KALESNIKOFF

TIMBER INSPIRES

Cutting Permit K090 – Rover Creek Douglas-fir Beetle Harvest Plan Information and Feedback Form

October 14, 2021

Introduction: Douglas-fir Beetle Incidence in the West Kootenays

Douglas-fir bark beetle (Dendroctonus pseudotsugae, and often abbreviated as IBD) is a naturally-occurring insect which inhabits B.C.'s forests. Under normal, or endemic conditions, the insects will move from host to host annually, generally killing the trees in fairly small numbers (often just a few trees per instance, within a localized area). Over the last five years or so populations of this insect have increased significantly and are now at epidemic levels in many areas of the province. Low to middle elevations in the West Kootenays generally tend to have a large proportion of susceptible Douglas-fir stands, and the effects of several years of heavy infestation are beginning to show visibly on the hillsides and valley bottoms. Recent Google Earth imagery from August of 2020 shows heavy infestation levels in an area east of Sitkum Creek on the north shore of Kootenay Lake's West Arm for example:

Note the reddish-orange discolouration on a large proportion of the trees in the image above. This indicates attack in the previous year. Attacked trees will remain green in the first season, turn red the following summer, and lose their needles entirely in the third year.

Kalesnikoff has been actively monitoring and attempting to suppress beetle populations within our operating areas, however infestations appear to be outpacing the combined efforts of local forest licensees and the Ministry of Forests, Lands, Natural Resource Operations and Rural Development. While this insect is a natural forest health agent, epidemic levels of attack will have a profound effect on many local forests where mature Douglas-fir is present as a dominant component of the stand. The rapid proliferation of this insect, combined with wildfires, is creating a measurable effect on local forest and ecosystem health. Accordingly, our strategy in sourcing timber from within our operating areas has shifted to focus on stands with significant forest health factors first.

Over the past several years, notable infestations have been active within the Blewett area, and have included epidemic levels of attack in the Connor, Bird, Rover, and 49 Creek drainages of Kalesnikoff's operating areas there. During the field seasons of 2020 and 2021, we have located and undertaken planning requirements to harvest areas within the Rover Creek drainage that are particularly affected and which will be accessible in the relative short term to mitigate the damage occurring there.

While salvage of dead timber and removal of live insect broods is intended to slow the spread of the Douglas-fir beetle and recover value from killed timber, this strategy is unlikely to result in complete suppression of the insect population, and other forest values need to be considered in balance against harvest opportunity. While Kalesnikoff has undertaken considerable planning efforts to this end, it's important to us to provide opportunities for review of our plans ahead of operations.

Kalesnikoff is proposing Cutting Permit (CP) K090 under our Forest License A30172. CP K090 consists of several proposed harvest areas within the Rover Creek watershed. The purpose of this document is to provide information for review and feedback by local stakeholders, Indigenous communities, and the interested public.

Who We Are:

About Kalesnikoff:

Kalesnikoff Lumber Company is a local, fourth-generation family-owned company based in Thrums, B.C. We have lived and worked in the west Kootenays for over 80 years and care about our local communities and our employees, contractors and suppliers who we consider extended family.

We create our plans and make decisions based on local knowledge of our forests, environment, communities, and on evolving best practices in sustainable forestry. We live here, and our forestry and business practices reflect our ongoing pride in our legacy of taking care of the land and people in our area. We are committed to making the most of every tree we plant, harvest and process — striving to create the most benefit for our employees, the community and our customers.

We're trying to improve on how we work with local communities in advance of harvest operations to better understand their priorities, concerns and interests, and we develop our final harvest plans based on community input as well as technical, regulatory and environmental considerations.

Our Commitment:

Kalesnikoff will:

a) adhere to government regulations and guidelines when planning and conducting harvesting activities.
b) adhere to the results and strategies described within our approved Forest Stewardship Plan, available on our website, at https://kalesnikoff.com/sustainable-forest-stewardship/
c) carefully consider the various risks of our harvesting activities and seek the advice of third-party qualified registered professionals as necessary throughout our planning process.
d) utilize the most up-to-date imagery and technology available to help draft operational plans.
e) prepare detailed drainage plans where necessary.
f) use modern road building practices with attention to maintaining natural drainage patterns.
g) use environmentally sound timber harvesting practices.
h) carry out monitoring and maintenance of roads and structures on a regular basis to avoid issues that may be caused by weather events or improperly functioning drainage structures.
i) carry out reforestation of harvested areas in a timely fashion, with an appropriate species mix which considers site-specific conditions and climate change variables.
j) operate in a manner that limits environmental impact, prevents pollution, and protects the health and safety of our employees, contractors and the public.
k) incorporate scientific discovery, government direction, public feedback, and local knowledge to reduce our environmental footprint and help further the public interest by continuously improving the sustainability of our operations over time.
l) engage with Indigenous peoples, local communities and the public in an open and transparent manner.

How this Public Referral Document Works:

Kalesnikoff Lumber Company has developed a proposed harvest plan for Rover Creek. This plan will result in the application for Cutting Permit (CP) K090, which will be applied for under our Kootenay Lake Forest License (FL A30172), which provides timber rights on provincial Crown lands. We are sharing this plan with Indigenous peoples, stakeholders and the local community to provide information about key factors we've identified and considered, the proposed harvest areas and other identified forest values, as well as to seek your feedback and input on other information you believe should be considered.

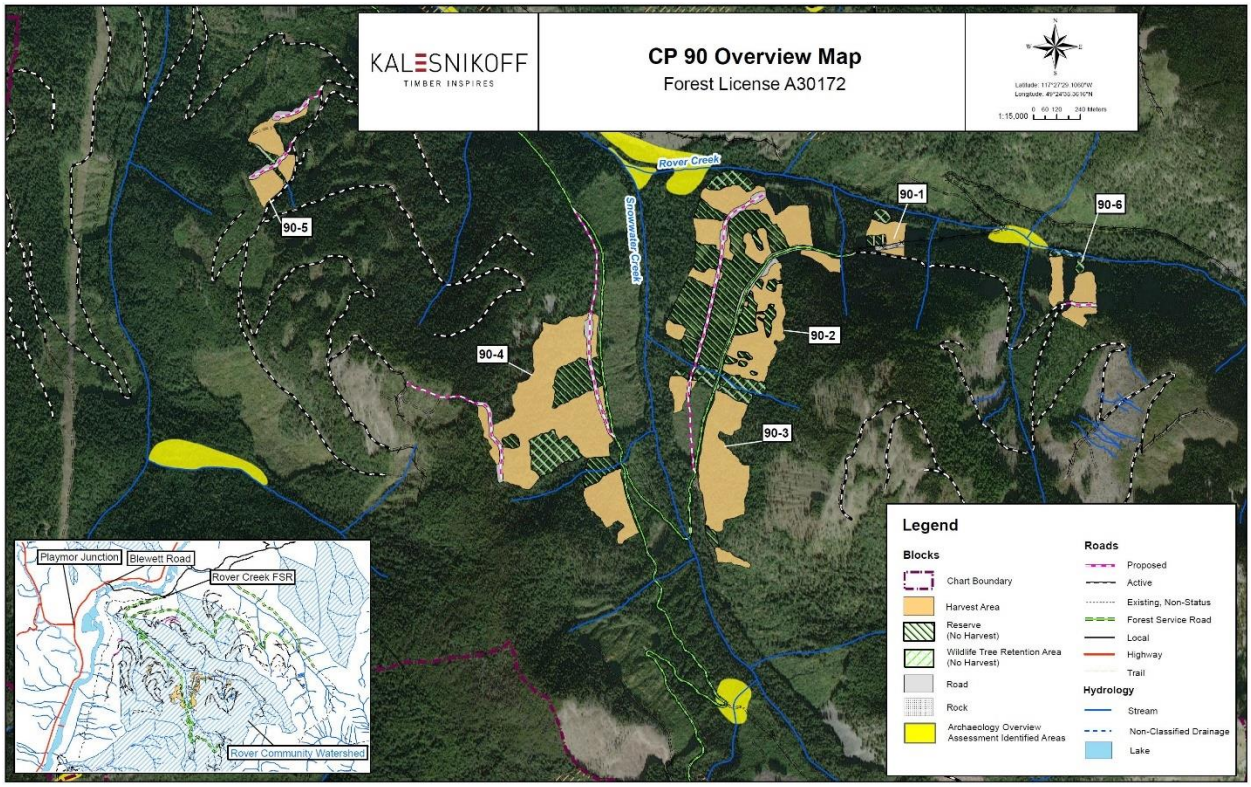
Please review the proposed harvest plan and related information in this document, then feel free to provide your input in the section marked "FEEDBACK FORM" by **November 18, 2021**. This document and the Feedback Form will also be posted on the Forest Stewardship page of our website at the following address: https://www.kalesnikoff.com/sustainable-forest-stewardship. It can be completed and emailed to referrals@kalesnikoff.com, mailed to PO Box 3000 Hwy 3A, Thrums BC, V1N 4N1 or a hard copy dropped off at our main office at 2090 Hwy 3A in Thrums. You can also share your input by simply emailing comments or questions to the same address or by calling our office at 1-250-399-4211, extension 231 for Gerald Cordeiro, our Forest Development Manager.

If you'd like to receive email updates regarding this proposal and plan, or any of our other activities in your specific area of interest, please provide your email address and contact information in the Feedback Form, or email it to referrals@kalesnikoff.com. Please tell us briefly who you are, and advise if you hold a water license or other tenure rights on Crown land, plus any other information you think could be important. Thank you

About the Proposed Rover Creek Harvest Plan:

Access and Infrastructure Requirements

CP K090 is accessed primarily via an existing road network that has been in place for many years. Some additional road construction will be required in order to facilitate harvest operations. The map below gives an overview of the proposed blocks and new roads in relation to existing infrastructure.



Harvest Methods

Due to the relatively steep terrain within the identified harvest areas, the majority of timber proposed for harvest will require the use of an overhead cable yarding system. This common harvest method allows timber to be landed at roadside without the need for heavy equipment on the ground. Exceptions to this are Block 5 and a portion of Block 2 which have flatter terrain that permits the use of conventional ground-based equipment. While this harvest method requires more equipment on the ground it generally permits greater flexibility to retain healthy live trees within the harvest area. More specifics for each planned cutblock will be provided below in the block summary section of the document.

Specific Planning Requirements and Considerations for the Rover Creek Area:

Careful consideration must be given to a variety of forest values across in any harvest planning exercise. The Forest and Range Practices Act (FRPA) identifies 11 primary forest values to be considered, in no specific order, as follows:

- Biodiversity
- Cultural Heritage
- Fish/Riparian
- Forage and Associated Plant Communities
- Recreation
- Resource Features
- Soils,
- Timber
- Visual Quality
- Water
- Wildlife

In addition to the identified FRPA values, we apply several other lenses to our proposed developments. Wildfire resilience features prominently in our planning processes now, as well as incorporating general climate change expectations and how to help our local forests adapt accordingly over the long term. We have also recently proposed that agroforestry be investigated as a potential tool for use in interface zones around our communities to help simultaneously promote wildfire resilience and food security. While forest health may be inferred from the maintenance of the above identified values, we are currently in an era of epidemic bark beetle infestation, and this factor also plays a leading role in our planning process.

The following are a few of the primary planning considerations with respect to this particular project. While all forest values are considered for each proposal, generally speaking there will be a few for each site that are most difficult to reconcile and balance against timber harvesting. Site-specific analysis for this area yields a few of the most pertinent values or considerations here (in no specific order) as:

Community Watershed – Rover Creek is a Community Watershed with a small number of domestic use intakes. Accordingly, careful consideration must be given to factors that may affect water quality, quantity, and timing of flows within this system to ensure no adverse effects are experienced by licenced water users, and to protect the integrity of the aquatic habitat in the stream. In order to more fully understand hydrological processes within this particular watershed, Kalesnikoff commissioned two significant studies aimed at identifying potential specific risk factors and quantifying the expected outcomes of the proposed harvest plan.

The Rover Creek Watershed Assessment (Apex Geoscience, 2021) includes geospatial analysis of various physical attributes of the watershed as well as current levels of disturbance and a field review of the channels in each sub-basin to identify current conditions and gain information about past disturbances.

The Rover Creek Hydrological Assessment (Apex Geoscience and MacHydro, 2021) utilized the Raven Hydrological Modelling Framework version 3.0 software to simulate various hydrological processes including canopy interception, snow accumulation and melt, glacier melt, evaporation, soil infiltration, percolation, and baseflow, as well as surface runoff. The model was calibrated using local climate data and streamflow gauging, then applied to Rover Creek in order to ascertain whether the proposed harvest areas would have an appreciable effect on streamflow timing and magnitude.

The Watershed Assessment shows a low likelihood that current conditions in the watershed will increase peak flow magnitude (i.e. spring flooding), cause increased sediment levels, or cause changes to riparian function that could impact water quality or degrade aquatic habitat in the lower reaches of the stream. The Hydrological Assessment showed no significant changes in magnitude or timing of flows under the proposed harvest scenario. As a result, the risk of detrimental effects to hydrological processes in Rover Creek as a result of proposed CP K090 is considered to be low.

Both reports will be made available on our website at:
https://kalesnikoff.com/sustainable-forest-stewardship/
Scroll down to the section titled "Current Opportunities for Review and Comment".

Recreation – The upper Rover Creek area sees a significant amount of recreational traffic throughout the year. Perhaps the most notable season is winter, when the main road systems host snowmobilers as well as guests and staff of the heli-ski lodge at the upper end of the drainage. It is likely at least a portion of the harvest operations in this proposal will occur during winter months, so some coordinated planning will be required to ensure road safety is maintained as paramount, with the minimum possible disruption to recreationists. Referrals will be sent to the lodge and snowmobile clubs known to use the area frequently in order to maintain up-to-date communications and safety protocols. Heed will be paid to the need for adequate parking and trailer turnarounds so that snowmobilers have safe locations to load and unload and park for the day while they enjoy the mountains.

Visual Quality – The established visual quality objective (VQO) for the landform these blocks occur on is 'Modification'. This VQO permits visible alterations from forestry activities which are very easy to see and may be large in scale with characteristics that appear natural, or small to medium in scale but with some angular characteristics. Visible alterations should generally not exceed 18% of the perspective view of the landform from a significant public viewpoint. While the sizes and locations of harvest patches in this proposal are dictated primarily to encapsulate the beetle-infested timber, efforts have been made to ensure the openings will not unduly reduce visual quality from the selected viewpoint at the junction of South Slocan Village Road and Highway 3A. Examples of Kalesnikoff's strategy to achieve the desired result are:

1) Pre-harvest visual design, including:
    - Avoidance of rectilinear boundaries and overly geometric block shapes.
    - Strategic location of retention patches to utilize standing timber which will screen the openings from sight.

2) Utilization of LiDAR data and 3D modelling software to accurately predict the visual impacts from harvesting and road construction. High-resolution simulations are created for the selected viewpoint and are used to improve on potential problem areas before harvest occurs and to ensure the post-harvest condition is consistent with expectations.

3) Prompt re-planting of harvested areas to promote the fastest possible green-up of visible alterations.

The top image is a photograph taken from the junction of South Slocan Village Road and Highway 3A. The lower image is a simulation of the expected appearance after completion of harvest.

Forest Health – Douglas-fir bark beetle infestations throughout many of BC's interior forests are reaching epidemic levels, and the West Kootenay region is seeing significant effects at this time. Recent Google Earth imagery and aerial reconnaissance show forests throughout the West Kootenays are suffering widespread damage. While forest licencees are working actively with government to suppress beetle populations, our steep terrain, diverse forest values, and the rapid spread of these insects across low to middle elevations is cause for concern. Local forests generally have a high proportion of susceptible timber from valley bottom to middle elevations throughout the region. The majority of Kalesnikoff's harvest plans currently include measures to suppress beetle populations and salvage damaged timber. The Douglas-fir beetle has a one-year life cycle, with insects emerging in spring and summer to infest new trees annually. While the spread of this insect is not comparable in scale to that of the Mountain Pine Beetle, there are considerable impacts to various forest values including climate change and wildfire resilience, terrain stability, ecosystem and hydrological function, visual quality, and of course timber value. As Douglas-fir is generally a drought and fire-resilient species, large scale losses are detrimental

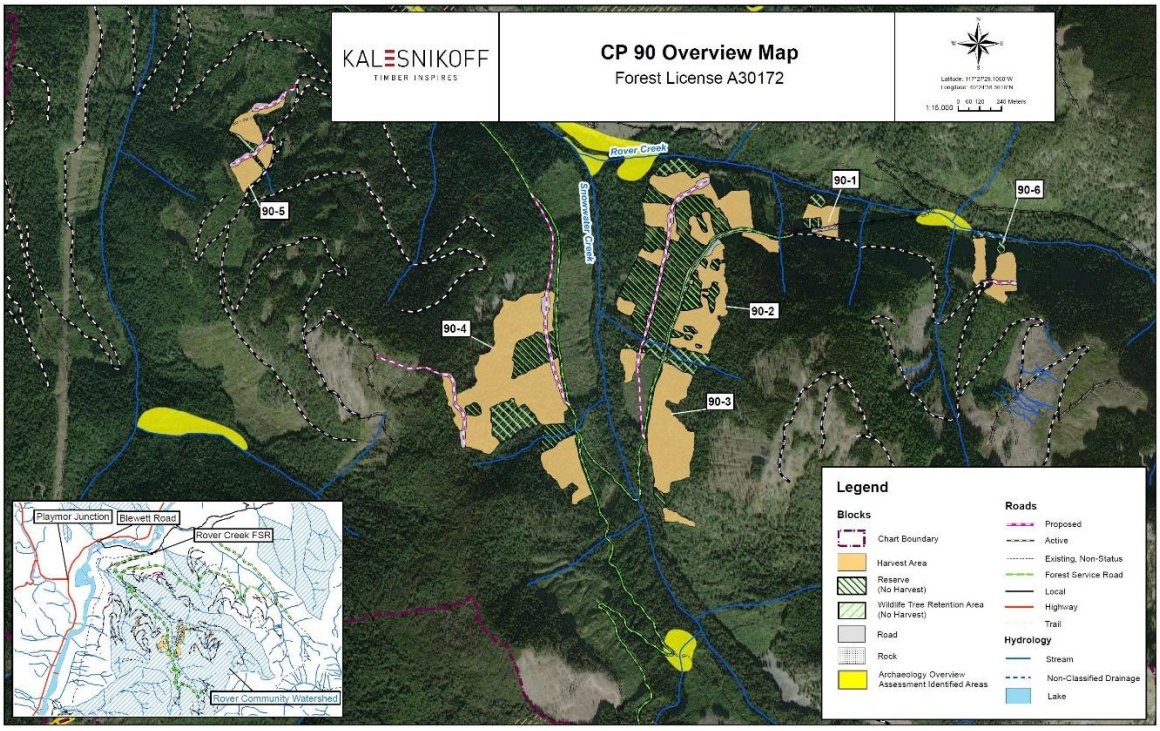
to our ideal longer-term outlook for climate change resilience in our local forests. This harvest plan for Rover Creek will include measures to trap and remove active insect populations in an attempt to reduce the spread of this forest pest.

Adult Douglas-fir beetle, measuring approximately 6mm in length

Summaries and Further Reading:

Block Summaries:

Cutting permit K090 consists of 6 cutblocks occurring within the Upper Rover, Snowwater, and Connor Creek sub-basins of Rover Creek. The following is a brief description of the site conditions and harvest plan for each block. The referral map is provided again for reference.



Block 1 – Situated in the Upper Rover sub-basin, this small block has a harvest area of 2.1 hectares (ha). This block is situated above Upper Rover Creek, with a buffer of greater than 60m between the harvest area and the creek. The block will be harvested using an overhead cable system, which will require no heavy equipment to traverse the ground. No new road construction is required for this block, timber

will be yarded up to the existing road system. Stand-level biodiversity will be maintained by retaining individual or clumped leave trees within the harvest area, as well as a wildlife tree retention area (WTRA) below the block.

Block 2 – This block lies above the confluence of Upper Rover and Snowwater Creeks. The harvest area of 21.9ha is broken into smaller units ranging from less than 1ha to about 8ha, with significant reserves in between. Harvest patches have been located around areas of identified infestation. A new road approximately 1.5Km in length will be required to access timber in the lower part of the block. This block has had additional small reserve areas added to mitigate the visual impact of the opening. These reserve locations were identified using the computer simulation, then confirmed in the field to be free of active beetle infestations. Stand-level biodiversity will be maintained by retaining individual of clumped leave trees within the harvest area, a mosaic of small and large reserve patches, and WTRA's near Upper Rover Creek and over a pair of small watercourses at the south end of the block. The majority of the block is designed for harvest by overhead cable system, with the uppermost area permitting conventional ground-based harvest. The conventional harvest method will give some greater flexibility to the selection of trees for retention in terms of species, location, and health.

Block 3 - Block 3 contains significant infestation, especially in the upper area above the existing road. This block has a harvest area of 14.9ha, and is situated above Snowwater Creek, with a minimum buffer of greater than 100m from the creek. The small harvest patch at the northwest end of the block will share the new access road with Block 2, and the remainder of the block requires no new construction, as timber will be yarded down using an overhead cable system to existing roads. Stand-level biodiversity will be maintained through retention of individual and clumped leave trees, as well as a WTRA covering a small watercourse at the north end of the block.

Block 4 – The largest block in the CP K090 harvest plan, Block 4 has an area of 31.0ha. located on the eastern aspect above Snowwater Creek, this stand contains significant infestation and has several areas of homogenous Douglas-fir timber types which would be highly susceptible to further attack. Areas of non-susceptible timber have been removed from the harvest area as reserves and WTRA. This block requires two new access roads, totalling approximately 2Km in length. The longer yarding distances require roads at top and bottom in order to be able to reach the timber using an overhead cable system. The lower road has been designed to allow public and commercial traffic to continue to be able to utilize the Rover Forest Service Road (FSR) below during operations, as well as to provide the opportunity to safely tie back the cable yarding equipment without disturbing the young forest below the FSR. This road will be a temporary structure and the southern half of the road will be rehabilitated and planted along with the remainder of the block. Stand-level biodiversity will be maintained through retention of individual and clumped leave trees, as well as two reserve areas and a WTRA.

Block 5 – Located within the Connor Creek sub-basin, this block has a harvest area of 5.2ha. The more gentle terrain in this block allows for a conventional ground-based harvest system, and this will permit selective harvest techniques that leave significant retention of mature healthy trees. Two new spur roads will be required to access the timber, totalling approximately 600m in length. These will be temporary spurs that will be rehabilitated and planted along with the remainder of the block. Stand-level biodiversity will be maintained through extensive retention of individual and clumped leave trees, as well as a WTRA covering the two small watercourses in the middle of the block.

Block 6 – Situated above Upper Rover Creek, Block 6 has a small harvest area of 4.5ha. This block consists of two harvest patches, and will require approximately 130m of new road construction in order to access the timber. The block has a minimum buffer of greater than 40m from the creek. This block will necessitate the reconstruction of an old bridge a short distance toward town, re-establishing safe access to and beyond the proposed harvest area. Stand-level biodiversity will be maintained through the retention of a WTRA below the block.

Public Engagement Summary:

Kalesnikoff is committed to transparent communications and engagement with Indigenous communities, local stakeholders and the public throughout the planning, road construction and harvest operations, and silviculture phases of our woodlands program. We will share information on our website and by email with those who provide their contact information. While engagement and referral periods for individual projects will have dates specified in order to receive timely feedback, the public is welcome to contact us at any time with questions, concerns, or comments related to our activities. We will strive to respond to individual queries in a prompt and comprehensive manner.

Further Reading, Links, and Related Information:

- **Regional District of Central Kootenay Community Wildfire Protection Plans**
  https://rdck.ca/EN/main/services/emergency-management/wildfires/community-wildfire-protection-plans.html
- **Forest Enhancement Society of BC Website**
  https://www.fesbc.ca/
- **FireSmart BC Website**
  https://firesmartbc.ca/
- **Kalesnikoff Website, Public Stakeholder Engagement Page**
- https://www.kalesnikoff.com/sustainable-forest-stewardship
- **Kootenay Resilience Website**
  http://www.kootenayresilience.org/
- **Douglas-fir Beetle Fact Sheet, Forest Health Pamphlet #2**
  https://www.for.gov.bc.ca/rsi/foresthealth/pdf/dfbpamphlet.pdf

Feedback Form:

Kalesnikoff is seeking feedback with respect to our harvest plan in the Rover Creek area. We intend to begin operations within this area in 2022.

We are seeking input from Indigenous peoples, local stakeholders and the public regarding what you think we should know and consider as we move forward in finalizing our plans. We'd like to hear from you about:

1. Infrastructure (buildings, roads, fencing, water-works, rec trails, etc.)
2. Natural features or important resource values not identified in our proposed plan.
3. Wildfire risk reduction in your community.
4. Other information you would like to receive.
5. How you would prefer to be kept informed.
6. Any other questions, comments or concerns you may have.

Topic 1: Existing and Proposed Infrastructure:

Consistent with our commitments, we will use modern road building practices with attention to drainage control and will monitor and maintain roads and structures on a regular basis.

1. ***Are there any key pieces of infrastructure or sites of interest (roads, buildings, fencing, water-works, rec trails etc.) that you would like to know more about or think we should know more about? (Ongoing road maintenance issues, siltation problems, seasonal issues, values at risk etc.) Is there any other infrastructure we should be aware of, or that you would like more information on?***

Topic 2: Natural or Significant Features

Kalesnikoff consistently adheres to government regulations and guidelines when planning and conducting forest harvesting activities, including those protecting or maintaining features of environmental, social or cultural significance. Whenever possible, we also respect significant local and informal features and landmarks of importance to the community.

2. ***Are there any key environmental, social or cultural features that were not identified in our proposed harvest plan that should be considered? Please provide a description and location of each feature.***

Topic 3: Wildfire Risk Reduction

As our collective understanding of climate change and the increased potential for catastrophic wildfires grows, there is a need for further discussion as to how we may best approach and mitigate this hazard. Forest licencees are viewed as a key component to this process as we hold tenure rights to harvest trees on Crown land and have a high level of interest in maintaining forest cover over the landscape through proactive forest health management. There is a growing consensus that Provincial funding will not be able to cover the entire cost of fuel reduction treatments due to the vast scope of the issue, and that some amount of timber harvesting near and adjacent to communities can help to reduce the wildfire risk. This type of work requires collaboration and careful consideration in the planning process. Kalesnikoff is committed to working with communities where we operate to come up with locally supported decisions around tackling this important issue. Please help move this conversation forward by giving us some input to consider.

3. ***Are you in favor of wildfire hazard mitigation treatments around your community? Do you own property that is at risk, or which may currently be in a condition that contributes to the risk? Please give us your thoughts.***

Topic 4: Other information

We are committed to ongoing engagement and communications to help ensure local communities are aware of our harvest and related activities. We are open to continuing communication throughout and beyond our harvest planning processes.

4. What other information, if any, would you like to receive?

Topic 5: Preferred Method of Communication

5. Please check your preferred form of communication for this project:

You can get in touch with us at any time using the contact information listed below. Please let us know how you would like to receive any additional information from us. If you received this referral package via email and would rather not receive further updates for this project, you can be removed from our email list by checking the third box.

☐ **Email** ☐ **Kalesnikoff website** ☐ **I know enough. I don't want more information**

If you chose "Email", please provide yours here: _____

Topic 6: Other Related Input

6. Please provide any other questions, comments or concerns you may have regarding our proposed harvest plans.

How Public Input Will Be Used:

Your feedback is important to us. Input received through this community consultation will be compiled, reviewed and considered by Kalesnikoff Lumber Company along with technical, environmental and social considerations in planning for this harvest. We'll do our best to alleviate any concerns and incorporate public input into our plans.

How you can return your Feedback Form to Us:

1. Mail your completed form to:
   - Woodlands Team, c/o Gerald Cordeiro
     Kalesnikoff Lumber Company
     PO Box 3000 Hwy 3A
     Thrums, BC
     V1N 4N1

2. Drop your Feedback Form off at our office:
   - 2090 Hwy 3A
     Thrums, BC

3. Scan and email your completed Feedback Form to: referrals@kalesnikoff.com

4. Provide a written submission by email or regular mail (addresses above).

To sign-up for a mailing list:

Name: _____
Email address: _____
Phone # (optional): _____
Address (optional): _____
Postal Code (optional)*: _____

Please give us a brief description of your area of interest (community, neighborhood, watershed, etc.)

_____

_____

*If you don't wish to enter your address, you may still identify your neighborhood by entering a postal code only.