anthropogenic structures.
- Increased risk of invasive weed introduction due to exposed soils from construction.

5 Murphy Lower Road – Riparian Assessment

The footprints of the structures in the Stop Work Order that are within the SPEA is estimated to be 69 m² as follows:

- Lumber shed ~ 39 m² (Photo 3).
- White tent cabin ~20 m² (Photo 4). The majority of this structure is outside of the SPEA.
- Sauna building ~10 m² (Photo 5).

Other development within the SPEA includes the upland portion of the marine rails and the two storage sheds and the powerhouse adjacent to Kootenay Lake, a footpath and portions of Lower Murphy Road, walkway, and the suspension bridge and water intakes on Clute Creek. Impacts associated with these are considered in the following assessment but are not specifically quantified as they are not part of the Stop Work Order, are authorised under other pieces of legislation (Water Sustainability Act) and/or predate the Electoral Area 'D' Comprehensive Land Use Bylaw 2435, 2016.

The development within the SPEA to date has minimised impacts associated with the removal of vegetation by:

- Restricting vegetation removal to the structures footprint, not using permanent footings, and locating structures immediately adjacent to Murphy Lower Road.
- Incorporating a green roof on each building that provides habitat, allows for nutrient cycling, and allows precipitation to infiltrate into the ground and reducing stormwater runoff.
- Avoiding the use of impervious surfaces around buildings.

Other measures to protect and maintain the SPEA that were observed on site included:

- The entire property is forested, and no large clearings are present, which minimises risk of windthrow damage to the SPEA.
- Damage to trees and their roots has been avoided by not incorporating subsurface foundations, not compacting the soils, and maintaining the native grade around vegetation.
- No erosion and sediment concerns associated with the development were observed as no disturbed soils are present around the buildings, vegetation adjacent to Kootenay Lake and Clute Creek is intact, and the buildings incorporate a green roof.
- Avoiding the use of impervious surfaces, incorporating green roofs on buildings, and maintaining native vegetation outside of the immediate building footprint allows stormwater to infiltrate into the ground.
- Maintaining a property where no invasive species were noted.

During the site visit, the riparian vegetation on the property was observed to be intact and functioning effectively. Although the development that has occurred to date has occurred within the SPEA, it has incorporated measures to minimise and mitigate its impact on environmental values. Outside of the specific footprints associated with the structures, the SPEA has not been disturbed, and therefore there are no opportunities for restoration within the SPEA elsewhere on the property.

4 MEASURES TO PROTECT THE INTEGRITY OF THE SPEA

This section provides measures to protect the integrity of the SPEA with the existing level of development. Any future development within the Watercourse Development Permit area is expected to require a new development permit application and may incorporate new project specific measures.

4.1 Danger Trees

Identification of danger trees was outside of the scope of this assessment. If danger trees are present in the SPEA and are identified as posing a high risk to public safety or infrastructure, they may need to be addressed through topping or felling.

- Danger trees should be assessed by a qualified professional.
- Topping is preferred so that the tree can continue to provide wildlife habitat.
- Trees felled within a SPEA should be left as coarse woody debris
- Tree replacement is unlikely to be required for individual trees as the existing vegetation is already dense and regeneration is likely to occur.

4.2 Windthrow

Windthrow may be a concern where developments remove part of a forest, leaving the remaining trees more exposed to high velocity winds. Windthrow was not identified as a concern as the SPEA is surrounded by forested areas. Retaining forested areas adjacent to the SPEA reduces the risk of windthrow in the future.

4.3 Slope Stability

Development can affect slope stability within or adjacent to the SPEA, and unstable slopes can impact the integrity of the SPEA. A geotechnical assessment of the Property is outside the scope of this assessment. The existing development does not appear to have altered slope stability; however, Clute Creek is an alluvial fan and may be susceptible to flood/debris events, and bank erosion was observed downstream of the waterfall (2012 flood event).

4.4 Protection of Trees in the SPEA

Development near riparian areas can compact soils and damage the root systems of trees within the SPEA. To date, work appears to have been completed with minimal ground disturbance or impacts to rooting systems. Any future developments on the property should include clearly identifying limits of disturbance along the SPEA boundary to prevent impacts to trees and their roots within the SPEA.

4.5 Preventing Encroachment into the PSEA

Development adjacent to the SPEA can result in encroachment and increased use within the SPEA (ie dumping, trampling vegetation, compacting soils). The property is boat access only which limits usage of the property, existing trails are well defined and outside of these areas soils and vegetation are largely undisturbed, and limited development has occurred elsewhere on the property and the SPEA is surrounded by forested areas.

- Development of new trails in the SPEA should be avoided.

4.6 Sediment and Erosion control during Construction

No new development is proposed. No erosion and sediment concerns noted with existing development as no disturbed soils and vegetation adjacent to Kootenay Lake and Clute Creek is intact.

4.7 Stormwater Management

No stormwater concerns noted with the existing development, which has minimised impervious surfaces by incorporating green roofs, using permeable paths, and minimising ground disturbance.

4.8 Floodplain Concerns

The SPEA is measured from the edge of the stream channel. On very dynamic stream channels, this may not be sufficient to protect the SPEA or the development from flood hazards and damage. Clute Creek is an alluvial fan and may be susceptible to flood/debris events, and large flood events have the potential to alter the stream channel and therefore the SPEA. Any future development within the WDPA should take this into consideration.

5 CONCLUSION

A riparian area assessment conducted on the property following the methodology outlined in the Riparian Areas Protection Regulation determined the streamside protection and enhancement area (SPEA). The

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width of the SPEA on the property varies from 15-30 m from the high water mark of Kootenay Lake and is 15 m from the highwater mark of Clute Creek.

The development that has occurred to date has been completed in a manner that protects adjacent aquatic habitat, has maintained the ecological values of the riparian zone on the property, and has incorporated measures to maintain the integrity of the SPEA.

We trust the information provided in this report meets your current requirements. If you have any questions or require further information do not hesitate to contact the undersigned.

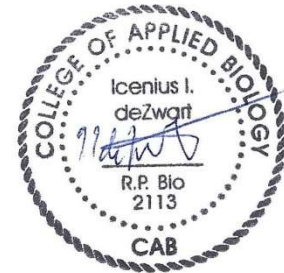
Sincerely,



Amber Warkentin, ATAg
amber@masseenvironmental.com



Ico de Zwart, RPBio
ico@masseenvironmental.com



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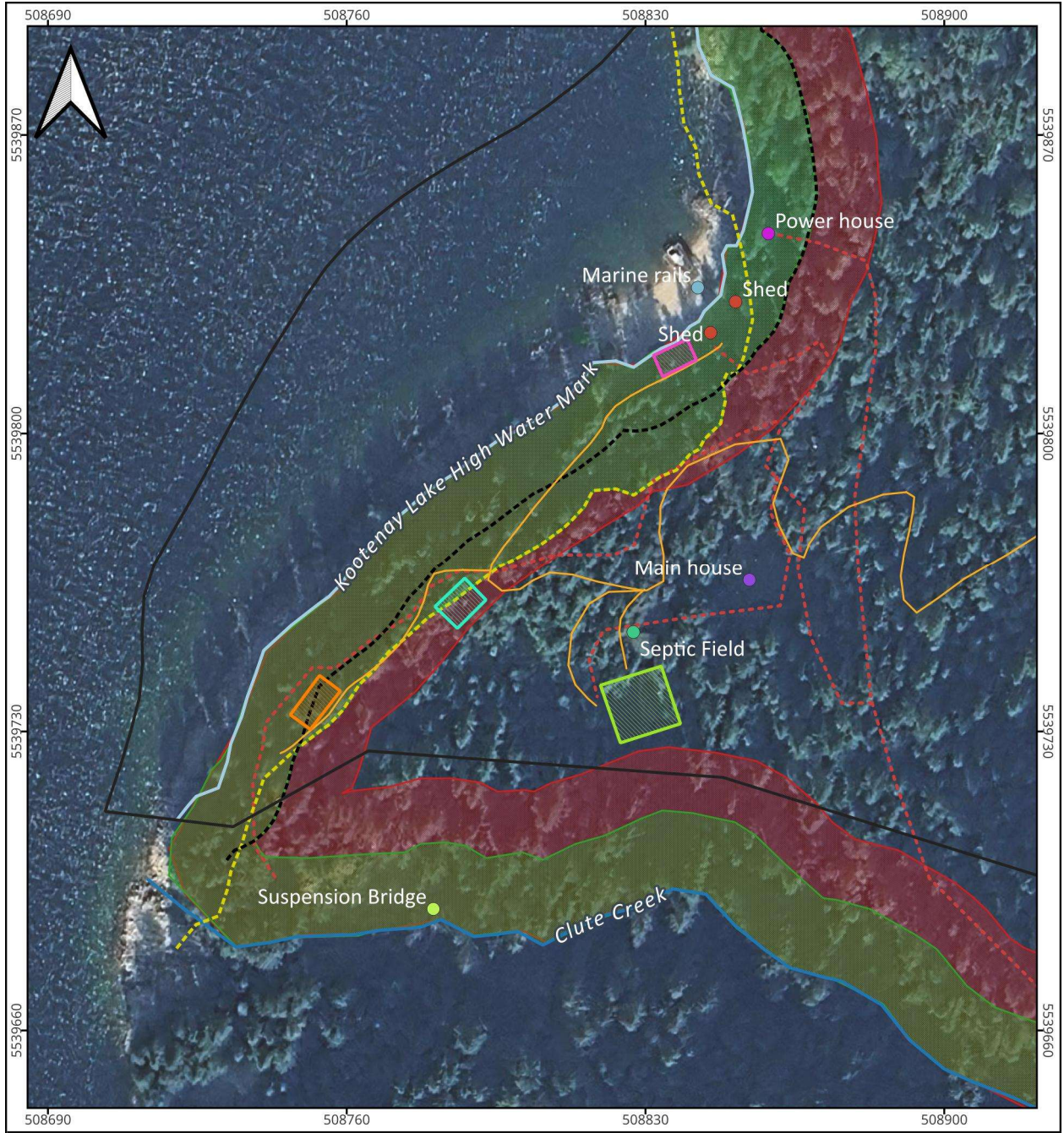
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APPENDIX 1. SITE PLAN

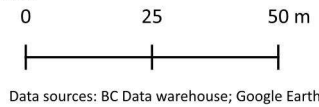


Site Plan

-  Subject Property
-  Road
-  Clute Creek
-  Kootenay Lake High Water Mark
-  Water line
-  Streamside Protection & Enhancement Area
-  Waterfront Development Permit Area

Buildings (Stop Work)

-  Cottage
-  Lumber Shed
-  Sauna
-  White Tent Cabin



Map Date: 2026-03-25
 Projection: NAD83 / UTM zone 11N
 Project #: 2025-1245
 Main Map Scale: 1:1500
 Overview Map Scale: 1: