

KALESNIKOFF

TIMBER INSPIRES

Cutting Permit K080 – McFarlane Creek Area Harvest Plan Information and Feedback Form

December 16, 2021



Introduction: Kalesnikoff's Gray Creek Operating Area

Kalesnikoff Lumber Company's Forest Licence (FL) A30172 provides timber rights within several operating areas on the east shore of Kootenay Lake. Our Gray Creek operating area covers the western aspects and tributary drainages from Crawford Bay south to LaFrance Creek. The area is characterized by mountain streams of various sizes, generally originating in steep mountainous headwater areas and making their way to the lake down the gentler lower slopes. Face units between the streams vary between rugged and rocky to moist benches with relatively uniform terrain. The area often enjoys mild winter conditions at lower elevations due to its proximity to the large body of water of Kootenay Lake, however upper-level catchments may receive significant snowfall. The shoreline of the lake sees a mix of private land and public (Crown) forest, with small communities receiving most of their domestic water supply from surface water sources originating in catchment areas upslope.

While the wildfire season of 2021 saw Kalesnikoff's Akokli Creek operating area to the south burned almost in its entirety, the Gray Creek area was spared. Other forest health factors in the area include significantly affected areas at upper elevations which were subject to Mountain pine beetle infestation over a decade ago, and more recently a rapid and ongoing increase in attack by Douglas-fir beetle at lower elevations.

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:

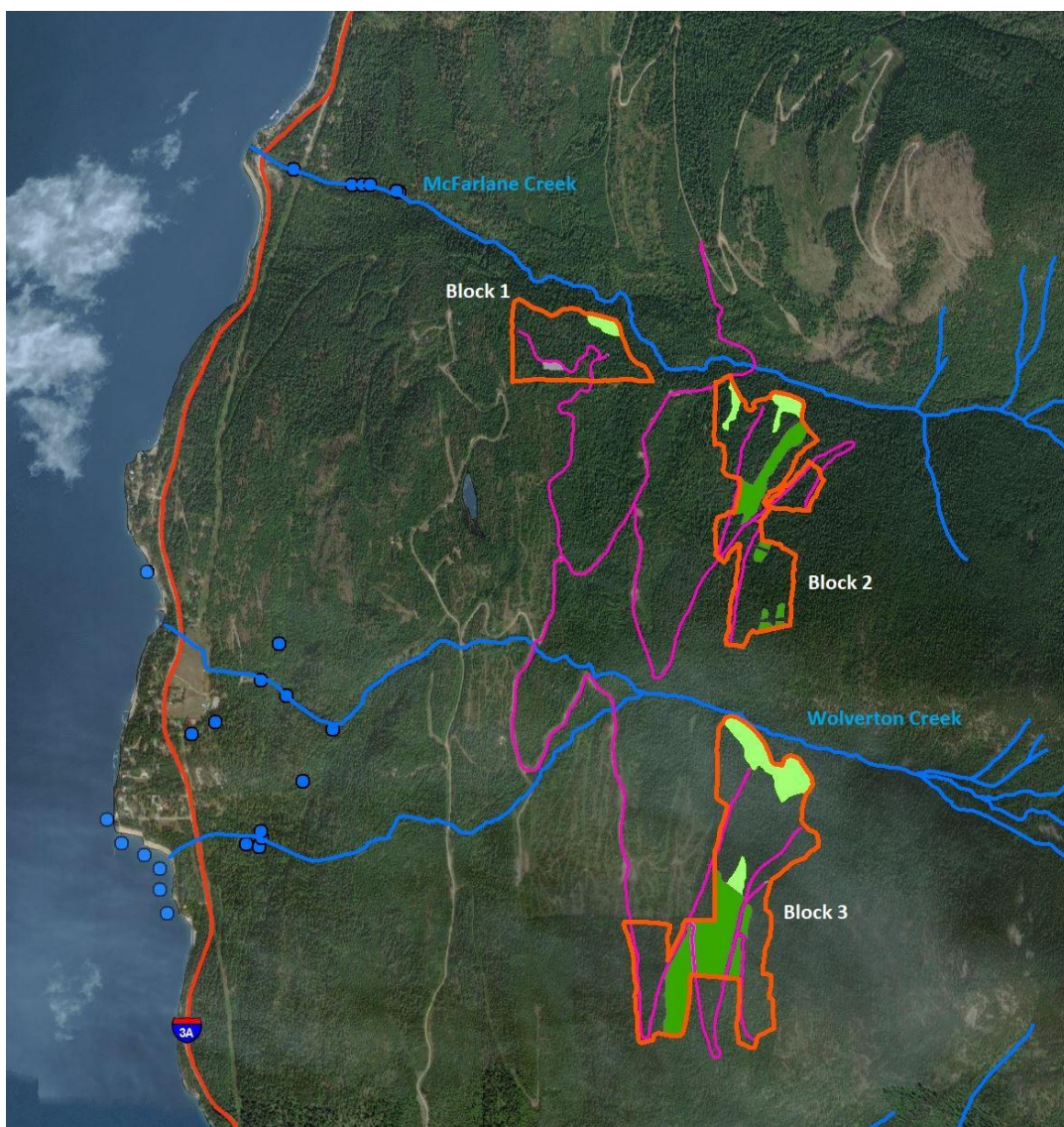
Kalesnikoff Lumber Company has developed a proposed harvest plan in the vicinity of McFarlane Creek. This plan will result in the application for a cutting permit (CP K080) under our Kootenay Lake Forest License (FL A30172), which provides timber rights on provincial Crown lands. We are sharing this 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 **January 28, 2022**. This document, including 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 McFarlane Creek Harvest Plan:

Cutting permit (CP) K080 is in the vicinity of McFarlane Creek, which enters Kootenay Lake a short distance south of Gray Creek, across from Pilot Point. The project consists of three cutblocks located within the McFarlane Creek, Wolverton Creek, and McFarlane Face catchment areas. The proposed access route is via Birkbeck Creek Road, which joins into Hwy 3A at Gray Creek. This route requires a new crossing over McFarlane Creek. Existing roads requiring minor upgrades then provide access close to the blocks, beyond which additional spur roads will be required to facilitate the timber harvest phase of the operation. The overview map below shows the road and block configuration in relation to McFarlane and Wolverton Creeks. Additional maps will be used to describe the project in greater detail below.



K080 Overview – Block outlines show in orange, with reserves and wildlife tree retention areas in two shades of green. Roads show in pink. Licensed points of diversion are blue dots

Access and Infrastructure Requirements

Access to the harvest areas is proposed to utilize the existing road system from Highway 3A up Gray Creek Road and Jasper Road to Birkbeck Creek resource road, before constructing a new crossing over McFarlane Creek. From there the access road goes onto private land, utilizing existing roads before entering Crown Provincial lands above. New spur roads will facilitate timber harvest operations in the blocks.

McFarlane Creek is a domestic-use watershed, providing drinking water to a number of licensed users downstream of the proposed crossing. For this reason, the crossing will be an engineered structure, designed to a long-term standard and to withstand high flow volumes that may arise due to unusual weather events.

Wolverton Creek, another domestic-use watershed, has an existing crossing that is proposed to remain in place but with an extension added to the upstream side to create a safe road width and upgrade erosion protection at the inlet.

Wolverton Creek has a diversion which also supplies domestic licenses to users on Lindsay Creek. The Lindsay Creek channel has an existing crossing that will not require any works as a part of this project.

Harvest Methods

This project involves a combination of conventional ground-based harvest and overhead cable harvest in roughly equal proportions overall. The cable harvest method is a common technique used where terrain is too steep to permit safe travel of equipment throughout the area. This method often results in lower site disturbance levels due to the lack of equipment traveling on the ground, however due to safety and operational constraints it is somewhat more limiting in terms of an ability to retain dispersed leave trees throughout 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 McFarlane Creek Area:

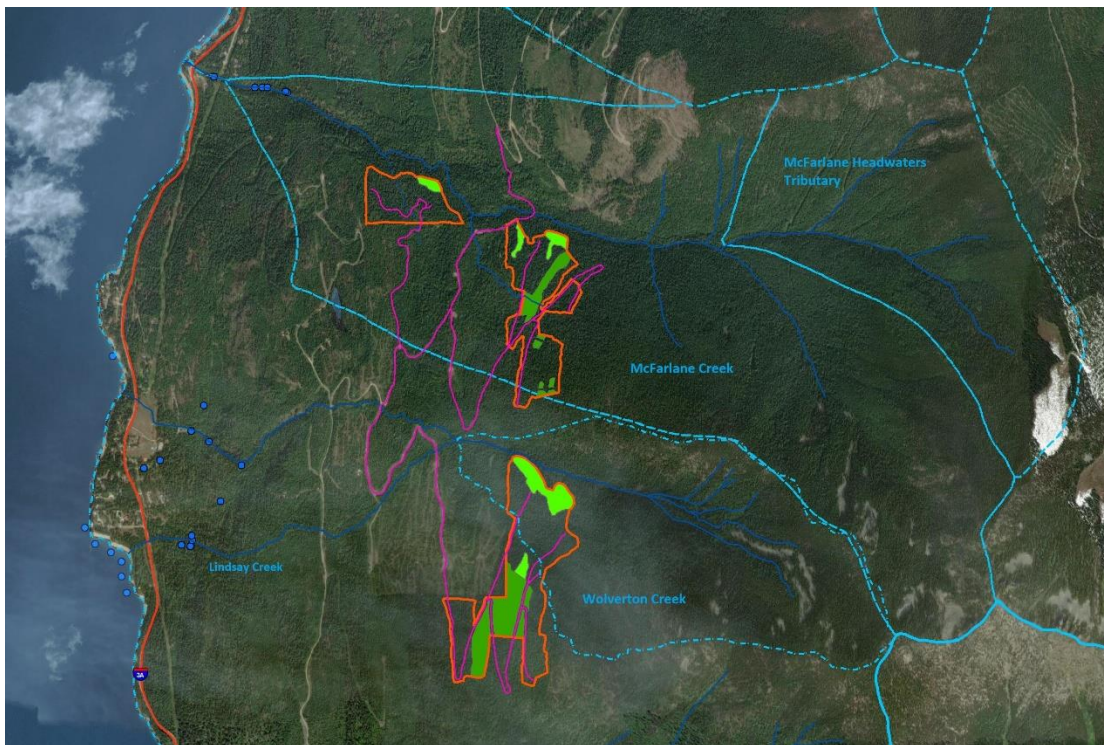
Careful consideration must be given to a variety of forest values in any harvest planning exercise. The Forest and Range Practices Act (FRPA) identifies 11 primary forest values to be considered, in no specific order, as follows:

- 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 general 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 (again in no specific order) as:

Domestic-Use Watersheds – McFarlane, Wolverton, and Lindsay Creeks are all domestic use watersheds, providing drinking water to the community in addition to several local springs and Kootenay Lake. Accordingly, careful consideration must be given to factors that may affect water quality, quantity, and timing of flows within these systems to ensure no adverse effects are experienced by licenced water users, and to protect the integrity of the aquatic habitat in the streams. The following map shows the context of the CP K080 blocks in these watersheds, with some additional description below.



The map above shows the delineated watershed catchment areas (light blue) of McFarlane Creek and of Wolverton Creek above the channel diversion, or bifurcation, of Lindsay Creek. Licensed points of diversion (PoD's) show as blue dots. The locations of the PoD's are from a government data set and do not always reflect the actual locations of licensed waterworks.

McFarlane Creek

Blocks 1 and 2 fall mainly within the catchment for McFarlane Creek. A geospatial analysis of the watershed shows previous harvesting on Crown land on the north side of the creek in addition to harvesting on private land on the south side of the creek which has regenerated significantly. Forest cover in the headwaters remains largely intact aside from one small cutblock and some stands affected by Mountain Pine Beetle over a decade ago. Historic fires in 1934 and 1940 that affected portions of the headwaters appear to have regenerated vigorously. Timber harvesting and significant natural disturbances that result in openings in the stand are measured against the size of the watershed to give an estimated 'equivalent clearcut area' or 'ECA' for the watershed. ECA is a commonly-used tool to estimate increased risk of flooding or changes to the hydrological regime of a watershed. The cumulative effect of CP K080 in addition to existing openings in McFarlane Creek is estimated at an ECA of 13.3%. ECA values below 20% generally represent a low risk for changes to flow patterns, so in this case the additional level of harvest is not expected to result in any measurable changes to hydrology. Additionally, the proposed harvest areas are comparatively low in elevation compared to the bulk of the watershed, which generally maintains desynchronization of snowmelt during the spring freshet. Lower areas will tend to melt out well before the headwaters begin to substantially lose their snowpack.

The addition of a new crossing over McFarlane Creek near the start of the access road will be drawn up by a professional engineer to ensure the design is appropriate for the specified location. The initial recommendation is to install a round pipe due to site characteristics and the longevity and ease of maintenance of that type of structure. The culvert is to be sized appropriately to handle increased flows during extraordinary weather events, with an armoured inlet to prevent erosion. This is intended as a long-term structure.

Wolverton and Lindsay Creeks

Wolverton Creek is an unusual watershed in that the stream channel divides, or bifurcates, resulting in two distinct streams, each providing water to licensed works below. The primary concern for timber harvesting would be an increase in the ECA value which results in an increased flood frequency and/or magnitude, altering the channel characteristics at the bifurcation point. This would require additional maintenance over and above regular measures required to maintain adequate flow in both channels. Currently the watershed above the bifurcation shows little recent disturbance and the cumulative increase from CP K080 shows an ECA value of 7.9%. This is well below the threshold where changes to hydrology might begin to have a measurable effect.

Increased sediment delivery into the creek would also be of concern as a potential result of timber harvesting, or more likely due to road construction. CP K080 has no new crossings on Wolverton Creek, Lindsay Creek or any tributaries, mitigating the risk of increased sediment delivery into the stream. Careful planning for in-block spur roads will be undertaken to maintain natural drainage patterns and prevent concentrated runoff that could carry sediment toward the creek.

The existing crossing over Wolverton Creek will require an extension of the culvert at the inlet both to provide a safe road width for traffic and to allow for appropriate armouring to reduce erosion and prevent long-term degradation of the structure.

The existing crossing over Lindsay Creek appears to be functioning properly and requires no additional work.

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 along 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 McFarlane 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

CP K080 Block 1 Beetle Infestation

Block 1 of this project is known to have suffered relatively severe infestation of Douglas-fir bark beetle. Aerial imagery from 2017 shows the damage was already significant at that time. The infrared image below was captured by a fixed-wing aircraft in 2017. Healthy trees appear pink, while dead trees show up as bluish-gray. In 2019 a drone flight was conducted over the area and infestation was confirmed to be ongoing albeit at a slower rate at that time. As the cumulative impacts of successive years of this insect begin to show on local forests, we urge land owners to examine the forests on their properties to see how susceptible they may be to attack. The beetles generally prefer large mature or old host trees, and are especially attracted to those stressed or killed by drought, endemic root rot fungi such as *Armillaria*, or windthrow. Management of this insect on private land can sometimes be achieved on a small scale without harvesting trees, and Kalesnikoff has been procuring anti-aggregation pheromones that may be used to slow the spread of the insect to private land. Please feel free to inquire with us as to how you may take action to prevent the loss of Douglas-fir trees on your property. Additional information will also be provided at the end of this document in the ‘Further Reading, Links, and Related Information’ section.



Aerial infrared image from 2017 showing CP K080 Block 1. Trees killed by Douglas-fir beetle show as blue-gray.

Visual Quality – The established visual quality objective (VQO) for the landform these blocks occur on is ‘Partial Retention’ (PR). The PR VQO permits visible alterations from forestry activities which are easy to see, small to medium in scale, and natural and not rectilinear in shape. Visible alterations should generally not exceed 7% of the perspective view of the landform from a significant public viewpoint. Roads and other site disturbances may be visible, but will not dominate the view. Managing for visual quality is a significant part of our business, as many of our operating areas are in highly visible areas above communities and in proximity to recreation areas such as parks, trails, and lakes. 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 roads and openings from sight or soften the look of edges and corners of harvest areas.
- 2) Utilization of LiDAR data and 3D digital 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. Use this link to learn more about LiDAR technology: <https://en.wikipedia.org/wiki/Lidar>
- 3) Prompt re-planting of harvested areas to promote the fastest possible green-up of visible alterations with a young forest.

Below is an example showing a photo of the existing visual condition of the landform as viewed from the Crawford Bay regional Park, along with a simulation of the harvest areas overlaid on the photo.



The top image above shows a photo taken from Crawford Bay Regional Park. The bottom image has proposed harvest areas overlaid to simulate the post-harvest visual condition. The simulation was created by first rendering a digital 3D model of the terrain and forest cover, including LiDAR-derived tree heights, then overlaying the results of the digital model on top of the photograph.

Interaction with Local Communities

Some harvest areas are in close proximity to private land, and various aspects of the project create interactions in both the newly-developing Gray Creek Estates subdivision and the well-established Gray Creek community. We'll be doing our best to get in touch with land owners and community members to hear perspectives around how we can minimize disruptions and act as good neighbours throughout this process. While we do have contacts for some community members, please feel free to share this information and encourage people to get in touch with any questions or concerns. Some common questions we expect or have heard already include the following:

Will this development affect my water quality? – We have taken care to ensure this proposal represents a low risk to local watersheds. Analysis of the harvest areas in relation to local catchment areas shows we are well below thresholds where changes in hydrology might be expected. All roads will have drainage designed to maintain natural patterns so as to avoid sediment delivery to streams, and any work at crossings will involve detailed mitigation measures to prevent sedimentation as well. Water users are not expected to experience any adverse effects.

Part of the development is adjacent to or close to my property, how will this affect me? – We have made significant efforts to find survey pins and lot lines to avoid trespass, and will be sending individual notices to property owners who are adjacent to any proposed developments. We would like to ensure that land owners are confident we will not adversely affect their interests. Once operations begin there will be some additional noise from road construction and harvesting equipment on site. We will ensure these operations are not occurring outside of appropriate hours of the day.

Block 1 – This block is located between private land and McFarlane Creek, with a harvest area of 11.4 hectares (ha). Included in this area is 1.0ha of timber reserve, which will see 90% of the trees left standing. Additional individual Larch, White pine, Ponderosa pine, and deciduous trees will also be retained throughout the block where they occur. The harvest system is a combination of cable and conventional. This block contains a significant volume of Douglas-fir beetle. One non-classified drainage (NCD) traverses the block. This watercourse does not have a continuous channel and so represents a low risk for sediment delivery into McFarlane Creek. Biodiversity is also maintained in a wildlife tree retention area (WTRA) of 0.7ha between the block and McFarlane Creek.

Block 2 – Located above private land and south of McFarlane Creek, Block 2 has a harvest area of 19.3ha. Within this area, 0.7ha will be reserved at 90% standing. Additional individual Larch, White pine, Ponderosa pine, and deciduous trees will also be retained throughout the block where they occur. The harvest system for this block is also a mix of cable and convention, with more area utilizing the conventional ground-based system on relatively flat terrain. A small tributary stream traverses this block, and is almost entirely contained within a timber reserve. Biodiversity is additionally maintained through 3.5ha of timber reserve and 1.6ha of WTRA.

Block 3 - This block is located to the south of Wolverton Creek and above private land. The harvest area is 25.9ha, including 2.3ha of 90% reserve. Additional individual Larch, White pine, Ponderosa pine, and deciduous trees will also be retained throughout the block where they occur. Another combination of cable/conventional harvest is planned, with the majority being conventional on relatively flat terrain. This block contains no streams. Additional timber reserves totalling 8.5ha and WTRA of 2.8ha help to maintain stand-level biodiversity.

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:

- **Kalesnikoff Website, Public Stakeholder Engagement Page**
<https://www.kalesnikoff.com/sustainable-forest-stewardship>

- **Regional District of Central Kootenay Community Wildfire Protection Plans**
<https://www.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/>

- **Kootenay Resilience Website (Climate Change Information)**
<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 McFarlane Creek area. We intend to begin operations within this area in 2022 or 2023.

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 in 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 alone 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.