

# KING RANCH ONSITE SEWERAGE SYSTEM

Project Overview

Luis Goncalves, ROWP, IN, PL, PIR

GROUNDSTONE ENTERPRISES LTD 3765 Glenrosa Rd

A detailed site investigation has been undertaken to evaluate the feasibility of on-site sewage disposal for a proposed subdivision located at Big Bluff Rd, within the Cariboo Regional District. The development encompasses two parcels of land: DL 1090 (PID 011-235-365) and DL 1091 (PID 011-235-381), comprising approximately 80 and 160 acres respectively. Both properties are under the ownership of Mr. Dave King.

The Big Ranch development project is poised to become a significant addition to the area, with plans to include multiple individual cabins, a large 30,000 square foot lodge, and accommodations for staff. This development is strategically designed to cater to both short-term guests and long-term residents, enhancing the area's appeal as a prime destination. Soil consistency across most of the property was found to be favorable, with only minor variations observed in the eastern zone. This consistency is critical, as it directly influences the feasibility of on-site sewage systems, ensuring that the land can support the necessary infrastructure without extensive modification.

The site investigation included the thorough assessment of various test pits and permeameter testing conducted across the property. These procedures were executed in strict accordance with the Sewerage System Regulations under the Public Health Act. Moreover, all activities adhered to the guidelines stipulated in the Sewerage System Standard Practice Manual (SPM), which serves as the definitive resource for site and soil evaluation, planning, installation, and maintenance of sewerage systems, as mandated by the Ministry of Health, British Columbia.

This report is intentionally focused on evaluating whether the proposed on-site sewage disposal systems can meet the regulatory requirements of the Sewerage System Regulations and the Public Health Act. While this report does not include the final design of sewage disposal systems for each structure, the data obtained from this investigation is crucial. It will serve as the foundation for the engineering designs that will follow once the detailed site plans for the development are finalized. The forthcoming designs will ensure that each sewage system is tailored to the specific needs of the structures, maintaining both regulatory compliance and operational efficiency.

Topographically, the property exhibits slopes ranging from 5-10% in the cleared valley areas, with slopes of up to 15% along the northern edges near Bluff Road. These slope conditions, combined with the favorable soil characteristics identified, confirm that all lots within the proposed subdivision are suitable for the construction of on-site sewage systems. These systems are expected to fully comply with the Sewerage System Regulations and the standards outlined in the associated SPM.

## Work Program

The site testing program was meticulously executed on August 4, 2024, under optimal weather conditions, which provided an ideal environment for accurate and reliable data collection. To ensure that the testing was comprehensive and timely, two additional assistants were employed. Their involvement allowed for multiple lots to be tested concurrently, with all activities being conducted under the strict supervision of the signing professional, ensuring the integrity of the results.

## Excavation

Excavation was carried out using a midi excavator, which proved to be highly effective in this context. The equipment's performance was commendable, particularly in maintaining the integrity of the pit sidewalls, which experienced minimal sloughing—a critical factor in ensuring accurate soil profile analysis. Photographic documentation of the excavation process, which provides visual confirmation of the site conditions, is available in Appendix B of this report.

### Testing Procedures

The testing phase of the project was conducted at locations deemed optimal for wastewater dispersal, based on a thorough analysis of site conditions, slopes, and potential layouts. Multiple test pits were excavated in accordance with the rigorous guidelines set forth in the SPM and the Professional Practice Guidelines for Onsite Sewerage Systems, as published by Engineers and Geoscientists British Columbia (EGBC). Key activities included:

- **Determination of Expected Disposal Field Areas:** These areas were identified based on the existing site conditions, topographical slopes, and projected development layout. The analysis assumed that future property owners might opt to construct multiple cabins, staff accommodation buildings, and a substantial 30,000 square foot lodge. This assumption guided the strategic selection of test sites to ensure they were representative of potential wastewater disposal needs.
- **Groundwater Testing:** An exploratory hole was excavated to a depth of 9 feet at the western edge of the property, near the wetland area. This was to determine the groundwater level, a critical factor in assessing the feasibility of on-site sewage systems, particularly in ensuring that wastewater does not contaminate the local water table.
- **Excavation Testing:** Test holes were excavated to a depth of 1.5 meters at various locations across the property, as determined by the supervising Registered Onsite Wastewater Practitioner (ROWP). Percolation tests were then conducted in strict adherence to the SPM guidelines, ensuring that the soil's absorption capacity meets

the necessary standards for effective wastewater dispersal.

The results from these tests indicate a relatively uniform soil profile across the testing conducted, which is highly advantageous for the consistent and efficient operation of on-site sewage systems. Furthermore, the proposed building sites for all structures within the development have been identified, allowing for the strategic placement of dispersal fields. Additional testing was carried out to validate these locations, ensuring that they are well-suited for their intended purpose.

A detailed map of the proposed subdivision, including boundary lines and designated areas for the dispersal fields, is provided in Appendix A. This map offers a visual representation of the site's layout, providing a clear overview of how the land will be utilized and how the sewage disposal infrastructure will be integrated into the overall development plan.

## Results

Daily Design Flow: proposed cabin areas will have residential usage SPM standards applied. Average 3-4 room accommodations would be determined to have between 1300L/day to 1600 L/day. If we were to determine septic field sizing in accordance with the soil loading rate of 27L/day/m<sup>2</sup> (HLR) we can determine the septic drain field sizing to be between 49 m<sup>2</sup> to 60 m<sup>2</sup> for each cabin. Safety factors (peaking factor) should be added to the volume of the cabins to ensure adequate service should there be higher occupancies, which is to be determined later.

For staff accommodations we can determine a usage per person rate of approximately 170L/day/person, if we determine a 40 person work staff a daily design flow of approximately 6800 L/day. Using the same soil loading rates as mentioned, we can determine a field area of approximately 251m<sup>2</sup> for a type 1 septic system and a sizing of 136m<sup>2</sup> for a type 2. In determining the wastewater strength level (BOD) it would be imperative to use a type 2 system to reduce field area footprint, and most importantly to reduce the high BOD effluent from staff kitchens. Grease and fat separator, trash tank, treatment tank, recirculation tank and pump tank would be the recommended system tankage train.

The lodge can be assessed in a similar fashion as the staff accommodations, strength of the wastewater would be deemed a high in BOD from food service resulting in a similar tank train set up. Field area can be calculated based on a 40-person occupancy for example, resulting in 9,100 L/day daily design flow. Area would be in the range of 182m<sup>2</sup>.

Regulatory Requirements: this proposed development should include for the following:

- Riparian / wetland area protection covenant
- BC Hydro right of way
- Driveways
- Drilled wells on lots / water lines

These restrictions will affect the available area for dispersal systems. Setbacks from the above mentioned should be determined when producing site plans.

Hydraulic Loading Rate Calculations: as per the SPM, hydraulic loading rates for each

proposed dispersal area were evaluated based on soil evaluations and percolation testing. The HLR was chosen as the more restrictive of the results. See Appendix C for detailed results of test pits.

12 test pits were excavated at each proposed dispersal field location. Soil types and profiles were consistent on each building proposed site, with very little variability between test pits. Soil textures, structures, and categories were determined based on USDA methodology. Maximum allowable HLR rates based on soil conditions were taken from the SPM. Table I below shows the results of this analysis.

Test Pits	Soil Ribbon		Soil Texture Group	Soil Type		Cement.	Cat.	HLR rate L/d/m2
	Len.	Texture		Structure				
1	<1"	gritty	Sandy Loam	Sub-angular blocky (moderate)	None	F	27	
2	<1"	gritty	Sandy Loam	Sub-angular blocky (weak)	None	F	27	
3	<1"	gritty	Sandy Loam	Sub-angular blocky (moderate)	None	F	27	
4	<1"	gritty	Sandy Loam	Angular blocky (weak)	None	F	27	
5	<1"	gritty	Sandy Loam	Sub-angular blocky (weak)	None	F	27	
6	<1"	gritty	Sandy Loam	Sub-angular blocky (moderate)	None	F	27	
7	<1"	gritty	Sandy Loam	Sub-angular blocky (weak)	None	F	27	
8	<1"	gritty	Sand	Granular (weak)	None	F	30	
9	<1"	gritty	Sand	Granular / loose Structure-less (weak)	None	F	40	
10	<1"	gritty	Sand	Loose, structure-less	None	F	40	

Table I. Soil type and prescribed maximum hydraulic loading rate

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- *A more detailed soil analysis to be outlined in the actual soils report in the design.*

Percolation tests were carried out using the test pits at each proposed dispersal site. Results were found to be generally uniform between test pits at each testing area, except for the northern location where there was glacial till. Highly permeable soils can also have a negative effect on wastewater treatment. Final percolation test results were taken as the most conservative result. Table II below shows the results of these permeability tests.

Testing Area	Test 1	Test 2	Permeability Test (KFS Range)	Type 1 (L/Day/M2)	Type 2 (L/Day/M2)
TP 1	10min/inch	15min/inch	550-1000 mm/day	27L/day/m2	50L/day/m2
TP 2	10min/inch	12min/inch	550-1000 mm/day	27L/day/m2	50L/day/m2
TP 3	10min/inch	15min/inch	550-1000 mm/day	27L/day/m2	50L/day/m2
TP 4	12min/inch	15min/inch	550-1000 mm/day	27L/day/m2	50L/day/m2
TP 5	4min/inch	10min/inch	1000-2000mm/day 550-1000 mm/day	27L/day/m2 – 30L/day/m2	50L/day/m2 – 60L/day/m2
TP 6	10min/inch	10min/inch	550-1000 mm/day	27L/day/m2	50L/day/m2
TP 7	5min/inch	10min/inch	550-1000 mm/day	27L/day/m2	50L/day/m2
TP 8	1min/inch	1min/inch	4000-8000 mm/day	45L/day/m2	65L/day/m2

Table II. Permeameter test results and prescribed maximum hydraulic loading rate

Minimum Area for Dispersal Areas: Final determination of the maximum HLR for each proposed dispersal was calculated using the most conservative result between the soil type evaluation and the percolation tests. Daily Design Flow divided by the Maximum Hydraulic Loading Rates results in a minimum value for a dispersal area.

Table III below show Table III. HLR and DDF used to determine minimum dispersal areas

Proposed Lot	HLR rate (L/d/m <sup>2</sup> )		DDF L/day	Type 1 (m <sup>2</sup> )	Type 2 (m <sup>2</sup> )
	Soil	Perc			
Cabin areas	27	10-15m/inch	1300-1600	49-60	26-32
Staff Building	45	1m/inch	6800	Not Recommended	105
Lodge	27	10-15m/inch	9100	Not Recommended	182

Soil and Site Conditions Check: each proposed dispersal area location was checked against soil and site conditions as per guidelines in the SPM to confirm if Type 1 systems will be appropriate. All sites passed these checks.

Seasonal High-Water Table: Estimation of seasonal high-water table and seasonal water saturated conditions was formed by observation of site conditions in test holes, looking for mottling features. One test pit was conducted at the western most portion of the property near the wetland area, water table at 9ft.

Limiting Layer: Test pits as well as excavations have revealed no limiting layer throughout the parcel.



Available Area: All sites were found to have sufficient size of appropriate slope for the required dispersal areas. Soil samples were taken at proposed dispersal sites and not taken throughout every portion of the property, it is expected that soil characteristics will remain constant within each site and would allow for multiple dispersal area locations. Each onsite wastewater system is to have a factor of safety, that number is to be determined at the design stage.

Minimum area for dispersal areas compared to available area on each proposed lot.  
Notes: 1. "available area" includes all land with a slope <15%, does not include any area within setbacks from wells, horizontal breakouts, or property lines. 2. No setback was included from the strata road right of way.

Some testing data and pictures are found in Appendices A.

## Conclusion

As an Authorized Person under the Sewerage System Regulation, I confirm that all sites in the proposed development have an adequate area with less than 15% slope suitable for construction of on-site sewerage systems which meet the requirements of the Sewerage System Regulation and the associated Standard Practice Manual (2014 version).

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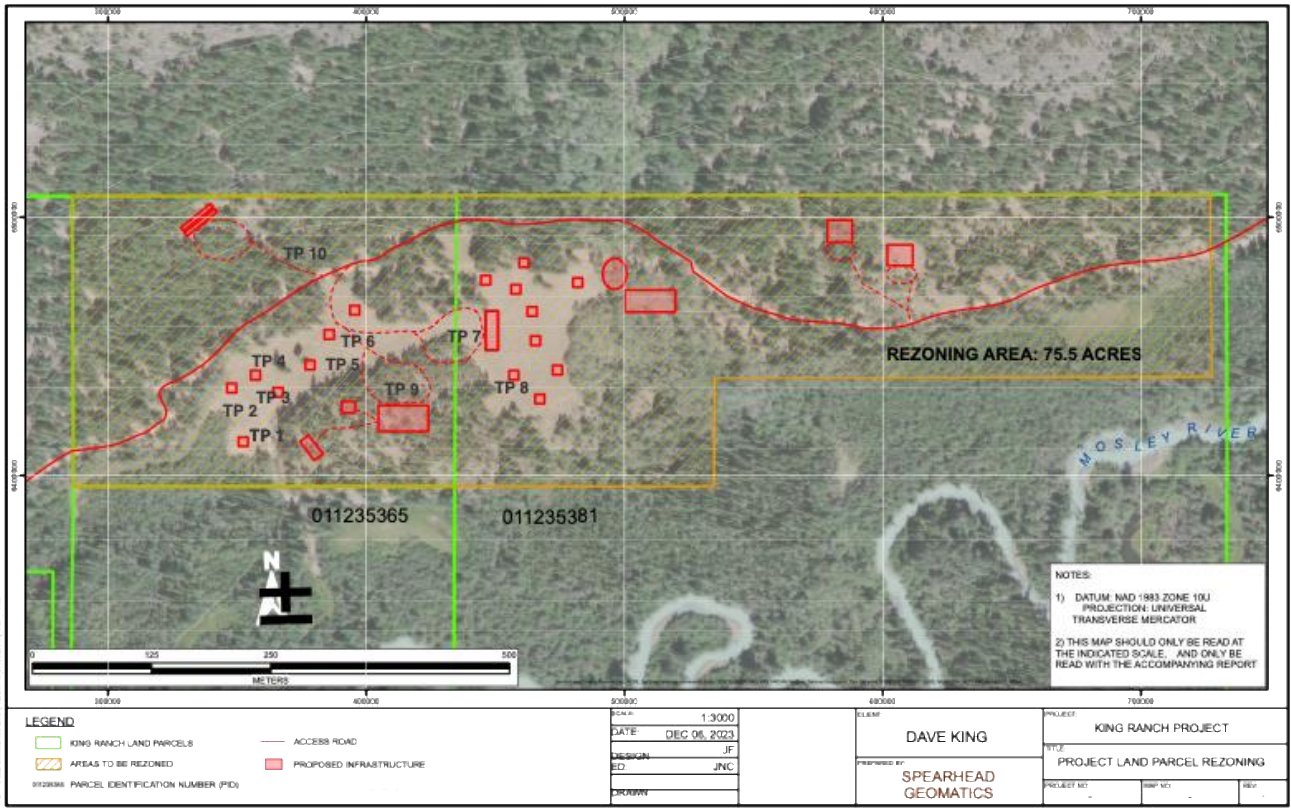


Appendices A:



On-site Sewerage Disposal Assessment  
Big Ranch Project, Page 9





# ***DON VANDERHORST CONSULTING LTD***

September 10, 2024

Connor Ikoma, Planning Officer 1  
Planning and Development Services  
Cariboo Regional District  
Suite D – 180 North Third Avenue  
Williams Lake, BC V2G 2A4

Dear Connor:

**Re: Public Information Meeting - King Rezoning Application**

As per your request, below is a summary of the public information meeting held on August 27, 2024, at the Tatla Lake Community Hall.

Dave King, owner of White Saddle Ranch, is the owner of several properties along the Bluff Lake Road, south of Tatla Lake. Mr. King has prepared an application to rezoning two parcels of land between Bluff and Middle Lakes. The Cariboo Regional District (CRD) has given approval to 1st reading of the rezoning bylaw, and one of the requirements flowing out the approval for 1st reading of the zoning bylaw was for the applicant to schedule a public information meeting.

The public information meeting was held at 7:30 pm, Tuesday, August 27th, as the Tatla Lake Community Hall. The meeting was advertised throughout the community as well as a notice in Williams Lake Tribune

The applicant was represented by Dave and Luke King of White Saddle Ranch, John Furneaux of Bella Coola Heli Sports (BCHS). Representatives of the CRD were also present

Approximately 70 people attended the meeting. Some individuals were from other communities, etc, but the majority of participants appeared to be from the local community and surrounding area. A summary of the issues raised and responses provided are outlined below

- Dave King initiated the meeting with a brief overview of the history and use of his property, and the key highlights (and rationale) of the proposed development on the property to be rezoned. Mr. King noted that the two properties comprise 114 ha in total, of which only 27 ha are proposed for rezoning. The remaining portion of both properties, including the wetlands along Mosley Creek, will remain as and would provide a corridor along the creek within the valley for wildlife movement.
- Someone (Dylan Peters) asked about any potential contributions to the community (Tatla Lake) legacy fund from the project. Response - no direct contributions to be made to the community. One of the nurses stepped in

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to say that BCHS had donated some skiing time. John also followed up by saying that BCHS had donated 10,000 to assist with the internet when John Kerr was getting it set up a number of years ago

- Greg stood up and presented Mr. King with a petition (from Facebook) from individuals opposing the development
- Walt Foster, owner of Sand Creek Ranch, south of Middle Lake, expressed concern about impacts to wildlife and sustainability, and the need to preserve lands in the valley, arising from the proposed development. John F of BCHS responded with an explanation of the ownership group for the project, and outlined the proposed development plans for the site - Master planned site, blended into the environment, and a staged building approach. We hope to work with the Kings and Fosters to come up with a sustainable master plan for the private parcels in the area
- A number of individuals expressed concern and opposition to the project, saying they do not want that in this area. It was not clear where these individuals were from.
- Dylan P expressed concerns that the footprint of over 60,000 sq. ft. of lodging seemed excessive
- Chief Irvin of the Redstone First Nation expressed opposition to the project and heli skiing in general. He also expressed frustration at the use and reference to Crown Land and outlined a number of historical issues that Indigenous people have endured. Dave King responded by apologizing for the use of Crown land and stated that a successful tourism development can benefit and be shared by all parties in the valley and surrounding area. Dave briefly mentioned the 2 tourism based fishing lodges that the Tsi Del Del had purchased recently, acknowledging their own tourism based interests
- Someone asked what the first phase of development would look like. John F provided a brief summary
- Someone asked what the first phase of development would look like. John F provided a brief summary. A number of comments were made about impacts from forest harvesting, and developments and businesses that start small but get bigger and bigger.
- Walt F of Sand Creek Ranch stated that there is no year-round management plan and the development is focused on winter use only. He asked what is the acceptable amount of change for the valley? .
- Luke King provided a summary of opportunities for the next generation of people living in this area. Pam argued that there were lots of opportunities, and that my future work was not of her interest.
- Deborah K suggested there were lots of work opportunities such as farming goats and maybe bee farming
- A number of individuals expressed concern about the potential for increased land values as a result of the project as well as that many people have come to this area "to get away from it all" and the proposed

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project is a huge development that only benefits people who have no respect for the locals and area around them

- Other comments includes - project is too big and will have too much impact on the area, concerns about grizzly bears and other wildlife in the area. The proponents have not prepared a wildlife report to outline impacts to wildlife values and habitat, including loss of grasslands.
- Doug M indicated he wasn't necessarily for or against the proposal, but all the concerns around the wildlife, particularly bears, was not well founded and that most of the locals are not that knowledgeable about the tangible impacts of such developments on wildlife. As a guide outfitter who has spent much of his life tracking the animals, he indicated that they will adjust and continue to thrive in the areas, citing Chilko Lake as an example.
- Walt F expressed that he disagreed
- With regards to the impacts from helicopters, the CRD stated that helicopter activity is outside of the CRD's jurisdiction. John F stated that this project is not a second helicopter base, but replaces its past activities that have historically occurred at White Saddle Ranch and Sand Creek Ranch. There was a question about possible summer use of the development. John F advised that BCHS only has a winter use tenure agreement (heli skiing)
- Concern raised about the reference to "beds" vs "buildings". John provided a brief explanation.
- Greg expressed concerns that BCHS typically only employs temporary foreign workers. John F corrected him that they currently only employ 2 people with temporary visas. BCHS has approximately 100 workers across the company during the winter operations, and hire 4 people full time (winter) from the local area.
- Walt F (Sand Creek Ranch) expressed concern about insufficient water supply, power generation, clearing of mountain sides for solar farms, etc. John F stated that the project is focusing on solar panels on the building roofs and passive house construction to minimize the use of diesel and wind generation for electrical power
- Sue R read an excerpt from a piece of literature which suggested the community did not support the expansion of heliskiing, but it was unclear where she was reading this from
- Questions raised about job opportunities. John F stated that approximately 10 full time people (all year round) local jobs will be created. Plus building jobs
- Concerns raised about impacts to the Bluff Lake Road. John F stated an update on this issue will be provided to the CRD

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The meeting wrapped up at approximately 9 pm. The majority of the people left within 10 minutes of the meeting ending, while approximately a dozen or so people stayed to mingle and debrief, as well as clean up the tables and chairs.

Regards

Don van der Horst

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cc: Dave King, White Saddle Ranch



Aug 27<sup>th</sup>, 2024

Public Information Meeting 3360-20/20240014

CRD Staff Report

**Start 7:10 am**

Dave King- Introduces proposal, explains history of property, and explains intent.

Nigel Whitehead - Outline of CRD rezoning process.

John Furneaux, Bella Coola Heli Sports (BCHS)- Provides overview of operations.

Comment- Describes concerns of impact on other businesses in the valley. Provides petition of 300 signatures to applicant.

Comment- Concern about lack of benefits BCHS has brought to the community.

J. Furneaux - Describes what has been given back to Bella Coola community.

Comment- BCHS gave \$10k for the internet in Tatla Lake.

Comment- Will this impact business with the Fosters?

J. Furneaux - No, we plan to continue business with the Fosters.

Mr. Foster- States they are against proposal. Would have negative impact on wildlife in the valley.

J. Furneaux - Describes outline of current and future business operations.

D. King- The plan is to apply for full buildout potential not what they are going to start with.

Comment- They have lived in the area for a long time and respect private property rights but they are concerned about the scale of the application.

D. King- Explained plan for the remainder of the lots in the valley. Plans environmental restoration.

Comment- Concerned about removing grassland. Moved to Tatla Lake to get away from everything. Concerned about intensity of operation.

Comment- Grassland makes better habitat for the deer.

Comment- If you plant trees it will contribute to forest fires.

D. King- Explains he has not fenced people out of his private land.

Comment- Dave King is trying to distract from the overall impact of the proposal. He is just making promises but has not done anything.

Irvine Charlieboy- Does not like term crown land or the idea of heli skiing. Has concerns about impact to wildlife, historical impacts on indigenous people and archaeological values.

D. King- Apologises for use of terminology. Explains work with Tsideldel on tourism initiatives.

Comment- How does heli skiing help people in Tatla Lake?

Comment- States they are not against mom-and-pop operations but are against corporations.

J. Furneaux - Explains ownership model and shareholders.

Comment- States archaeology studies are needed as there are pit houses in the valley and the Chilcotin war took place there.

Comment- What is the initial development size?

J. Furneaux - Day one would have approximately, 10 guests, 2-3 cabins and the lodge. The buildout timeline would be three years.

Comment- Concern about logging impact on community forest.

Comment- Concerns about what would happen the 8 months of the year there is no heliskiing.

Comment- Could BCHS practice sequestration of forest?

J. Furneaux - Did not know about forestry practices.

Comment- Where is the biologist report that covers everything? Concern about interaction with bears.

Comment- Long time resident. One Eye Lake Resort is rotten and gone. There is no future unless we think about ecotourism.

Comment- Property not viable for agriculture. Concerned about lack of consideration of wildlife.

Comment- Regulations for heli skiing are strict. This would be better than a mine and more sustainable than logging.

Comment- Hard to speak in opposition but many people move to Tatla for what it is now.

Comment- Once application is approved there is no going back. Public will have no control.

J. Furneaux - BCHS does not have authorization to do summer Heli activities.

D. King- Explains number of flight hours.

J. Furneaux - Plan to have lodge open year-round.

Comment- Lots of people are moving to Tatla Lake now. Need to make deliberate choices about who.

Comment- Water is an issue in the area. Concern about clearing of land for wind and solar power.

J. Furneaux - Energy studies have been completed and there will be no wind power.

J. Furneaux - Explains how they have outgrown their current location.

Comment- This will create a lot of traffic. Road is narrow and in poor condition.

Comment- The road is narrow and unsafe for more traffic.

Comment- The road is not maintained by Dawson Road Maintenance.

J. Furneaux - BCHS would do upkeep of road and get necessary approvals.

**Comment/ Question adjourned. 9:10 PM**

#### **Disclaimer**

**The above notes are not intended to be a verbatim record of the Public Information Meeting held on August 27<sup>th</sup>, 2024 but instead capture broadly of the dialogue that took place between the public and the applicant.**

# SUPPORTING TOURISM DEVELOPMENT IN THE WEST CHILCOTIN

ECONOMIC, SOCIAL, AND PUBLIC SAFETY BENEFITS FOR LOCAL COMMUNITIES



Bella Coola  Heli Sports

## 01 EXECUTIVE SUMMARY

A new premium lodge at the heart of the Chilcotin supports the BC Government's development goals for rural areas.

Tourism can be a sustainable and prosperous industry in which British Columbia's remote regions have many natural advantages. The benefits of fostering tourism in these communities cannot be overstated and the industry should be part of rural development strategies.

The West Chilcotin is one such region. Its economy has historically been tied to extractive industries that are now in decline. Corporations, most often owned by outsiders, have not acted as good stewards of the land and now the resources are depleted, the jobs have disappeared, and the skilled workers have moved away. This has scattered families and left

an aging population with diminished resources and waning ability to sustain their community.

Tourism, in contrast, is a growth industry with the power to foster lasting stewardship, create jobs, and revitalize the local economy. Tourism businesses are often locally owned and operated and employ people who live or wish to settle in the area. Bringing young people and jobs strengthens the community, and makes it a safe, healthy, and resilient place to live.

The BC Government has made commitments to reconciliation with First Nations, career training for youth in the workforce, diversifying rural economies to make them more robust, and creating quality jobs in sustainable industries. A new premium lodge at the heart of the Chilcotin supports all those obligations.

BC residents feel the tourism industry plays an important role in the economic well-being of:

British Columbia:

94%

Their Individual Communities:

80%

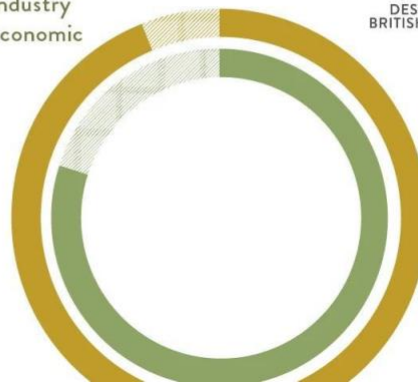


Image source: [Destination BC](#)



## 02 INTRODUCTION

British Columbia is a world leader in providing quality outdoor adventure experiences. It is internationally recognized for the hospitable nature of its people, the stunning beauty of its landscapes, the professionalism of its ecotourism businesses, and the rich history of its many indigenous First Nations. For these reasons, adventure tourism is booming in much of the province.

The West Chilcotin Plateau should be at the forefront of the adventure tourism boom. It is an exceptionally beautiful place with friendly people and a wealth of adventure activities. Unfortunately, it has not been able to take advantage of these strengths to grow its tourism numbers. This is due to a lack of appropriate infrastructure (accommodation, roads and airports), distance from population centers (the nearest major crossroad is over 250 km away in Williams Lake), and the expense and time it takes to travel to the region.

[Bella Coola Heli Sports](#) (BCHS) sees an opportunity to leverage its many years of experience and reputation operating an ecotourism business in the region, to develop a premium four-season lodge.

For the past 16 years, BCHS has offered a boutique heli-ski program at White Saddle Ranch located 22 km south of Tatla Lake, the most centrally located community in the West Chilcotin. The operation is successful because heli-skiing caters to international visitors with the resources and determination to travel to this remote area.

BCHS sees an opportunity to grow this business and the ownership group is proposing to invest upwards of \$35 million to build a new lodge property in the region with state-of-the-art accommodation and a full range of services. With this new facility BCHS anticipates

quadrupling heli-ski visitors to the region as well as expanding into year-round operations by offering a range of summer ecotourism programs that puts stewardship at the forefront.

To be successful the lodge site must have dramatic views and be close to ski slopes as well as a variety of other wilderness activities. After an extensive search, BCHS has identified a location 30 km south of Tatla Lake in West Branch just north of Middle Lake.



The proposed lodge site  
Image source: Bella Coola Heli Sports

BCHS and its partners will develop the property into an internationally acclaimed and iconic local landmark capable of drawing tourists from around the world to visit the Chilcotin.

BCHS will work with local landowners, tourism operators, and First Nations like T̓s̓ideldel, to create and provide world class adventure activities. The addition of long term, quality tourism jobs in the region will compensate for an anticipated decline of jobs and tax base as timber extraction is reduced in the coming years. Expansion into tourism will help diversify the region's economy and build more resilient communities. The Cariboo Chilcotin Land Use Plan explicitly calls for supporting First Nations opportunities to diversify into tourism.



The goal of this project is to create an iconic four-season lodge with international stature that is the world's premier destination for heli-skiing and a leader in summer ecotourism programming. The economic benefits derived from this development, combined with the social and public safety benefits, will have a strong positive impact on the competitiveness of this region and help transform the West Chilcotin for the better.

It should be noted that BCHS already operates a successful four-season lodge in the Bella Coola Valley at [Tweedsmuir Park Lodge](#) and is an innovative leader in developing premium tourism adventures.

Its fall grizzly bear viewing program is part of Destination Canada's [Canadian Signature Experiences](#) collection. BCHS is also a 5-time winner of the [World's Best Heli-skiing Operator](#) at the World Ski Awards.

In 2019, BCHS became the world's first [Climate Positive](#) heli-ski operator by offsetting 110% of its carbon output. Current initiatives include carbon capture programs with [Tomorrow's Air](#) and the launch of a [sustainability fund](#) that invests 2% of company sales into wildlife research, ecosystem rehabilitation, and support for local communities.

In short, BCHS has the knowledge, resources, determination, and skills to develop and operate a new lodge that will be successfully operated in the most sustainable manner possible.



A grizzly bear family on the bank of the Atnarko River.  
Image source: Tweedsmuir Park Lodge



Image source: Bella Coola Heli Sports



## 03 ECONOMIC BENEFITS

The **\$35 million** financial investment required to build the lodge and then in future years, operate the property, will provide significant long-term and lasting contributions to the local and wider BC economy.

This impact occurs directly as BCHS invests capital, generates income, hires workers, purchases goods and services from suppliers, and contributes taxes to the government. It also occurs indirectly as these initial expenditures in turn cycle through the BC economy as employees, suppliers, and the government spend on equipment and services.

The regional tourism economy will benefit tremendously. The new lodge will encourage locals to develop skills that they can then use to build their own tourism businesses in the area. The new lodge will also generate high-quality marketing collateral, showcasing the best the area has to offer. This collateral will find its way into articles and videos published internationally in traditional media as well as social media outlets. Local tourism marketing boards like [Land Without Limits](#) and [Destination BC](#) will further leverage the collateral to bring worldwide attention to the region.

The economic benefits and added vitality will be very welcome in The West Chilcotin. This is a rural area with an aging population and few other economic opportunities. Revenue flowing to local employees and suppliers in the winter months will be particularly important to help smooth out cash flow in these lean months. The impact of stable year-round employment will translate to the retention and development of local talent and human capital.

### Initial Financial Investment

Approximately **\$35 million** will be spent on site prep, building sustainable off-grid power generation capacity, and construction of the new lodge. This will be the largest and most exciting tourism investment in The Chilcotin for a very long time. It will draw attention to the region, will build confidence amongst current tourism operators that the West Chilcotin can be a profitable area in which to operate, and will ultimately bring further investment as more awareness of the region is generated, and momentum builds.

Once the initial investment is completed, additional capital will continue to flow into the project. Activities will need to be developed and over time facilities need to be upgraded. For example, in Bella Coola BCHS invested \$975,000 in upgrading its staff housing in 2021 and invested \$1.25 million in 2023 to build a new equipment room and two executive guest suites.

### Revenues from Operations

BCHS anticipate's that the new lodge will generate **\$12 million** in annual sales by the third year of operations. These sales are primarily to international visitors, meaning that these are "export" dollars being generated and are a net benefit to BC's economy. Guests who come specifically to stay at the lodge, would not otherwise be visiting the region, and will therefore not displace revenue from other local tourism operators. Instead, there will be a net long-term benefit as awareness for the region grows and BCHS guests return in future years with families and partners exploring other parts of the Chilcotin Plateau.





Furthermore, BCHS guests will be spending on ancillary services and products such as hotel stays in Vancouver, side trips to other tourism destinations (e.g., Whistler), retail clothing, repairs and maintenance, car rental and other transportation services, as well as additional tours and experiences. An [economic analysis](#) of the heli-ski industry published in 2019 suggests that for each \$100 of direct revenue the “multiplier effect” generates an additional \$50 of economic activity elsewhere in the province. An operating budget can be made available on request.

### Employment

Construction of a new lodge will be a multiyear effort and require a wide range of services, including architects, project managers, construction workers, excavators, plumbers, electricians, interior designers, landscapers, and other traditional trades. A rough estimate suggests that the construction phase will generate approximately 75 person-years of full-time employment.

Once the lodge is built, the annual payroll to run the lodge and the associated adventure programs is anticipated to grow to well over \$2.5 million by the third year of operations. This includes professional guides, culinary teams, maintenance workers, frontline and back-of-house hospitality workers, dispatchers, and managerial-level staff in the form of lodge managers and guide managers. BCHS pays above minimum wage with entry-level staff earning \$18 to \$20 per hour plus tips averaging an additional \$100 per day during peak operating times. BCHS employs a skilled workforce that gains pride from performing at an elevated level in their respective professions.

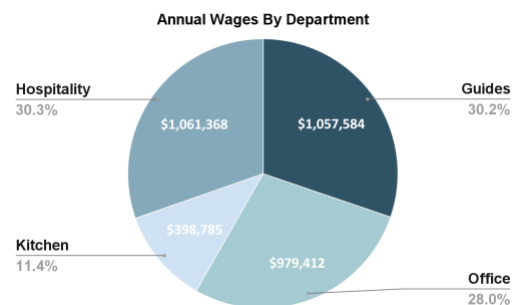
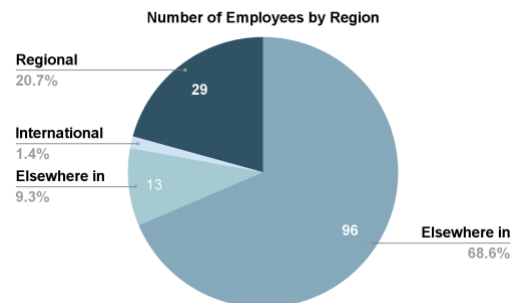
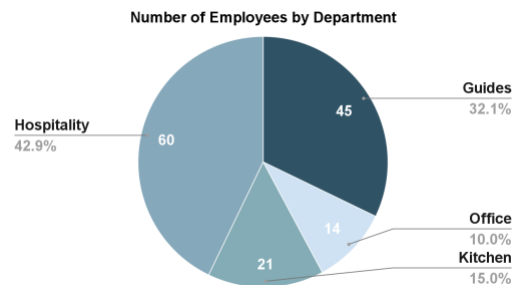
Local residents and members of the local T̓silhqot̓'in communities will be eligible for these jobs should they be interested.

BCHS will provide training to ensure locals have requisite qualifications as well as encourage non-residents to settle in the region. Both strategies will support the development of a local pool of skills that can then be applied to other ventures in the region.

*“Tourism is also highly inclusive. Compared to other sectors, it employs a higher proportion of women, youth, and newcomers.”*

Quote source: Federal Tourism Growth Press Release

Employment will also be created by hiring subcontractors to provide services for the lodge: local plumbers, electricians, mechanics, and plow trucks, amongst others, will all benefit.

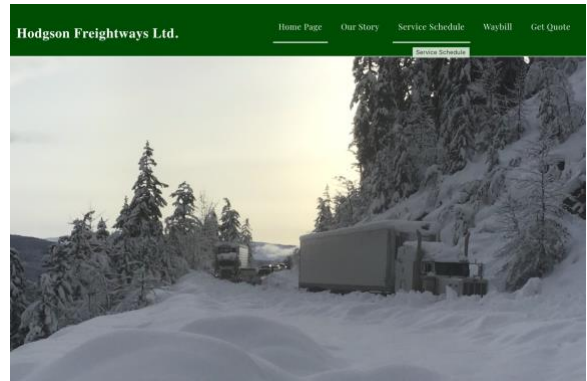


## Supplier Contracts

BCHS works with many suppliers that provide goods and services. This ranges from big-ticket items like fixed-wing and helicopter transportation services, to food, lodge supplies, and retail clothing. The addition of a new lodge will expand and strengthen that network.

The current supplier network includes local hobby farmers that supply food for the lodge's kitchens, regional delivery company [Hodgson Freightways](#) which has operated in the Hwy 20 corridor since 1912, [Pacific Coastal Airlines](#) which began its operations as Wilderness Air in the Bella Coola Valley more than 40 years ago, and [White Saddle Air Services](#) and [White Saddle Country Inn](#) based in Bluff Lake since 1975.

The added business the suppliers gain will allow for the expansions of services in the West Chilcotin and in some cases be critical to maintaining a minimum level of service for the region. For example, due to operational challenges resulting from a lack of reliable ground services, Pacific Coastal discontinued scheduled flights into [Anahim Lake Airport](#) in the autumn of 2022. This also impacted service at the [Bella Coola Airport](#) because Anahim is the designated bad weather backup. Traffic volumes generated by BCBS have led to the expansion and renovation of both terminals, as well as supporting general maintenance and the improvements required to keep both airports viable as hubs for regional commercial aviation. These airports are critical and BCBS keeps a close eye on the challenges faced by the airports and works with all agencies and partners to keep them operational.



Trucks on "The Hill" down to Bella Coola.  
Image source: [Hodgson Freightways](#)

### BCBS Top Suppliers

Local Vendors - Hwy 20 corridor		
	No. Trans.	Two Year Spend
B W Bonn Interiors	8	\$836,946.00
Bella Coola Eagle Lodge	63	\$400,072.57
Gibbs Construction Inc	15	\$352,308.98
White Saddle Country Inn	14	\$296,804.48
Anonymous	6	\$287,115.14
Terra Nostra Guest Ranch	68	\$163,416.84
Hodgson Freightways Ltd.	180	\$117,578.19
Mecham Sales & Service Ltd.	124	\$93,720.75
Cariboo Propane Ltd	24	\$85,529.34
Western Wood Heat Inc.	17	\$82,181.09
Anonymous	23	77,310..61
Townsite Home Hardware	223	69,428.47
Wilmax Electric Ltd.	14	62,391.74
Provincial Vendors		
	No. Trans.	Two year Spend
West Coast Helicopters and Maintenance	329	\$3,703,202.80
Skyline Helicopters Ltd.	105	\$2,496,527.35
Pacific Coastal Airlines	279	\$912,449.05
Gordon Food Service	426	\$856,621.59
Northwest Fuels Limited	16	\$722,461.27
Alkan Air Ltd.	106	\$566,401.10
Maple Leaf Adventures Corp	4	\$534,409.84
Arc'teryx Equipment	29	\$176,106.48
Exalt HR Consulting	24	\$109,000.00
Amer Sports Canada Inc.	15	\$107,680.43



### Tax Contributions

BCHS pays corporate taxes, payroll taxes, liquor taxes, employer health taxes, hotel taxes, CPP, EI, PST, GST, property taxes, and permit/license fees. These taxes contribute to the maintenance and improvement of local infrastructure, public services and wages, and community development initiatives. In addition, BCHS employees pay income taxes as well as make CPP and EI contributions on the wages they earn from BCHS operations.

For the most recent reporting year, tax payments generated by BCHS’s operations totaled \$1,713,083. Employees of the company contributed a further \$1,082,615. With the addition of a new lodge and increased operations, tax contributions will increase by approximately 50% for a total contribution projected to exceed \$4 million annually.

<b>Tax Contributions For Most Recent Reporting Year</b>	
<b>By BCHS</b>	
GST	\$717,719
Corporate Taxes	\$563,087
Employer CPP Contributions	\$186,804
Employer Health Tax	\$77,781
Employer EI contributions	\$75,392
Licences and Property Taxes	\$33,820
PST	\$30,964
Liquor Tax	\$27,516
<b>Total</b>	<b>\$1,713,083</b>
<b>By BCHS Employees</b>	
Income Tax (payroll) deducted	\$841,960
Employee CPP Contributions	\$186,804
Employee EI contributions	\$53,851
<b>Total</b>	<b>\$1,082,615</b>

### Diversifying the Local Economy with Sustainable Industries

Remote communities in British Columbia often rely on a limited number of extractive industries: mining, forestry, and commercial fishing. These industries are cyclical and generally in decline. Tourism by contrast is a non-extractive industry that can support rural communities for many years to come. Hikes can be repeated with multiple guests, bears can be viewed from year to year, and snow is a renewable resource that falls almost daily in the winter months.

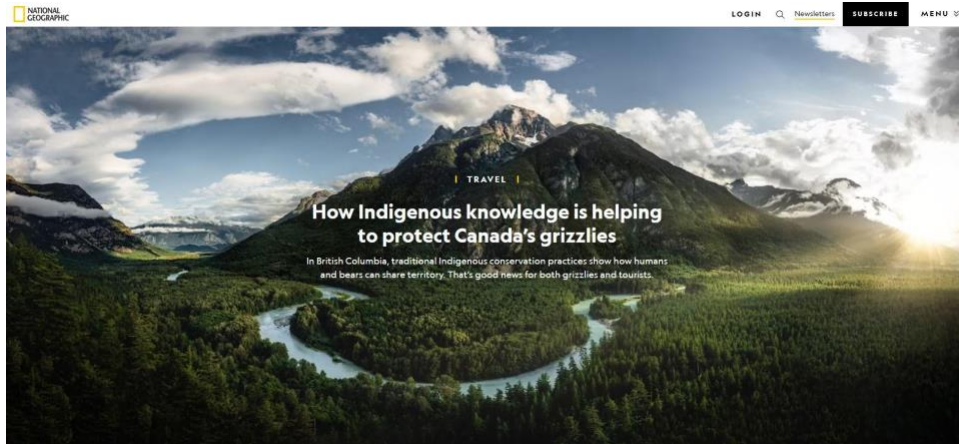
A more diverse rural economy based on sustainable businesses will smooth out disruptive economic cycles, increase the robustness of the local business ecosystem, and build a better, more resilient community.

### Marketing Exposure and Collateral

With its unique and visually attractive offerings, BCHS attracts journalists from around the world. This promotes BCHS’s business, but also promotes the regions in which BCHS operates, encouraging travel to the local communities and supporting all tourism providers.

Recent articles produced by journalists hosted at BCHS facilities include the cover article for [BC Magazine](#) published in the fall of 2021 and an article in [National Geographic Travel](#) published in March 2022.





Views overlooking the Bella Coola River and Mount Stupendous.  
Image source: [National Geographic](https://www.nationalgeographic.com/travel/indigenous-knowledge-protect-grizzlies/)

Photo and videographers employed by BCHS, or hosted at one of the company's lodges, create high-quality aspirational imagery. This imagery is then leveraged by federal, provincial, and regional marketing organizations to highlight and promote the best that the region has to offer and is to the benefit of all tourism operators.

While difficult to quantify, media generated during and after the construction of a new lodge will have a significant impact in the form of exposure and brand value for the West Chilcotin both regionally and internationally.

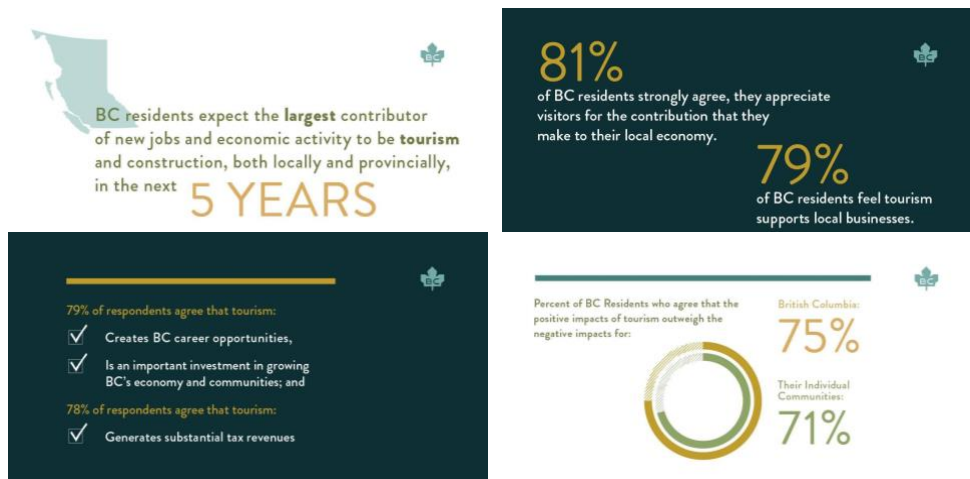


Image source: [Destination BC](https://www.destinationbc.ca/en/infographic)



## 04 SOCIAL BENEFITS

When considering the benefits of adding a large economic driver like a new lodge in a remote community it is important to look beyond the economic impacts. The positive social benefits match or even outweigh the economics.

A new lodge will be a focal point in the West Chilcotin. It will support community development, enrich the local culture, be a source of skill development, contribute to local pride of place, and introduce worldly individuals to the area - many of whom are business leaders able to invest in projects and or have philanthropic organizations that support worthy causes.

### Develop and Improve Community Infrastructure

A new lodge will be a catalyst for the maintenance of existing local infrastructure assets as well as spur improvements, thereby contributing to the overall development of the West Chilcotin Plateau. Increased tourism numbers will require improvements to airports, roads, and upgraded utilities. These infrastructure developments not only benefit BCHS and other tourism businesses, but also enhance the overall accessibility and attractiveness of the region for other activities. For example, in the past BCHS has provided the financing and technical expertise for the installation of a relay station to help disburse internet services across the West Chilcotin.

In addition, as a leading tourism business in the area, BCHS will in many cases take the lead in lobbying government agencies and regulators to maintain and improve services. In the past BCHS has played a major role in reinstating ferry service into Bella Coola, sat on the Ministry of Tourism's Advisory Council, been a member of Destination British Columbia Tourism Marketing Advisory Committee, and played a role in ensuring that scheduled flight services into and out of Anahim Lake were maintained.



BC Ferries Northern Seawolf in the Bella Coola harbour.  
Image source: [BC Ferries](#)

As local resources are improved and enjoy increased usage, this will over time contribute to lower costs for these services. For example, Pacific Coastal Airlines may be able to reduce costs to fly to the region if passenger volumes increase. Today it costs more to fly from Vancouver to Anahim Lake than to fly from Vancouver to Toronto or even London, England.



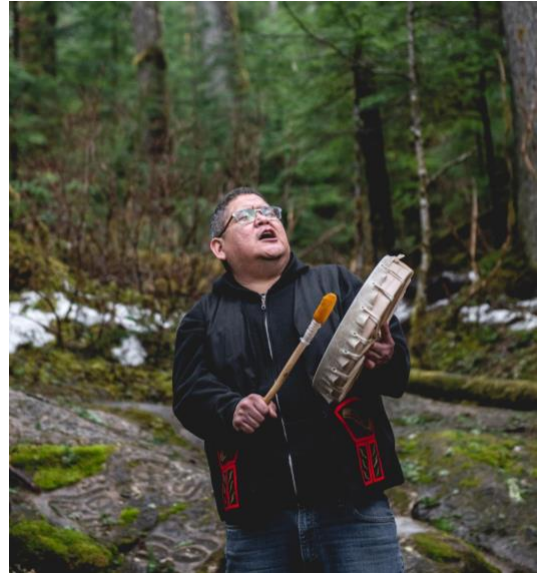
### Cultural Enrichment

Building a new lodge outside of Tatla Lake will attract young, skilled, energetic, and resourceful people to the area who will be encouraged to settle close by, raise families, and participate in building up the community. They will enroll their kids in the local school, participate in local clubs, as well as volunteer for local organizations and charities. They will bring new ideas and add vibrancy to what is otherwise an aging and isolated community. For example, several BCHS staff with year-round work at Tweedsmuir Park Lodge have settled in the Bella Coola Valley. This includes current and past employees Cody Ratcliff the Maintenance Manager and his family, Annika Granander the Hospitality Manager, Katherine Phillips the Executive Chef, Julie Fulford and Jeremy Pilotte and their kids, Guide Sam McCoy and his partner, and Trevor Provost and his family.

In addition, ecotourism and heli-skiing attract visitors from around the world. This brings a diverse range of people to rural communities, promoting cultural exchange and creating opportunities for locals to interact with individuals they otherwise may never meet. This leads to a broadening of horizons through the sharing of stories, and thereby an opportunity to promote and preserve local traditions, arts, and crafts.



Burns Lake Outdoor Education Class atop the Via Ferrata.  
Image source: Tweedsmuir Park Lodge



Nuxalk Nation Tour Guide “Xawisus” Chris Nelson.  
Image source: Tweedsmuir Park Lodge

### Skills Development

BCHS conducts extensive training for all its employees. Skills learned can then be applied to other industries. Past employees of BCHS have gone on to work in the film industry as riggers, do avalanche control work for Highways and Parks, employed culinary skills learned at the lodge to start their own restaurant, and have grown into capable leaders managing teams of people in a variety of settings.

### Fostering Community Pride and Identity

A world-renowned ecotourism and heli-ski business that showcases and protects the unique natural beauty and recreational opportunities that the community has to offer will strengthen a collective appreciation for the region. The new lodge is sure to become an iconic landmark that will instill a sense of pride of place among residents.



### Philanthropic Support for Local Charities

BCHS is committed to supporting the health and wellness of the communities in which it operates, preserving wildlife and the environment, and addressing our carbon footprint, so that future generations can experience the same wonders that we experience today. It is committed to not just following best practices and environmental trends, but to be pioneers in creating a more sustainable and balanced business model.

To support this commitment BCHS has initiated a 2% sustainability fee on the value of all programs sold. It is anticipated that this will raise in excess of \$225,000 to support local initiatives like salmon habitat restoration, cultural revitalization for First Nations, scholarships for local youth looking to further their studies, wildlife research projects, avalanche safety research, and initiatives to reduce carbon in the atmosphere. The program has only been active for a short time but has already provided \$6,000 for local scholarships, \$14,000 for a fund to erect a Totem Pole at Stuie BC, \$6,000 for a new raft for the Coastal Guardians, and \$34,000 towards [HeliCat Canada's sustainability fund](#) which in turn funds research into wildlife issues and avalanche research. The sustainability fee will be applied to bookings for the new lodge and will therefore increase the funds available by an anticipated 50%.

In addition, some guests have an interest in philanthropy and the financial resources to make sizable donations. BCHS is proud to have facilitated a \$250,000 donation to the House of Numst project in Bella Coola, an \$800,000 grant to an outdoor program for Nuxálk youth that runs in Kimsquit Bay, and a \$2.25 million grant to Xení Gwet'in in Nemiah to construct and maintain a riding centre to support and further their horse-based culture.



The original House of Numst was constructed in the late 1960s and is now scheduled for a major restoration.

Image source: [The Williams Lake Tribune](#)



## 05 PUBLIC SAFETY BENEFITS

The construction of a new lodge will improve public safety. The lodge will have state-of-the-art rescue equipment and employ Professional Guides trained to use it. These are fundamental resources that are often overlooked, but nonetheless are of tremendous value in times of emergency response and crisis.

It should be noted that in many instances the costs of responding to emergencies and assisting the public are borne by the lodge and its staff. Wages for first responders, costs of mobilizing resources (equipment and helicopters), loss of business (the lodge may have to refund guests for days interrupted by the response to a public call for assistance), and counseling fees to manage the psychological impact and trauma from responding to a crisis, are examples of lodge costs incurred in assisting the public in emergency situations.

### Additional Emergency Service Resources

Heli-skiing and summer eco-tours are conducted in remote wilderness settings far from provincially provided emergency services. The lodge's highly trained Professional Guides and its in-house rescue equipment and transportation capabilities will improve local response times and add significant capability in the event of an emergency. Over the years that BCHS has been operating, its Guides have been involved in high-angle accident recovery, led efforts to find missing people, supported local search and rescue organizations with donated equipment, and most dramatically, saved the life of a pilot that crashed in the mountains.



BCHS guides performing rescue practice at guides training.  
Image source: Bella Coola Heli Sports



BCHS guides educating guests on grizzly bear ecology.  
Image source: Tweedsmuir Park Lodge

### Research and Education

The lodge will support a variety of research efforts with financial and technical resources, guide services, accommodation, and local knowledge and data. For example, BCHS has supported several studies looking into [bear behaviour](#) and the resilience of [wildlife habitats](#), as well as providing funding for public bear awareness programs and electrical fencing around gardens.

BCHS is also an important [provider of data](#) for organizations like Avalanche Canada that rely on inputs from third parties to formulate and post daily public avalanche hazard bulletins used by all winter backcountry recreationists. In the West Chilcotin and Bella Coola BCHS is the sole source of this data.





## Helicopter Resources

Helicopters are very useful in emergency situations. Helicopters help to fight fires, provide transportation for goods and services when roads are impassable, and are the fastest way to move an injured person to primary care. Remote communities and the people living there would be much more vulnerable without helicopters.

The helicopter business, however, is volatile and complicated by a boom-and-bust cycle of revenue. Business success is not guaranteed and is subject to further operational pressures from a public that doesn't want helicopter traffic in their backyard, escalating insurance costs, and evolving safety standards imposed by a variety of government agencies.

To keep flying, many helicopter operators depend on heli-skiing for business in the slow winter months. This provides revenue to pay the bills and keeps skill levels current by providing year-round employment for pilots and mechanics. Without the benefit of helicopter skiing, a number of helicopter companies would likely cease operations. This is particularly true for helicopter companies in remote areas, where they are needed most. For example, BCHS has been West Coast Helicopter's biggest winter account for the past 15 years and is the primary reason the company has maintained a year-round operational base in the Bella Coola Valley. The impact of reliable and timely helicopter services on the security of remote communities should not be underestimated.



Wildfires in British Columbia.  
Image source: [Skies Magazine](#)

## Leadership

Lodge staff learn leadership skills. These skills are transferable to local organizations. For example, in Bella Coola one of BCHS's staff has taken over leadership of the local [search and rescue](#) organization, another staff member has provided leadership in expanding and maintaining the local [hiking trail network](#), the Executive Chef is providing leadership in the local [food security alliance](#), and yet another member provides leadership in organizing the [Bella Coola Rodeo](#).



## 06 CONCLUSION

A new lodge in the West Chilcotin will bring significant economic, social, and public safety benefits to surrounding communities. It will provide career training for youth in the workforce, help to revitalize a rural economy and create quality jobs in a sustainable industry.

It will grow the local economy, generate employment, provide revenue for local businesses, and contribute considerable long-term tax revenues to all levels of government. It will stimulate the development of infrastructure and ancillary services.

Socially it will promote community development and revitalize the culture with an influx of young energetic people. Public safety will improve with additional resources and skills. And it will foster reconciliation with First Nations communities as opportunities for employment and business partnerships take place.

In summary, the construction and operation of a new, high-profile wilderness lodge property will have a positive and lasting impact on a region that is remote, has struggled in the past, and has few other business opportunities. The lodge will play a major role in supporting, strengthening, and making The West Chilcotin and its people more resilient in the face of a rapidly changing world.



A pair of hikers appreciating views of an alpine glacier.  
Image source: Tweedsmuir Park Lodge



Cariboo Regional District Rezoning Application File 3360-20/20240014  
David King/Don Vanderhorst Consulting Ltd.  
Chilcotin Area Rural Land Use Amendment Bylaw No. 5475, 2024  
District Lot 1090 and 1091, Range 2 Coast District on Bluff Lake Road

Comments from Ministry of Water, Land and Resource Stewardship (WLRS)  
Ecosystems Section, Land Use Planning and Cumulative Effects Division, Cariboo Region  
Becky Bings, M.Sc., R.P.Bio, Ecosystems Section Head  
Carla Grimson, R.P.Bio, Senior Aquatic Ecosystems Biologist  
October 18, 2024

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### **Introduction**

The purpose of the re-zoning application for CL 1090 and 1091, as stated in the application, is to allow for a tourist commercial heli skiing resort, which requires a change from the current zoning of Rural 1 (RR1) and Resource/Agricultural (RA) to a form of Tourist Commercial (C2). Unfortunately, the Ecosystems Section of WLRS did not receive the referral for this re-zoning application until September 26, 2024, and we apologize for the delayed response.

The Ecosystems Section, Land Use Planning and Cumulative Effects Division of WLRS does not support the re-zoning application of District Lots 1090 and 1091, due to potential impacts of increased helicopter activity in this area on already declining mountain goat numbers. Further details are supplied below, with additional comments on aquatic resources.

### **Mountain Goats**

#### **1. British Columbia has approximately half of the world's population of mountain goats and they are at risk and declining locally.**

With approximately half of the world's population of mountain goats found in British Columbia, their conservation provincially has global importance (B.C. Ministry of Environment, 2010). The management goal for mountain goats in British Columbia is to **maintain viable, healthy and productive populations of mountain goats** throughout their native range in British Columbia (B.C. Ministry of Environment 2010). The management objectives include:

- to effectively maintain suitable, connected mountain goat habitat;
- to mitigate threats to mountain goats;
- to ensure opportunities for non-consumptive and consumptive use of mountain goats are sustainable. (B.C. 2010)

The importance of management in and near goat winter and natal habitat was described in several objectives in the 2007 South Chilcotin Sustainable Resource Management Plan under the Cariboo-Chilcotin Land Use Plan (CCLUP). In 2015, the province designated this species as at risk (blue-listed, special concern), due to population declines and moderate to imminent threats. The **overall threat impact value is** calculated as **high** due to cumulative effects. The **highest ranking threat** was **human intrusions and disturbance** (B.C. Conservation Data Centre 2015).

Mountain goat populations in the Westbranch valley are considered to fall into two mountain goat population management units (PMUs): the Niut PMU to the East (consisting of the Nude Creek, Ottarasko, Niut, and Whitesaddle survey blocks), and the Pantheon PMU to the west (consisting of the Perkins Peak, Colwell Creek, Mammon Mountain, Frontier Mountain, and Scimitar Creek South survey blocks). Although survey data is limited, mountain goat populations have **decreased 35-68%** in some areas of the Niut PMU in the past 20 years of survey monitoring (Ottarasko and Niut areas respectively). In the Pantheon range, the most recent survey (2023) indicated a **decline from 78 to 65** observed goats since 1998 in the Perkins Peak survey block, which encompasses the winter range areas closest to the re-zoning application area. The exact cause of declines in this region are not known, but merits more investigation and a precautionary approach to management until populations increase and stabilize.

Native mountain goat populations generally have low reproductive rates, which limits resiliency to population declines and increases the risk of localized extirpations within small herds (Bailey 1991, Festa-Bianchet *et al.* 1994, Hamel *et al.* 2006, Festa-Bianchet and Côté 2008, Rice and Gay 2010, White *et al.* 2018). This limited potential for population growth, combined with strict habitat requirements and high fidelity to seasonal home-ranges, mean that mountain goats are particularly vulnerable to negative stressors to their populations or habitat, and recovery following declines can often be prolonged or uncertain (Fox *et al.* 1989, Keim 2004, Festa-Bianchet and Côté 2008, Shafer *et al.*, 2011, 2012). As such, management strategies for mitigating negative effects of human disturbance are necessary to ensure mountain goat population productivity and viability, and ultimately, effective species conservation (B.C. Ministry of Environment 2010).

## **2. Mountain goats are sensitive to helicopter disturbance.**

Mountain goats are particularly sensitive to aerial disturbance such as helicopters with a range of responses documented, including reduction of foraging, increased movement rates and energetic costs, and displacement from critical habitats (Foster and Rahe 1983, Côté 1996, Goldstein *et al.* 2005, Cadsand 2012, Côté *et al.* 2013, Richard and Côté 2016, White and Gregovich 2017). Less visible physiological stress responses can also occur in response to disturbance, impacting both immunological health and reproduction (MacArthur *et al.* 1982, Stemp 1983, Harlow *et al.* 1986, Chabot 1991, Downs *et al.* 2018, Dulude-de Broin *et al.* 2019).

Responses to disturbance are complex and can vary according to the risk tolerance of the individual, the environment it is in at the time of disturbance and a range of other factors related to risk:reward trade-offs (*i.e.*, an animal may remain in a disturbed area if there is little available choice of alternate habitats, or it has chosen that area for specific resources not available elsewhere). This lack of an overt “fleeing” or displacement response, or apparent tolerance of disturbance, does not equate to habituation as other less visible negative impacts such as reduced foraging or physiological stress responses related to disturbance may still occur. It is also important to note that the most sensitive animals in a population are often females with kids, which are critical for population growth and stability. Longer-term consequences of disturbance to habitat use and demographics remain only partially understood, but there is broad consensus across existing research that short-term responses, elicited frequently enough, could contribute to population declines and habitat abandonment (NWSGC 2020).

Given the known sensitivity of mountain goats to disturbance and vulnerability to critical population declines, a precautionary approach to management that minimizes short-term behavioral disruptions is recommended to ensure effective conservation of mountain goats; particularly in areas where cumulative impacts to goats are considered high (NWSGC 2020). In B.C., relevant science-based

recommendations have been developed to help mitigate potential impacts of helicopter-recreation based disturbance and help ensure effective conservation of mountain goats.

**3. Science-based guidelines have been developed that provide direction to commercial tourism to help minimize impacts on goats. The re-zoning application, which involves intensive helicopter activity, is located within a recommended flight-restricted area adjacent to mountain goat winter range.**

The purpose of the rezoning application is to establish a heli ski resort for Bella Coola Heli Sports. The location of the helicopter base is within the 1500m horizontal and 500m vertical zone where it is recommended that helicopter activity be avoided during the critical wintering and natal periods for mountain goats (in the Cariboo Region, this is from November 1 to July 15), as shown in Figure 1.

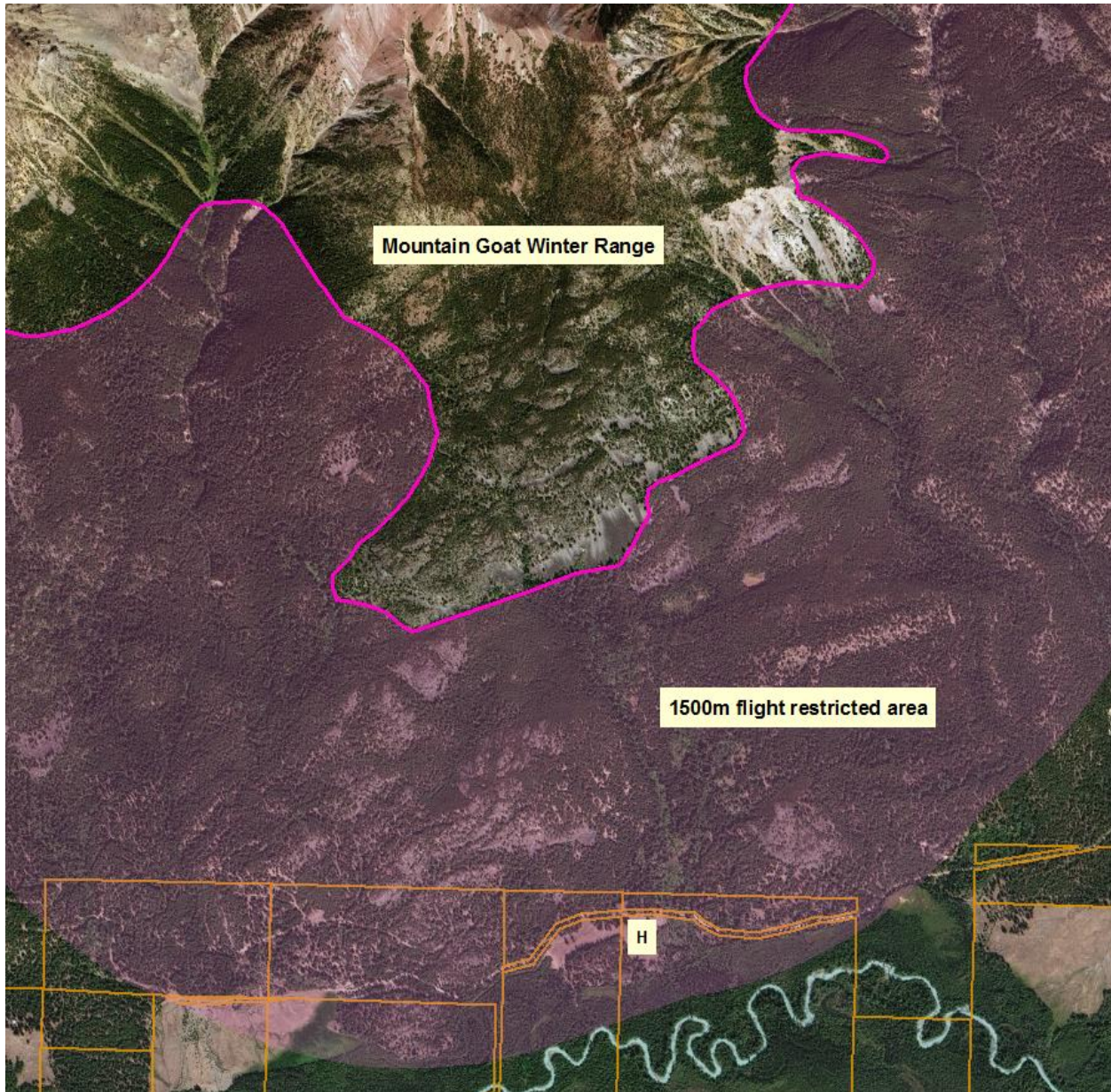


Figure 1. The letter “H” depicts the proposed heli pad to be developed in relation to Mountain Goat Winter Range (Purple outline) and within the 1500m buffer (purple shading) around the winter range where flight restrictions are recommended.

The recommended 1500m horizontal and 500 m vertical separation distances of helicopters from mountain goat winter range areas is based on a number of peer-reviewed scientific studies completed in B.C., Alaska, and Alberta (Côté 1996, Frid 2003, Gordon 2003, Cadsand 2012, Goldstein *et al.* 2005, Côté *et al.* 2013). In these studies, acute, short-term behavioral responses to helicopter activity were consistently documented at distances of 1.5 km, and up to 2 km and included alteration of movement patterns (both immediate fleeing responses and irregular longer-distance movements in the 48 hours following), changes in behaviour (increased vigilance and decreased foraging), and changes to habitat selection up to 48 hours following disturbance events. Further, direct disturbances from light helicopters (Bell 206 Jet Ranger) were observed to cause longer-term changes in selection of occupied habitat, where goats moved out of the watershed in which the disturbance occurred for a period of 8 days (Jex 2007).

The above recommendations are supported by the Northern Wild Sheep and Goat Council position statement (NWSGC 2020), which was developed by a working group of 18 subject matter experts and cites 95 scientific literature sources. We consider this to be the most recent and comprehensive science-based approach to goat winter range management in relation to helicopter disturbance.

Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia (2006) have been developed jointly by government and the commercial tourism and recreation sectors, and are intended for use by commercial tourism operators. This includes Bella Coola Heli Sports, who would be the operator of the proposed resort in the rezoning application and it is our understanding that, as a member of the Helicat Canada association, Bella Coola Heli Sports uses this document as their primary reference for best practices that guide operations in wildlife habitat.

The Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia include direction to fly a minimum of 1500m horizontally away from areas of high probability or potential use by mountain goats. The guidelines also direct aircraft flights to be separated vertically in this buffer area by 500m. The rezoning application does not meet either of these criteria and direction statements from the Wildlife Guidelines document.

Mitigation of aircraft disturbance by following established commercial backcountry guidelines in and near goat winter and natal habitat was identified as an objective in the 2007 South Chilcotin Sustainable Resource Management Plan under the Cariboo-Chilcotin Land Use Plan (CCLUP). Mountain goat winter range boundaries were identified in the Sustainable Resource Use Plans and more recently updated during the consultation process for establishing Mountain Goat Ungulate Winter Range under the *Forest and Range Practices Act*. None of this information would be new to Bella Coola Heli Sports as WLRS Ecosystems section has recently (2022, 2023) commented on and discussed a nearby similar application on crown land near Middle Lake. In addition, similar comments were provided and discussions held with the consultant Don Vanderhorst Consulting Ltd. on another helicopter-based activity proposed in this valley in 2021.

Although the District Lots proposed for re-zoning are privately owned, it is anticipated that the resultant helicopter activities from rezoning of these lots to a commercial tourism use will have impacts to mountain goats outside of the immediate private property. The re-zoning application also appears to conflict with at least two of the Broad Objectives for land use in the Chilcotin Area Rural Land Use Bylaw

(2.6 “To both encourage the growth and expansion of the tourism industry...in an environmentally friendly manner...” and 2.7 “ To encourage the preservation and sustainability of the natural resources of the area for resource development, including...fish and wildlife habitat...”). Any mitigation measures that may be proposed will not alleviate the concerns of intensive helicopter traffic within buffers (both horizontal and vertical) around sensitive goat winter habitat.

#### 4. There are concerns with increasing helicopter-based activities in this valley.

Currently, the Westbranch valley has an existing active helicopter base servicing recreation, industry, and government activities. Other sources of disturbance/ land uses include mineral exploration and forestry, as well as recreational activities (hiking, back-country skiing, mountaineering, heli-hiking, and proposed tenures for heli-biking). This existing helicopter base is shown in Figure 2 below, in relation to identified Mountain Goat Winter Range, 1500m buffer around winter range habitat and the proposed helicopter base in the rezoning application.

Figure 2 also shows two mountain goat winter ranges adjacent to the existing helicopter base at Bluff Lake that are thought to be largely abandoned or receive limited use, potentially due to the concentration of helicopter activity in this area.

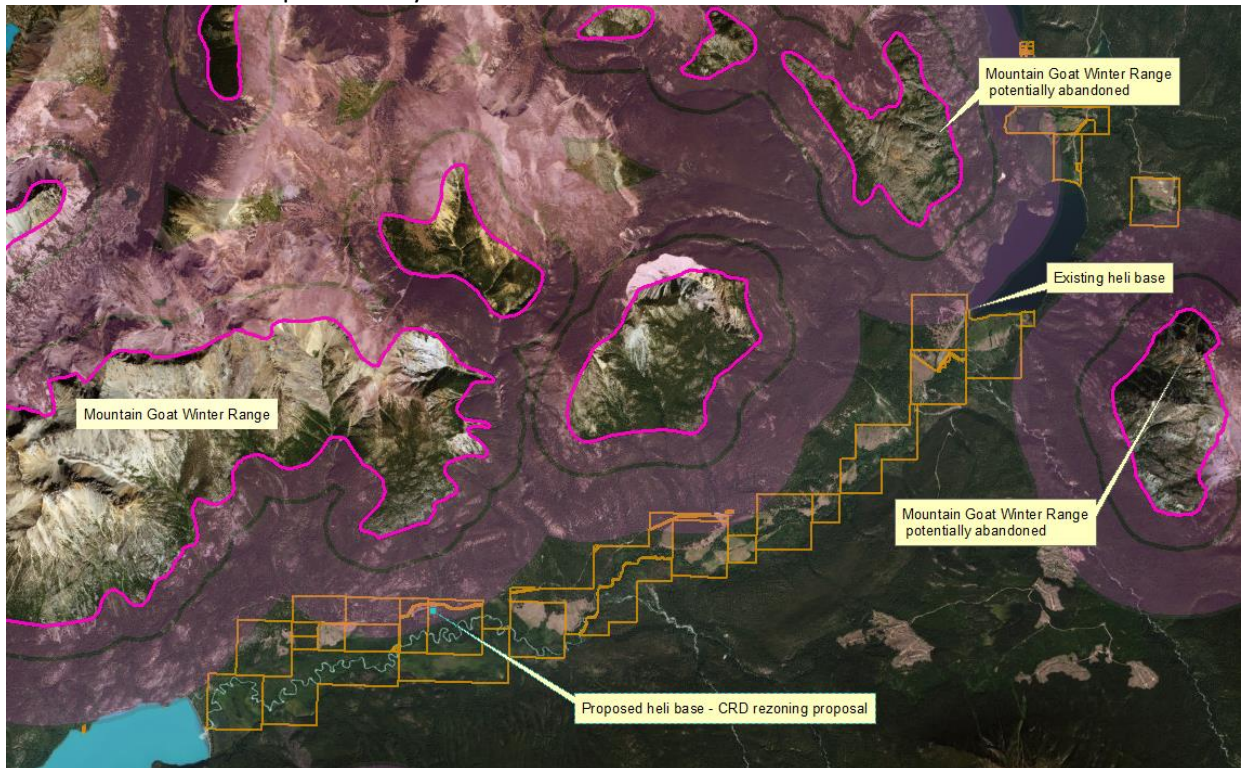


Figure 2. Location of proposed heli pad in CRD rezoning application in relation to existing helicopter base at Bluff Lake, and in relation to Mountain Goat Winter Range (purple outlines) and 1500m recommended restricted flight buffer (purple shading).

The CRD Chilcotin Area Rural Land Use Bylaw provides for a helicopter pad use under the current zoning for the properties (RR1 and R/A), however, a re-zoning of this area for commercial tourism will greatly increase the helicopter activity compared to a rural or agricultural use. In a previous resort location application by Bella Coola Heli Sports (in the same valley), the submitted management plan described

that, in addition to the daily multiple helicopter trips for skiers, operational capacity would increase by 50% and the helicopter base would be used for direct flights from Vancouver and Anahim Lake. It is not known if this would also be the plan for the site being considered for re-zoning.

As mentioned above, while more research is needed to fully understand the longer-term consequences of disturbance to mountain goat demographics and habitat use, there is broad consensus amongst subject matter experts that the known short-term effects of disturbance, if sufficiently intense and of high enough frequency, could translate to negative effects on population demography, such as decreased reproduction and recruitment (NWSGC 2020). The vulnerability of mountain goat populations to critical declines will also depend on the size and stability of mountain goat populations in the disturbed area, other stressors facing the population (including over-harvest, other sources of disturbance, and climate change), and the level of effective mitigation measures practiced. Adding additional helicopter activity to this area, without better understanding the existing stressors and additional management measures that may be required to recover goat populations could lead to further goat population declines within this area and changes in local habitat use patterns.

The Ecosystems section of WLRS is concerned about the potential cumulative impact of helicopter-based and other activities in the Westbranch valley. There are multiple recreational-related applications proposed or anticipated for this area, and now would be a timely opportunity to assess and plan for an acceptable level of recreational activities that also maintains healthy and viable wildlife populations and ecosystems. Before land tenure and development decisions are made on current and future proposals related to commercial tourism in the Westbranch valley, it is recommended that a cumulative effects assessment be completed at appropriate scales for relevant ecosystem component values (e.g. large mammals such as grizzly bear, moose, deer, mountain goat; mesocarnivores such as wolverine; travel and migration corridors, etc).

## **Aquatic Resources**

### **1. Water Sustainability Act**

The CRD re-zoning application and the accompanying Aquatic Habitat Development Report discuss the CRD Shoreland Management Policy requirements using that policy's definition of a watercourse:

***"Watercourse"*** means any natural or man-made depression with well-defined banks and a bed 0.6 metre or more below the surrounding land serving to give direction to a current of water at least six months of the year or having a drainage area of 2 square kilometers or more upstream of the point of consideration, or as required by a designated official of the Ministry of Water, Land and Air Protection.

Most of the discussion in the application is focused on Mosley Creek and associated wetlands, and does not appear to consider any other potential streams as defined under the *Water Sustainability Act*. The *Water Sustainability Act* (WSA) regulates the use, protection and management of water in British Columbia and the definition of a stream in the WSA is much broader than the definition of a watercourse in the CRD Shoreland Management Policy. Under the WSA the definition of a "**stream**" is:

*(a) a natural watercourse, including a natural glacier course, or a natural body of water, whether or not the stream channel of the stream has been modified, or*



(b) a natural source of water supply, including, without limitation, a lake, pond, river, creek, spring, ravine, gulch, wetland or glacier, whether or not usually containing water, including ice, but does not include an aquifer.

Any changes in and about a stream require legislated authorization under the *Water Sustainability Act and Water Sustainability Regulation*.

Provincial base mapping layers (Figure 3) delineate the possible presence of 3 additional streams within the proposed re-zoning location that would usually be field verified and appear to have not been considered in the application.

Spatial files were not supplied in the referral package so individual components of the proposed development could not be precisely located, but it appears that the proposed septic installation and a storage tank are planned to be located in or in close proximity to the mapped streams and drainages leading from steep higher elevation areas (Figure 3), which could be of concern.



Figure 3. Approximate locations of the proposed septic and 45,000L storage tank, “S” and “T”, respectively, in relation to mapped streams (blue lines) from the Fresh Water Atlas spatial layer. “H” depicts the approximate heli pad location. Orange lines are district lot lines, white lines show elevation contours.

## 2. Wetland Evaluation

The Aquatic Habitat Development Report that was submitted with the rezoning application says that a field investigation was conducted on January 25, 2024. Wetlands play a vital role in providing important ecosystem services, and complete assessments of aquatic habitat should be conducted at an appropriate time of year (usually spring, early summer) to be able to determine likely occurrence of plant and animal species as well as confirming extent of wetland boundaries.

The inclusion of identified wetland type, site association and riparian classification (e.g. W1-W5) are also valuable assessment information for determining habitat values and associated risks to those values and the species inhabitants. In the Cariboo Chilcotin Land Use Plan (CCLUP) Land Use Order Section 32, High Value Wetlands for Moose have been identified and include W1, W3, or W5 wetlands, and shrub-carrs. Figure 4 shows the extent of the W5 High Value Wetland for Moose as identified in the Wetland Riparian Classification layer, which is slightly different the wetland mapping in the Freshwater Atlas. Field evaluation in an appropriate season would have helped to reconcile these two different layers and determine adequate setback or buffers from development.

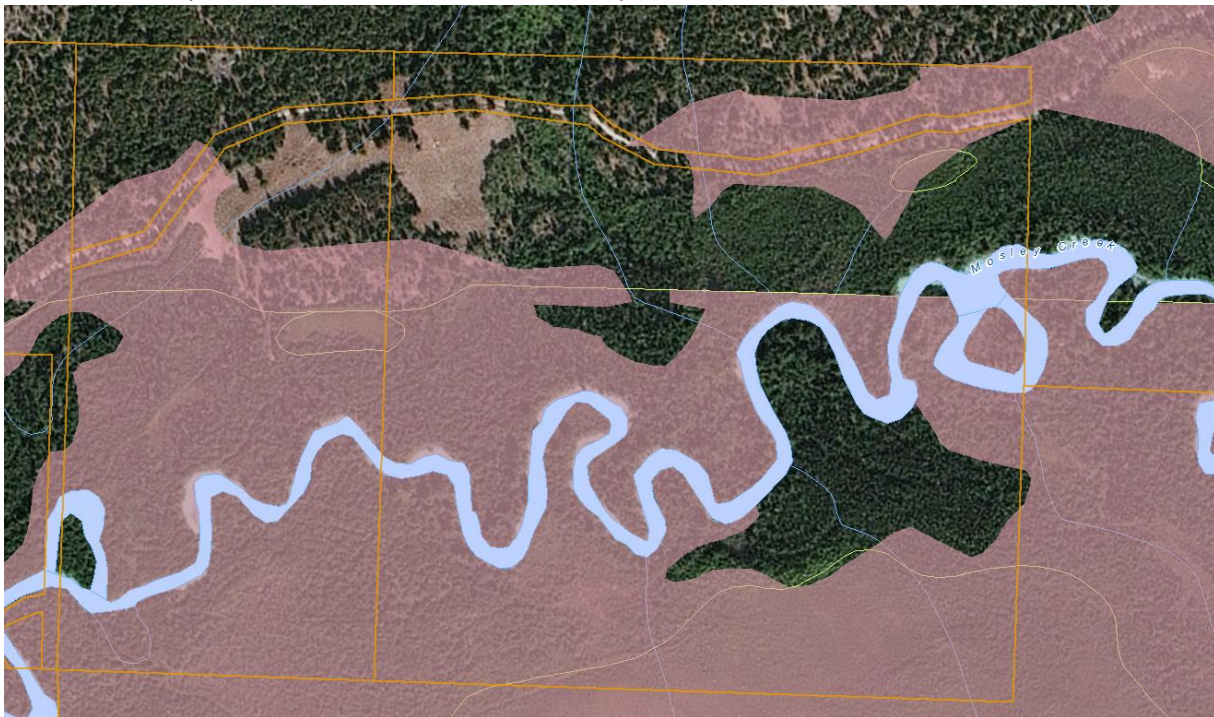


Figure 4. Mapped Wetland Riparian Classification of W5 in the re-zoning application area, indicating that this area is considered as a High Value Wetland for Moose.

### **Summary**

The Ecosystems Section of the Ministry of Water, Land and Resource Stewardship recommends against the proposed rezoning of District Lot 1090 and 1091 to a commercial tourism zoning that includes heli skiing or other commercial tourism involving helicopter use, due to the proximity of the proposed use to critical mountain goat winter range. Aquatic resources, as defined in the *Water Sustainability Act* and additional wetland habitat information related to CCLUP High Value Wetlands for Moose, do not appear to have been adequately considered; however even if aquatic-related assessments were meaningfully addressed, our concerns over the location of the proposal in relation to goat habitat remain.

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John Furneaux  
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25 September, 2024

**RE: Comments on response letter sent to BCHS on 19 September, 2024, from Chris Swan,  
Director Resource Stewardship Operations, Cariboo Region**

Dear John,

At your request, myself, Rob D'Eon, R.P.Bio, and my colleague Len Vanderstar, R.P.Bio, are hereby providing our comments on a response letter you received from Chirs Swan the Director of Cariboo Region Resource Stewardship Operations (BC Ministry of Water, Land and Resource Stewardship), dated 19 September, 2024.

We offer these comments in the context of our combined 50+ years of experience working with heli-ski tenure operators across the province in support of wildlife mitigation practices and implementation of the British Columbia wildlife guidelines for commercial recreation. As well, we specifically offer these comments in the context of our work and familiarity with Bella Coola Heli Sports (BCHS) heli-skiing operations.

The 19-September letter is in response to our previous letter to you whereby we expressed our concerns over the proposed implementation of 2024 mountain goat ungulate winter ranges (UWR) or Wildlife Habitat Areas (WHA) under the Forest and Range Practices Code (FRPA) Government Action Regulations (GAR) and/or as Section 16 or 17 reserves under the Land Act.

We have several serious concerns with the responses provided in the 19-September letter, as follows.

**1. “Request for validation of the winter range polygons.”**

In response to our request for validation of the winter range polygons – and specifically stating that to date, we have not received any empirical data to support the boundaries of the polygons – the 19-September letter provides a generic description of the methodology that was said to be used to delineate the polygons.

This is not the empirical data we are asking for, that can be used to validate individual polygon boundaries. Rather, it is a generic description of the methodological framework used, in theory, to delineate polygons of this nature. As another colleague involved in these discussions pointed out

on this topic, four different biologists could follow these methods and create four different sets of polygons.

What we are requesting is the empirical data and results used to define the polygon boundaries on an individual polygon basis. Part of this would be the resultant data sets and interim polygon boundaries that were used to arrive at the final polygon boundaries. In colloquial terms: “show us your work”. These kinds of data would include the initial modeling results used to initiate the process, subsequent aerial habitat surveys and/or GIS results used to refine linework, subsequent iterations of polygon boundaries resulting from these methods, and any aerial goat survey data that was used to define occupancy or goat distribution and abundance within identified polygons.

As stated, to date, we have not received any of these kinds of empirical data that would provide us with the self-assurance to support the bulk of the proposed polygons.

## **2. “There are “no impacts” of the GAR-order on Bella Coola Heli Sports.”**

This statement taken from the 19-September letter is very disturbing to us. It is completely taken out of context. It will be the Land Act designations that follow the GAR Order habitat mapping, governing commercial backcountry recreation, that is of concern, hence why we have made a previous comment submission. The spirit and intent of our statement on this matter is:

As the GAR Order text is written, the restrictions themselves do not apply to heli-ski operations, since GAR Orders under FRPA are intended for forest management operations. i.e., there is nothing in the text that is specifically targeted at a heli-ski operation, but rather “Primary Forest Activities”.

Indeed, the specific direction provided in the original letter sent by government on 30 April, 2024, is this:

“If the GAR Order is enacted, you will be required to follow the General Wildlife Measures when applying for a cutting permit under the Forest and Range Practices Act. If a Section 16 or 17 Land Act Withdrawal from Disposition or Conditional Withdrawal is enacted, Land Act applications over the spatial areas shown below may be restricted or terms and conditions imposed.”

Given that BCHS does not intend on applying for a cutting permit under FRPA, this would seem to indicate that the GAR Order does not apply to BCHS.

However, for example, under “General Wildlife Measures (GWMs)– Primary Forest Activities” and GWM 4, which states:

“Helicopter and fixed-wing aircraft must maintain a minimum of 500 m vertical distance above ground, and a minimum of 1500 m horizontal separation from designated mountain goat winter range and observed mountain goats at all times except for work approved in GWM 2.”

It is not clear if this applies to all helicopter activity in a general sense, or helicopters used in forest management activities, or more specifically, to a heli-skiing tenure operation. We strongly recommend that the GAR Order in its appendix, or associated text associated with the proposed polygons clearly states how the polygons will apply directly to a heli-skiing operator in the context of a heli-skiing tenure operation.

We then explain, as is pointed out in the next point #2 of the 19-September letter, If the UWR polygon mapping as currently proposed, along with the associated 1500-m buffers, become default no-go zones specifically for heli-ski operations – this will have a significant impact to heli-ski operations, which in our experience, can readily be avoided via refined habitat mapping that benefits both the mtn. goats and commercial backcountry tenure holders. Skeena Region that has the highest densities of mtn. goats in the province, yet has a number of viable heli-ski operations as a result of refined mapping within the Coast Mtns, Kispiox & Nass (Last Frontier, Skeena, True North/Northern Escape, White Wilderness Heliski operations).

**3. “This situation may be further exacerbated should the Cariboo Region deny the use of terrain masking...”**

Again ,we emphasize the point that most, if not all, heli-ski operators overlapping mountain goat UWR polygons use terrain masking as a mitigation technique – terrain masking being the use of terrain features to approach goat habitat polygons within the 1500-m default separation distance stated by the 2006 provincial guidelines. In fact, it is safe to say, in our experience, that many operators overlapping mountain goat UWR polygons depend on terrain masking as a mitigation technique to make their operations viable.

Suffice it to say, terrain masking is an important and vital part of the BC heli-skiing industry at the current time.

The response in the 19-September letter appears to be discounting terrain masking as an acceptable technique. However, that is not explicitly stated in the response letter. It is merely stating that visual masking does not consistently prevent flight responses of mountain goats to aerial disturbance.

First, we have no issue with that statement. It is indeed, quite likely to be like all natural phenomena, something that varies with environmental conditions at a specific location – and as such requires study to determine how best it can be applied.

Second, the 19-September letter appears to suggest that Cadsand (2012) somehow supports the assertion that terrain masking should not be considered an acceptable mitigation technique. Not to discount Cadsand's (2012) informative paper, but her work was not focused on empirically testing the effectiveness of terrain masking, and more importantly did not show conclusive evidence for or against terrain masking effectiveness. On this basis, the Cadsand (2012) is not something that can be used in support of, or against, the use of terrain masking.

In short, terrain masking is largely an unstudied subject area without any real empirical data in support of, or against, its effectiveness as a disturbance mitigation technique for mountain goats. However, years of observations by biologists familiar with heli-ski operations indicate that terrain masking is effective in not displacing or reducing fitness of mtn. goats wintering nearby, as indicated by continued habitat occupancy year after year with relatively stable numbers of animals.

We have provided advice to Heli-Ski Canada that a partnership arrangement with the B.C. provincial government is desirable to collect information for informed decision making; terrain masking is one of these areas that requires further inquiry/investigation given the multiple factors that control sound transfer.

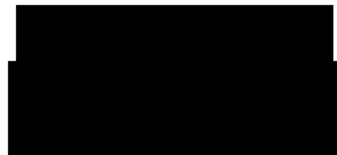
It would be desirable to have a follow-up virtual call with provincial government representatives regarding these matters since it appears that minimal progress is being achieved via written correspondence.

We thank you for the opportunity to provide our comments on this situation as it applies to BCHS. Please let us know if you should require further information on the contents of this document.

Yours truly,



Robert G. D'Eon, PhD, RPBio  
Senior Environmental Consultant



Len Vanderstar, RPBio  
Northern Habitat Solutions



# BELLA COOLA HELI SPORTS

Oct 25, 2024

Connor Ikoma, Planning Officer 1  
Planning and Development Services  
Cariboo Regional District  
Suite D – 180 North Third Avenue  
Williams Lake, BC V2G 2A4

Dear Connor Ikoma:

**Re: Referral Response from Ministry of Water, Land & Resource Stewardship (WLRS), Ecosystems Section, Land Use Planning and Cumulative Effects Division, Cariboo Region - Rezoning Application File 3360-20/20240014**

Reference is made to the letter dated October 18, 2024 from the Ecosystems Section of WLRS regarding Rezoning Application File 3360-20/20240014

We disagree with the comments provided by the Ecosystems Section including the following:

**The Ecosystems Section of WLRS does not support the re-zoning application of District Lots 1090 and 1091, due to potential impacts of increased helicopter activity in this area on already declining mountain goat numbers.**

- The proposed development contemplated by the rezoning application will not result in increased helicopter activity in this area. That statement is simply an incorrect assumption by Ecosystems Section. The helicopter activity conducted by Bella Coola Heli Sports (BCHS) in this area has been more or less consistent over the last 10 + years, and the lodge development will not materially affect the level of helicopter activity.
- The report from the Ecosystems Section refers to specific ungulate winter range polygons. Our response is that the Provincial Government (and local First Nations) have NOT approved these polygons (although consultation is still in progress), and it is our position that the polygons are simply a representation of potential goat habitat areas that have not been verified.
- We refer you to a report prepared by two Registered Professional Biologists (RP Bio) which directly challenges the comments stated in the Referral Response dated October 18, 2024.



- It is important to note that helicopter flights are federally regulated by Transport Canada. To that end, we would suggest the comments by the Ecosystem Section regarding helicopter flight activity, pursuant to this rezoning application, do not apply to use of this private property.
- In summary, BCHS has an existing Land Act tenure to conduct guided heli skiing activity in this area issued in 2013 for a 30 year term

Thank you, John Furneaux



Director

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