



BCTS
BC Timber Sales
Kootenay

**SITE PLAN
KOOTENAY
BC TIMBER SALES**

Report Date 2021/08/03

TENURE IDENTIFICATION

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
TA0906	-	4	BF790			Lavington Fire 2	50 03 05 / 115 59 45

AREA UNDER THE PLAN

GROSS AREA (TAUP)	PAS	NP	WTRA / WTP	RESERVES	OTHER	NAR
99.7	3.5	0.2	4.4	0.9	0.0	90.6

ADDITIONAL COMMENTS

CONSISTENCY STATEMENT
This site plan is consistent with the results and strategies of the 2017-2022 BC Timber Sales Kootenay Business Area Forest Stewardship Plan. This block is within the Rocky Mountain FDU as identified under the FSP.

SOIL DISTURBANCE

SU	Max. Allowable Soil Disturbance (%)	Max. Amount TAS May Exceed MASD Prior To Rehab (%)	Max. Allowable Soil Disturbance For Roadside Work Areas (%)	Maximum Permanent Access Structures (%)
1	10.0	5.0	25.0	7.0
2	10.0	5.0		
SU	CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS. AND HOW THEY AFFECT THE TIMING			
1	<p>SU1 has been impacted by Wildfire. Danger trees present throughout area.</p> <p>Avoid harvesting during periods of excessive soil moisture such as during spring freshet and excessive rainfall .</p> <p>Ensure natural drainage patterns are maintained during and after completion of primary forest activities.</p> <p>Localized areas if heavy boulder, rock exist within the SU. Be cautious of rolling hazards on steep terrain.</p> <p>SU is south facing. Moisture deficits anticipated that may impact SU productivity.</p>			
2	<p>SU2 has been impacted by wildfire. Danger trees present throughout area.</p> <p>Avoid operations during periods of excessive soil moisture such as spring freshet or after periods of heavy rainfall .</p> <p>Ensure natural drainage patterns are maintained during and after completion of primary forest activities.</p> <p>Localized areas of heavy rock occur within the SU. Possible rolling hazard.</p>			

RESULTS AND STRATEGIES

RESULT OR STRATEGY	HOW THE STRATEGY OR RESULT APPLIES TO THE SITE or RATIONALE (IF NOT APPLIED)
Biodiversity Emphasis	Harvest of this block is consistent with the results for OGMA and MMA as described in the BCTS Kootenay Business Area 2017-2022 Forest Stewardship Plan (FSP). Harvest of this block includes removal of 1.33 ha of mapped OGMA that has been damaged by wildfire. Removal will also be required for accessing the east side of the block. This is consistent with permissible rationales for harvest provided for in the FSP. As required by the FSP, replacement area of equal or greater value has been identified. Details of the replacement area are provided in the TSL Support document. 2.01 ha has been identified for replacement.
Community Watersheds	This block is not within a community watershed or domestic watershed.
Connectivity	This block is not within an area mapped for connectivity.
Consumptive Use Streams	Harvest of this block will not impact any consumptive use streams. There are no water intakes licensed for domestic use within 1km of the block.

Cultural Heritage Resources		<p>This block was referred to First Nations through Operating Plan 21-2.</p> <p>No mapped Archeological Overview Assessment Polygons overlap this block. An archeological impact assessment is not required.</p> <p>Chance Find: If during operations, a suspected First Nations artifact is found, operations in vicinity of the find are to cease immediately and the site supervisor is to notify the Timber Sales Manager (TSM) of the find. The TSM is to cease or modify operations to the extent necessary to protect the resource, and undertake the following steps:</p> <p>a. record the location of the artifact;</p> <p>b. evaluate the direct impact of the activities on the artifact;</p> <p>c. if the above evaluation determines it necessary, alter the design and/or prescription of the license, permit, or road to conserve, mitigate or protect the artifact; and</p> <p>d. communicate the outcome of the evaluation to the First Nations whose artifact may be affected and offer to meet with the First Nation.</p>
Enhanced Resource Development Zones		<p>Harvest of this block is consistent with the result specified for Enhanced Resource Development Zones-Timber as specified in the 2017-2022 BCTS Kootenay Business Area FSP. As per sec 64 and 65 of the Forest Planning and Practices Regulation (FPPR), maximum cutblock size and green-up requirements do not apply as timber harvesting on this block will be to recover timber damaged by wildfire.</p>
Fire Maintained Ecosystems		<p>This block is not located within a Fire-Maintained (NDT4) ecosystem.</p>
Fisheries Sensitive Watersheds		<p>This block is not located within a fisheries sensitive watershed.</p>
Green-Up		<p>Green-up and cutblock size requirements do not apply to this block as timber harvesting is to recover timber damaged by wildfire (FPPR sec 64(2) and sec 65(4)).</p>
Invasive Plants		<p>Mapping by the Invasive Alien Plan Program (IAPP) does not indicate any known occurrences of invasive plants within or in close vicinity of the block, however there are mapped occurrences along the access route. As the block has been subject to wildfire resulting in exposed mineral soil, it is highly susceptible to the introduction of invasive plant species. As result, the following measures are to apply to harvesting and road building operations:</p> <p>a. Vehicles, mechanized equipment, culverts, bridges, and cattleguards are to be inspected for the presence of soil or plant material, including documentation on inspection forms, prior to being transported to or from work sites and if present, plant and soil materials are to be removed;</p> <p>b. To reduce the seedbed available to invasive plants, grass seeding is required on the following areas of exposed soil:</p> <ul style="list-style-type: none">- Cut and fills slopes of all newly constructed permanent road sections.- On all newly constructed landings once forestry operations and slash disposal are complete.- On all rehabilitated temporary roads and bladed skid trails.- On all permanent road sections covered under this site plan, once deactivated in accordance with deactivation plans prepared by a QRP. <p>Grass seeding is to be completed during the first available spring or fall after the completion of road construction and deactivation/rehabilitation activities, and no later than 12 months following mineral soil exposure. If utilizing a dry grass seeding method, seed shall be applied at a rate of 30-50 kilograms per hectare. Grass seeding is to use a high quality seed mix (a mix recommended by a MFLNRORD range specialist, if available, otherwise Canada Common #1 Forage mix or better grade) and obtain a certificate of analysis, providing a copy to the TSM upon request, to confirm that invasive plant seeds are not present in the seed mixes being utilized.</p> <p>3. Personnel completing post-harvest surveys will be required to identify and report all new observed infestations.</p>
Old and Mature Forests		<p>This block will result in the removal of 1.33ha of mapped OGMA within the MSdw for landscape unit I12 (Doctor/Fir). As per sec 5.3.1.2 of the 2017-2022 BCTS Kootenay Business Area FSP, harvest of OGMA is permitted for the purposes of removing timber damaged by wildfire.</p> <p>As per the FSP, replacement area of equal or great value is required. Consistent with the FSP, 2.01ha of replacement area has been identified. Details are provided in the TSL support document.</p>
Other Resource Features		<p>No other resources either as identified under sec 5 of the Government Action Regulation or as established under the Forest Practices Code are known to occur within the block or its immediate vicinity.</p> <p>Course Woody Debris (CWD): The block is mostly within the ESSFdk1 subzone with some overlap into the MSdw. To facilitate compliance with FSP objectives for CWD within the MSdw subzone, operators are to leave a minimum of 1.24m3/ha of CWD from a minimum of 4 logs/ha. Each log is to be a minimum of 2m in length and minimum 20cm diameter at one end. Where available, leave pieces greater than 5 meters length.</p> <p>For CWD, select dry over green material (if Sx or Fd), favor species other than Sx or Fd where available, and leave Fd/Sx stumps as low to the ground as possible.</p>
Range		<p>Three active range tenures overlap this block. No range developments are present within or in close proximity to the block.</p> <p>Harvesting of timber is not anticipated to result in the loss or rendering ineffective of any known natural range barrier.</p>
Recreation Sites & Trails		<p>Harvest of this block will not impact any authorized recreation site, trail, interpretative site, UREP or any other feature authorized for recreational use.</p>

Riparian	<p>Three watercourses have been identified within this block.</p> <p>R1 (S6): This reach originates from out-of- the-ground on the west side of the block. There is a continuous channel with varying amounts of scour and alluvial disposition. Average channel width is 0.94m and average depth is 0.21m. The average channel gradient is <20%, however LIDAR slope information indicates a gradient barrier downstream of the block where the watercourse flows into a steep gully. Gradient is approximately 50%. The stream channel also becomes poorly confined as it flows through A88447-2.</p> <p>Management: The upper portion of this reach is managed through a ≥5m width machine-free-zone (MFZ). Further downstream, the reach has been placed in a WTRA with 100% retention. Minimum retention is prescribed within the riparian management zone (RMZ) of the upper portion of this stream as timber has been impacted by wildfire with high windthrow potential as result of fire damaged root systems. Where available, green Lw/Fd >30cm dbh and that are structurally intact and have >50% of the root system intact are to be left within 20m of the stream.</p> <p>R2 (NCD): This reach originates from the ground and transitions between a poorly confined discontinuous channel to standing water/seepage. The reach connects into R1.</p> <p>Management: As result of wide areas of excessive soil moisture and/or standing water, much of this reach has been placed within a reserve (WTRA) to mitigate soil disturbance by machinery.</p> <p>R3 (S6): This reach consists of a high-volume flow perennial stream averaging 1.2-1.3 m wide. Depth averages 0.7m. The channel is continuous and well-defined. Immediately downslope of the Whitebark FSR, the stream flows down a slope whose average gradient >30% for >100m creating a barrier to upstream fish passage.</p> <p>Management: A machine Free zone has been placed at least 5m off both sides of the stream. Although a 20m RMZ is required, as result of damage by wildfire, minimal retention is prescribed as trees are highly unstable due to root damage posing a hazard to workers. Where available, green Lw/Fd with >50% of the root system intact and structurally sound are to be left within 20m of the stream. CRR23527 sec3 also will cross this stream. A 1600mm culvert is required at the stream crossing.</p> <p>Designated Crossings In all cases, the crossing of streams are to be only at designated locations as marked on the SP/ HP map. Harvesting supervisors are to verify that mapped crossing locations remain suitable at time of harvest and if not, choose an alternative suitable location. The number of crossing locations is to be minimized with random crossing locations prohibited. Skid crossings acceptable to BCTS must be used at all designated crossing locations.</p> <p>Drainage Structures Culverts of the sizes indicated in the Road site plan are to be installed at specified locations to ensure maintenance of drainage patterns. Additional cross drains are to be installed where necessary following guidance provided in the FLNRO Engineering manual.</p> <p>Trail Management All bladed skid trails are to be rehabilitated at completion of operations where soil conditions permit. To mitigate possible erosion, roughing of the soil surface and mixing of organic debris with soil is desirable to assist in water infiltration and faster reestablishment of natural vegetation. All rehabbed trails must be grass seeded as per requirements described in the site plans in effort to mitigate erosion.</p> <p>Stream Clean-out Slash and debris introduced to streams must be removed from all stream channels as per FSP requirements and outlined in the harvest plan.</p>
Road Site Plan	<p>As the soil erosion hazard is high for this block, grass seeding will be required on exposed soils of the following:</p> <p>Cut and fill slopes along new permanent roads Landings Deactivated and rehabilitated areas</p> <p>Seeding is to be completed during the first spring or fall after the completion of road construction and deactivation/rehabilitation activities and no later than 12 months following mineral soil exposure.</p> <p>It utilizing a dry grass seeding method, seed shall be applied at a rate of 30 to 50 kg/ha.</p> <p>Grass seeding will use high quality seed (a mix recommended by a MFLNRORD range specialist, if available, otherwise use Canada Common #1 forage mix or better grade). Obtain a certificate of analysis, providing a copy to the TSM upon request, to confirm that invasive plant seed are not present in the seed mixes being utilized.</p>

Soils	<p>Avoid harvesting operations during periods of excessive moisture such as spring freshet or after periods of heavy rainfall.</p> <p>All temporary trails and temporary roads are to be rehabilitated where soil conditions permit at completion of operations and/or hazard abatement. If trails/ roads cannot be fully rehabilitated due to unfavorable soil conditions, they must be left in a hydrologically stable state. Where rehabilitation occurs, scatter large woody debris and/or logging slash on rehabbed corridors to reduce soil erosion. Grass seed rehabbed areas as per FSP requirements as soil erosion hazard is high .</p> <p>Soil information from adjacent areas was used to infer soil characteristics for this block as result of safety concerns. Adjacent block (A90481-7) was found to consist of sandy loam with 40 % coarse fragments.</p> <p>Completion of a soil hazard assessment key using inferred soil characteristics and onsite terrain characteristics indicates no sensitive soils are present (no hazards rated as very high).</p> <p>Soils disturbance limits for Standard Units within this block are as follows based on soil hazard determinations:</p> <p>SU1: 10% of the Net Area to be reforested (NAR) of the SU.</p> <p>SU2: 10% of the Net Area to be reforested (NAR) of the SU.</p> <p>Roadside Work Areas: Soil disturbance must not exceed 25% of the area covered by roadside work areas.</p> <p>Temporary Access Structures: The maximum soil disturbance limit within each productive SU may be temporarily exceeded by 5% for the purpose of constructing temporary access structures, excluding the area covered by a roadside work area. Temporary access structures must be rehabilitated by the completion of harvest to a level not exceeding the maximum allowable soil disturbance limit for each SU.</p> <p>Permanent Access Structures: Maximum allowable PAS is 7% of the gross cutblock area (7.0ha). Planned PAS is 3.5ha.</p> <p>Trails: Bladed trails not previously identified on the SP/HP map are not to be constructed on terrain >60%.</p> <p>Terrain stability: A terrain stability assessment has been completed on select areas of this block . No changes to the block boundary or proposed road alignments were made.</p>
Visual Quality	<p>This block is not subject to visual quality objectives.</p>
Wildlife - Species at Risk	<p>WHA's: This block does not overlap any established wildlife habitat area.</p> <p>Wildlife Habitat Features: No wildlife habitat features as specified under Ministerial Order M213 "Wildlife Habitat Features in the Kootenay Boundary Region" are known to be present in this block based on observations at the time of layout or based on current available BCTS mapping.</p> <p>Where a wildlife habitat feature is encountered during operations, the following actions are to be taken:</p> <p>a. Stop all primary forest activities that could impact the WHF and report the WHF to the project supervisor and BCTS representative.</p> <p>b. Determine a course of action, considering existing management strategies, BMPs, professional guidance documents and/or recommendations from a QRP.</p> <p>c. Document the decision(s) made with a rationale, implementing the elements from 2b as appropriate, through an updated or amended project plan before proceeding with any primary forest activities in accordance with the updated or amended project plan.</p> <p>Conservation Data Center (CDC): Publically available mapping by the BC Conservation Data Center (CDC) does not indicate any overlap with the known habitat of any regionally important species or species of management concern.</p> <p>Williamson sapsucker: This block is outside of the East Kootenay Area of Occupation for Williamson Sapsucker as identified in "Best Management Practices for Timber Harvesting, Roads, and Silviculture for Williamson Sapsucker in British Columbia- East Kootenay Area of Occupancy." BMP's for Williamson Sapsucker do not apply to this block.</p> <p>Species of Management Concern: No species of management concern or their habitat as identified in "Species of Management Concern in the Kootenay Business Area" (VAST 2014) were observed or readily identified within this block at time of layout.</p> <p>In the event that a known species of risk or species of management concern is observed in the field during harvesting or road building activities notify the BCTS Project Supervisor as soon as possible. For observations note the location (gps coordinate) of the observation, the date of observation, the species, and the number of individuals seen or heard. Additionally (if possible), provide contact details of observer, details of the surrounding habitat where the observation occurred, and health of the animal observed.</p> <p>The BCTS supervisor once notified of the observation is to along with other planning staff /QPs recommend appropriate site level measures in mitigating impacts to the surrounding habitat.</p>

Wildlife - Grizzly Bear Habitat		<p>This block is not within a specified area established for grizzly bear.</p> <p>Despite this, where available operators are to retain patches of green advanced regeneration >1.3m tall and/or live alder occurring along existing roads and along planned road corridors in effort to provide screening from roadways into the harvest area.</p> <p>Coarse woody debris: Operators are to retain a minimum of 4 logs/ha of CWD with a minimum length of 2 meters (>= 5 meters if available) and a minimum diameter of 20cm at one end. Avoid leaving green Fd or Sx due to concerns with bark beetles.</p>
Wildlife - Ungulate Winter Range		This block does not overlap ungulate winter range as established by Order U-4-008.
Wildlife - Wildlife Tree Retention		<p>Three WTRA patches have been identified for TA0906-4 totalling 4.4ha. This exceeds the FSP WTRA requirement of 3.5% retention (3.49ha). Details of the WTRA are provided in the support document.</p> <p>Two additional reserves not contributing toward WTRA requirements have also been identified. These patches lack satisfactory WTRA attributes as to contribute to block-level requirements.</p>

STOCKING REQUIREMENTS

SU	NAR	STANDARDS ID #	OTHER PERFORMANCE STANDARDS
1	31.2	1062162	FDI/LW #203 - recommended for climate change adaptation; PA #201- Max 50% of pref & acc WS trees; BL #208 - refer to specific advance regeneration requirements. **Additional information or requirements are contained in the text of the latest version of the approved Rocky Mountain Natural Resource District Stocking Standards and is the complete standard (more footnotes apply).
2	59.4	1062163	FDI/LW #203 - recommended for climate change adaptation; BL #201- Max 50% of pref & acc WS trees; BL #208 - refer to specific advance regeneration requirements. **Additional information or requirements are contained in the text of the latest version of the approved Rocky Mountain Natural Resource District Stocking Standards and is the complete standard (more footnotes apply).
COMMENTS	2017-2022 BCTS Kootenay Business Area FSP (#601) consolidated to Amendment #5		

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL		

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
Chris Lovesey RPF	
DATE SIGNED	
August 6/2021	
<p>I certify that the work described herein fulfils standards expected of a member of the Association of British Columbia Forest Professionals, and that I did personally supervise the work.</p>	
<p>Chris Lovesey</p>	

Map attached forms an integral part of the site plan.

SILVICULTURE PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
TA0906	-	4	BF790			Lavington Fire 2	50 03 05 / 115 59 45

ECOLOGICAL INFORMATION

SU	Ecology Unit	Area	Zone	Subzone	Variant / Phase	Site Series (series - %)	Elevation Avg (m)	Slope Avg (%)	Aspect	Slope Position	Rooting Depth (cm)	Soil Texture
1	1	31.18	ESSF	dk	1	103-100	1,663	30	S	Middle Slope	40	SL
2	2	59.44	ESSF	dk	1	104-100	1,610	37	NE	Middle Slope	40	SL

STOCKING REQUIREMENTS

ASSESSMENT DATES

Standard Unit	Standards ID	Regen Delay (yrs)	Freegrow Early (yrs)	Freegrow Late (yrs)
1	1062162	7	0	20
2	1062163	7	0	20

Min/Max Elevation Regime: 1555 / 1700

SU : 1 REGENERATION LAYER									
PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)		MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	3000	Max	4000
						WELL SPACED TREES (sph)			
Fdi Douglas Fir - Interior	1.0		Bl Subalpine Fir	0.8		Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Lw Western Larch	1.6					1000	500	400	2.0
Sx Hybrid Spruce (SE x SW)	0.8					Height Relative to Competition (%)			
Pli Lodgepole Pine - Interior	1.6					125			
Pa Whitebark Pine	0.8								

SU : 2 REGENERATION LAYER									
PREFERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)		MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	3000	Max	4000
						WELL SPACED TREES (sph)			
Bl Subalpine Fir	0.8		Pa Whitebark Pine	0.8		Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Fdi Douglas Fir - Interior	0.8					1200	700	600	2.0
Sx Hybrid Spruce (SE x SW)	0.8					Height Relative to Competition (%)			
Pli Lodgepole Pine - Interior	1.6					125			
Lw Western Larch	1.6								

OTHER REQUIRED STOCKING INFORMATION

2017-2022 BCTS Kootenay Business Area FSP (#601) consolidated to Amendment #5

ACTIVITIES

SILVICULTURE ACTIVITY COMMENTS	
ACTIVITY	COMMENT

MANAGEMENT STRATEGY

COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION	
Retain 1.24m3/ha of CWD made up of a minimum of 4 logs/ha with a minimum length of 2m (>5 meters if available) and a minimum diameter of 20cm at one end.	
Avoid leaving green spruce or Fd as result of bark beetle concerns.	
Cut stumps of Fd and Sx as low as possible.	
Performance Std. (%):	Block Target (%): Coarse Woody Debris (m3/ha): 1.2

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL		

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
Chris Lovesey RPF	
DATE SIGNED	
August 6/2021	
I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to standards acceptable of a Registered Professional Forester.	