



**SITE PLAN
KAMLOOPS
BC TIMBER SALES**

Report Date 2021/02/05

TENURE IDENTIFICATION

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
TA1349	-	RLA0W	BEA0W			Sutter Creek	49 26 11 / 121 01 34

AREA UNDER THE PLAN

GROSS AREA (TAUP)	PAS	NP	WTRA / WTP	RESERVES	OTHER	NAR
28.3	1.1	0.0	4.6	0.0	0.0	22.6

ADDITIONAL COMMENTS

DEFINITIONS (ADD DEFINITIONS AS REQUIRED)
Block RLA0W is located in the Merritt Timber Supply Area (TSA) and the Tulameen Landscape Unit. Long Term Management Objectives for this block are consistent with the approved BC Timber Sales Forest Stewardship Plan (FSP ID #109 - Commencing July 1, 2018). For the purposes of FRPA S.10(2), the "Site" (refer to the associated SP map) includes the block (Area Under the Plan) and the following proposed roads: ME R223250.01, ME RLA0W.01 and .02
Standard Unit (SU) 1 and 2 are located in a ESSF mw 1 biogeoclimatic zones, subzones, and variants. Based on site attributes (topography, plants, timber), it was determined that the SUs are an 06 (90%) and 01 (10%) site series.

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	Due to moderate soil compaction throughout this block, ground based operations should occur during non-saturated soil conditions or on frozen or snow-covered soils. Use a random skidding pattern and avoid skidding across depressions/low lying areas when wet. The proposed harvest area contains predominantly Rank 4 (Moderately High) and small areas of Rank 1 (Very Low) polygons (BCTS Migratory Bird Strategy) and has a timing restriction recommendation on operations from April 16 to August 8.			
2	Due to moderate soil compaction throughout this block, ground based operations should occur during non-saturated soil conditions or on frozen or snow-covered soils. Use a random skidding pattern and avoid skidding across depressions/low lying areas when wet. The proposed harvest area contains predominantly Rank 4 (Moderately High) and small areas of Rank 1 (Very Low) polygons (BCTS Migratory Bird Strategy) and has a timing restriction recommendation on operations from April 16 to August 8.			

RESULTS AND STRATEGIES

RESULT OR STRATEGY	HOW THE STRATEGY OR RESULT APPLIES TO THE SITE or RATIONALE (IF NOT APPLIED)
Cultural Heritage	<p>FSP Sec 5.8 Cultural Heritage Resources (CHR): The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the Heritage Conservation Act.</p> <p>BCTS has referred this development to all potentially affected First Nations, as was determined through a search of the Consultative Area Database (CAD). All referral communication and management decisions have been documented in a BCTS Due Diligence Report signed off for approval by the Timber Sales Manager (TSM). This Site Plan is consistent with the management decisions and measures approved by the TSM.</p> <p>A "Modify/Stop Work Procedure" has been included in the harvest plan in the event that previously unidentified Cultural Heritage Resources (CHR's) are encountered during industrial activities on the Site.</p>
Invasive Plants	<p>FSP Sec 7.1 Invasive Plants – Measures</p> <p>This block is not located within an invasive plant zone.</p> <p>To prevent the spread of invasive plants, all disturbed from road construction, reconstruction or deactivation as well as construction of or use of borrow pit will be seeded with a forage mixture that meets or exceeds Canada Common Number 1 Forage Mixtures as defined by the Canada Seeds act and Regulation or Native Shrubs. 90% of the seedling will be complete by July of the following calendar year and the remainder is required to be completed by December 31st of the same calendar year.</p>
Landscape Level Biodiversity	<p>FSP Section 5.5 - Wildlife & Biodiversity - Landscape Level - Block RLA0W (22.4ha NAR) is not located sufficiently close enough to other proposed or existing openings for their net areas to contribute to opening size or for them to be considered adjacent.</p>

Old Growth Constraints		<p>FSP Sec 5.1. Old Growth Order Strategy:</p> <p>Strategy:</p> <p>The holder of this FSP will not undertake harvesting to which this FSP applies within an Old Forest Polygon, except:</p> <p>(a) to facilitate road maintenance;</p> <p>(b) to eliminate a safety hazard if there is no other practicable option for addressing the hazard;</p> <p>(c) where the harvesting is less than 1.0 hectares, and the harvesting will not result in a material adverse impact on the old forest attributes of the Old Forest Polygon;</p> <p>(d) where:</p> <p>(i) the harvest area exceeds the amount referred to in (c); and</p> <p>(ii) on or before the reporting of harvest completion for the cutblock, the holder of this FSP identifies a replacement forest polygon that:</p> <p>(A) is of equal or greater size to the Old Forest Polygon area to be harvested;</p> <p>(B) is within the same landscape unit (or adjacent to the harvested Old Forest Polygon in an adjacent landscape unit), biogeoclimatic zone, subzone and variant as the Old Forest Polygon to be harvested (unless otherwise agreed to in writing by the Ministry responsible for the Order);</p> <p>(C) contains forest cover that is consistent with one of the following:</p> <p>I. the age of old forest identified in Section 2 of the Order;</p> <p>II. Section 6 of the Order, or</p> <p>III. of equal or greater age class of the Old Forest Polygon to be harvested; and</p> <p>(D) is sent the host (MFLNRORD staff) of the Consolidated OGMA map once per year.</p> <p>The gross block boundary of RLA0W overlaps portions of a non-legal Old Growth Management Area (KAM_TME_83). The encroachment consists of the WTRA associated with RMZ of Sutter Creek, The harvest area of block RLA0W is not within the OGMA The block is consistent with section 5.1 of the FSP.</p>
Range		<p>FSP Sec 6.1 Natural Range Barriers – Measures</p> <p>In relation to the objectives set by government to mitigate the effect of removing or rendering ineffective Natural Range Barriers, the FSP Holder will:</p> <p>(a) On an annual basis, where new harvesting or road construction activities are proposed within or adjacent to (within 500m) existing Range Tenure, refer the proposed activities to the potentially affected range agreement holder. The referral will:</p> <p>(i) Specify the location of the proposed harvesting and road construction; and</p> <p>(ii) Request that the range agreement holder identify the location Natural Range Barriers that may be rendered ineffective by the proposed harvesting or road construction; and</p> <p>(b) Prior to harvesting a cutblock or constructing a road:</p> <p>(i) Where the range agreement holder responds within the timelines specified in the referral and identifies a Natural Range Barrier that will be removed or rendered ineffective, develop a NRB Mitigation Strategy, incorporating the information communicated by the range agreement holder to the extent that it is practicable to do so;</p> <p>(ii) Where there is knowledge of a Natural Range Barrier, and where the Range Agreement fails to respond to the referral, advise the MFLNRORD District Range staff and ask for any input they may have;</p> <p>(iii) Where a NRB Mitigation Strategy cannot be agreed to with a range agreement holder, develop a NRB Mitigation Strategy with input from the MFLNRORD District Range Staff;</p> <p>(iv) Communicate the NRB Mitigation Strategy to the range agreement holder;</p> <p>(v) Where new harvesting or road construction is proposed in an area where Range Tenure is not currently assigned, refer the proposal to the MFLNRORD District Range Staff;</p> <p>(c) Where the Ministry responsible for Range responds within the timelines specified in the referral and identifies that a Natural Range Barrier will be removed or rendered ineffective, develop a NRB Mitigation Strategy, incorporating the information communicated by the MFLNRORD District Range Staff; and</p> <p>(d) Conduct activities that are the responsibility of the FSP holder consistent with the NRB Mitigation Strategy.</p> <p>The block RLA0W does not overlap any existing range tenures and is consistent with section 6.1 of the FSP.</p>

Recreation		<p>FSP Sec 5.9.2 Recreation Sites, Trails, and Interpretive Forest Sites.</p> <p>Strategy:</p> <p>(a) A Holder of this FSP carrying out or authorizing primary forest activities within an area in the FDU that is subject to the Notice will not:</p> <p>(i) authorize or carry out primary forest activities in areas identified as semi primitive in the objective,</p> <p>(ii) authorize or construct a new road within 50m of a feature identified as non-motorized in the objective,</p> <p>(iii) cause to have existing levels of access rendered ineffective where that access is maintained by or on behalf of other users,</p> <p>(iv) authorize or conduct primary forest activities within 10 m (slope distance) of a shore where shoreline and or natural vegetation conservation is identified in the objective for that feature,</p> <p>(v) authorize or conduct activities within 10 meters slope distance of a feature identified for conservation of a shore or shore and natural vegetation,</p> <p>(vi) authorize or conduct machine ground traffic or remove wind firm woody vegetation from within 2.5 m of a site identified for conservation of vegetation,</p> <p>(vii) authorize or conduct or allow motorized use of a trail that prohibits such use, or,</p> <p>(viii) cause to have a trail or site rendered ineffective.</p> <p>(b) Subsection (a) does not apply to the extent</p> <p>(i) necessary to remove trees within 2.5m of a trail or site where those trees pose a forest health or wind throw risk,</p> <p>(ii) necessary to provide trail crossing where no other practicable option exists, or</p> <p>(iii) necessary to provide for the use of a trail to the extent necessary to facilitate harvesting or road construction and use on or contiguous to that trail, unless the Ministry responsible for the site objectives agrees to specific proposed activities, and the specified activities are carried out under the conditions of the agreement.</p> <p>RLA0W (<0.1ha) and the access road is within the Sutter Creek (REC 1659) recreational site polygon. Falling, yarding and loading activities are well removed from the developed portion of the recreational site. A Recreation Regulation Section 16 was issued on June 7, 2016 and extended in 2020 to conduct industrial operations within the recreational site.</p> <p>A minimum of three days prior to and during operations, post and maintain "Industrial Activity" notice signage at the junction of the access road and Tulameen</p> <p>FSR informing public users of the pending/active industrial activity.</p> <p>The block RLA0W is consistent with FSP Sec 5.9.2</p>
Riparian Management		<p>FSP Section 5.4 - Water, Fish, Wildlife & Biodiversity Within Riparian Areas - The management strategies for the riparian management zones (RMZ) located within this block are anticipated to conserve at the landscape level, the water quality, wildlife habitat, and biodiversity associated with those riparian areas.</p> <p>S2's</p> <p>RLA0W-1-S2 (Sutter Cr): The Riparian Reserve Zone (RRZ) for this stream is beyond the block boundaries. The majority of the RMZ for this stream exists outside of the harvest area and has been retained in a WTRA. Portions of the RMZ that overlaps the harvest area will be managed per SU-1 or SU-2. Bladed skid trails should be avoided in RMZ.</p> <p>S3's</p> <p>RLA0W-1-S3: The RRZ for this stream is outside of the block boundaries. The majority of the RMZ for this stream exists outside of the harvest area. RMZ that overlaps the harvest area will be managed per SU-1. Bladed skid trails should be avoided in RMZ.</p> <p>S4's</p> <p>RLA0W-1-S4 through RLA0W-3-S4: The streams are located a minimum of 10 meters outside of the block boundary. Areas where the RMZ overlaps the harvest area are to be managed per SU1 and SU2. The retention targets have been achieved.</p> <p>S6's</p> <p>RLA0W-1-S6b through RLA0W-5-S6b: A machine free zone (MFZ) has been ribboned adjacent to all S6's within the harvest area. The RMZ for RLA0W-(4 and 5)-S6bs have not been marked in the field as greater than 20% basal area associated with these streams will be retained outside the harvest area.</p> <p>The RMZs for RLA0W-(1,2, and 3)-S6bs have been established and marked in the field. In order to meet the 20% basal area retention target for these S6's, refer to Leave Tree Characteristics for retention targets. Refer to the attached map for required designated crossings which may be moved for operational feasibility.</p> <p>RLA0W-1-S6b:</p> <p>Cross stream yarding is planned across on the stream. Hand falling is required on the western side of the stream. To maintain stream bank stability, timber within the RMZ should be felled over the stream during bunching/handfelling operations such that lower slopes can be yarded over the felled timber to protect stream banks. Operations should occur during late summer or winter when the stream is at low water levels or covered in snow. The stream will be cleaned post-harvest.</p> <p>RLA0W-3-S6b:</p> <p>A narrow band of timber exists between the stream and boundary where hand falling is required to fall the trees into lead for skidding.</p> <p>NCD's</p> <p>RLA0W-1-NCD through RLA0W-8-NCD: The NCD's identified on the site plan map are protected with machine free zone (MFZ). Where practicable, fall and skid away from NCD. If it is necessary to skid across an NCD, minimize the number of crossings. Ensure natural drainage is maintained for all NCD. Designated crossings are shown on the attached maps but are not flagged in the field and may be moved as required for operability and safety.</p>

Soil Management		<p>FSP Sec 5.2 Soil Management and Conservation Objective (all)</p> <p>The objective set by government for soils, is without unduly reducing the supply of timber from British Columbia's forests, to conserve the productivity and the hydrologic function of soils.</p> <p>As per FPPR Section 35:</p> <p>A maximum of 10% soil disturbance is permitted in the Net Area to be Reforested and a maximum of 25% soil disturbance in the roadside work area.</p>
Stand Level Biodiversity		<p>FSP Section 5.6 - Wildlife & Biodiversity - Stand Level - This block is consistent with the biodiversity objectives established for cutblocks proposed for harvesting in the Merrit TSA.</p> <p>A 4.57ha WTRA equal to 16.1% of the TAUP (28.3ha) has been allocated to an area that is representative of the preharvest stand and is directly adjacent to the block boundary.</p> <p>There are no plans to harvest existing wildlife tree patches or areas (WTP/WTRA).</p> <p>This is consistent with Sections 66 and 67 of the FPPR.</p>
Ungulate Winter Range		<p>FSP Section 5.7.3 - Wildlife Objectives - Ungulate Winter Range - This block is not within an identified planning cell for Mule Deer, Moose, Bighorn Sheep, Elk or Mountain Goat</p>
Visual Objectives		<p>FSP Sec 5.9 Other Objectives Established or Continued under FRPA:</p> <p>The objective set by the government in relation to visual quality for a scenic area, that</p> <ul style="list-style-type: none"> • was established on or before October 24, 2002, and • for which there is no visual quality objective <p>is to ensure that the altered forest landscape for the scenic area</p> <ul style="list-style-type: none"> • in visual sensitivity class 1 is in either the preservation or retention category, • in visual sensitivity class 2 is in either the retention or partial retention category, • in visual sensitivity class 3 is in either the partial retention or modification category, • in visual sensitivity class 4 is in either the partial retention or modification category, and • in visual sensitivity class 5 is in either the modification or maximum modification category. <p>Where the holder of this FSP harvests a cutblock or constructs a road within a Visual Landscape Unit, the resulting visual alteration (including established cutblocks and established roads) when assessed from a significant public viewpoint at completion of harvesting or road construction will be consistent with the applicable category described in FPPR Section 1.1 (Categories of Visually Altered Forest Landscape) base on the Established Visual Quality Objective.</p> <p>A Visual Impact Assessment is not required as Block RLA0U is not located in a Visual Landscape Inventory Polygon with assigned Visual Quality Objectives</p>
Watersheds/Hydro Assessments		<p>FSP Sec 5.3 Community Watersheds</p> <p>The objective set by government for water being diverted for human consumption through a licensed waterworks in a community watershed is to, without unduly reducing the supply of timber from British Columbia's forests; prevent the cumulative hydrological effects of primary forest activities within the community watershed from resulting in:</p> <p>(a) a material adverse impact on the quantity of water or the timing of the flow of the water from the waterworks; or</p> <p>(b) the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under</p> <p>i. an enactment; or</p> <p>ii. the license pertaining to the waterworks</p> <p>Section 5.3 does not apply as Block RLA0U is not located in a Community Watershed.</p>
Wildlife/Endangered Species		<p>FSP Section 5.7 - Wildlife Objectives - The approved FSP states the Results and Strategies for the following Species At Risk (SAR): Coastal Tailed Frog, Flammulated Owl, Spotted Bat, Grizzly Bear, "Great Basin" Gopher Snake and Williamson's Sapsucker.</p> <p>Block RLA0W is located within a grizzly bear compartment, however it does not contain moderate or high berry production, or riparian spring range as identified in the Recovery Plan for Grizzly Bear in the North Cascades of BC. Objectives for grizzly bear do not apply to the Merritt TSA, as per the approved FSP.</p> <p>There are no known Wildlife Habitat Areas within or in the vicinity of the block for Coastal Tailed Frog, Interior Screech Owl, or Grizzly Bear, as per the approved WHA Order for each of these SAR. As with "Great Basin" Gopher Snake, Flammulated Owl, and Spotted Bat, no preferred nesting, roosting or foraging sites were identified within, or in the periphery of this block during field engineering or collection of data for this Site Plan.</p> <p>Mountain beaver dens have been identified and are shown in approximate locations on the attached map(s) as wildlife occurrence points. Mountain beaver dens have been protected with MFZ flagging. All skid crossings must be visually inspected for mountain beaver dens prior to construction and moved where operationally feasible.</p> <p>During forestry operations if unmarked mountain beaver dens are located, the Timber Sales Manager, will require that the operations cease to the extent necessary to protect the den with Machine Zone Flagging.</p> <p>White Bark Pine (Pa) is an endangered blue listed species and if encountered during forestry operations are to be retained.</p>

STOCKING REQUIREMENTS

SU	NAR	STANDARDS ID #	OTHER PERFORMANCE STANDARDS
1	20.9	1011535	
2	1.7	1011535	
COMMENTS	<p>The Net Area to be Reforested in Block RLA0W is 22.5ha.</p> <p>SU-1 (20.7ha) - 100% Se Se (100%) = 1600sph = 33,120 seedlings Density: 1600 stems/ha Season: Summer</p> <p>SU-2 (1.7ha) - 100% Se Se (100%) = 1600sph = 2,720 seedlings Density: 1600 stems/ha Season: Summer</p> <p>The selected stocking standard is based on the site series for the ESSF mw biogeoclimatic subzone. Standard Units SU1 and SU2 cover the whole net area to be reforested in the block and is an 06 (90%) and 01(10%) Site Series.</p> <p>The block should be planted in the summer and monitored thereafter for competing vegetation, in particular around the moisture receiving sites. It is not anticipated that brushing will be required, however, snow press may be an issue. Fill plant as required based on findings from stocking surveys.</p> <p>Seed zones: Class B: All species =TOD. Class A: Lw-Lw1, Cw=SM, Ba=SM, Ax=SM, Sx=SM, Pw=SM, Fdc=SM</p>		

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2021 02 05	YES

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
ROB CLARK	
DATE SIGNED	
2021/02/05	
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.	

Map attached forms an integral part of the site plan.

SUPPORT DOCUMENT

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
TA1349	-	RLA0W	BEA0W			Sutter Creek	49 26 11 / 121 01 34

ASSESSMENTS

VISUAL IMPACT ASSESSMENT INFORMATION	
A Visual Impact Assessment is not required as Block RLA0W is not located in a Visual Landscape Inventory Polygon with assigned Visual Quality Objectives.	
PEST INCIDENCE SURVEY INFORMATION	
Pest Specific Comments	
Cruise data (full volume) indicates that: Subalpine fir is 6% grey attack.	
Subalpine fir accounts for 20% of the stand volume	
Forest Health Comments	
No significant presence of root disease was identified during development activities.	
ARCHAEOLOGICAL IMPACT ASSESSMENT INFORMATION	
FSP Sec 5.8 Cultural Heritage Resources (CHR): The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the Heritage Conservation Act.	
BCTS has referred this development to all potentially affected First Nations, as was determined through a search of the Consultative Area Database (CAD). All referral communication and management decisions have been documented in a BCTS Due Diligence Report signed off for approval by the Timber Sales Manager (TSM). This Site Plan is consistent with the management decisions and measures approved by the TSM.	
A "Modify/Stop Work Procedure" has been included in the harvest plan in the event that previously unidentified Cultural Heritage Resources (CHR's) are encountered during industrial activities on the Site.	
TERRAIN STABILITY FIELD AND GULLY ASSESSMENTS INFORMATION	
Terrain Stability Comments	
A terrain assessment was completed by Statlu Environmental in 2016. The assessment noted two areas of high hazard terrain adjacent to the block and provided a recommendation to operations within the merchantable area.	
1. A rotational slump is ~20m beyond the block boundary east of Stn. 21. The approximate location is noted on the attached maps. The boundary was moved ~20m during layout to decrease the hazard within the merchantable area to low. No further site specific management required.	
2. A raveling slope that is being undercut by Sutter Cr is located adjacent to the block boundary east of Stn 10. A 7m wide machine free zone was placed around the break in slope above the raveling slope to avoid loading the slope during harvesting or post harvest activities.	
3. The merchantable area has a low terrain stability hazard and it is unlikely that landslides would initiate. The block has gentle over steep terrain above Sutter Creek so mass wasting could occur as a result of drainage diversion or concentration from gently sloping terrain to steeper terrain, similar to the sideslopes between Sutter Creek and the block boundary. Such landslides can be prevented by maintaining existing drainage patterns and avoiding diverting or concentrating drainage.	
Gully Comments	
None	
VEGETATION	
Competing vegetation is not anticipated to be an issue in Block RLA0W as long as trees are planted as soon as possible after harvest. Fireweed should be monitored at early silviculture surveys.	

RIPARIAN ASSESSMENTS

Management Strategies

The management strategies for the riparian management zones (RMZ) located within this block are anticipated to conserve at the landscape level, the water quality, wildlife habitat, and biodiversity associated with those riparian areas.

S2's
RLA0W-1-S2 (Sutter Cr): The Riparian Reserve Zone (RRZ) for this stream is beyond the block boundaries. The majority of the RMZ for this stream exists outside of the harvest area and has been retained in a WTRA. Portions of the RMZ that overlaps the harvest area will be managed per SU-1 or SU-2. Bladed skid trails should be avoided in RMZ.

S3's
RLA0W-1-S3: The RRZ for this stream is outside of the block boundaries. The majority of the RMZ for this stream exists outside of the harvest area. RMZ that overlaps the harvest area will be managed per SU-1. Bladed skid trails should be avoided in RMZ.

S4's
RLA0W-1-S4 through RLA0W-3-S4: The streams are located a minimum of 10 meters outside of the block boundary. Areas where the RMZ overlaps the harvest area are to be managed per SU1 and SU2. The retention targets have been achieved.

S6's
RLA0W-1-S6b through RLA0W-5-S6b: A machine free zone (MFZ) has been ribboned adjacent to all S6's within the harvest area. The RMZ for RLA0W-(4 and 5)-S6bs have not been marked in the field as greater than 20% basal area associated with these streams will be retained outside the harvest area.

The RMZs for RLA0W-(1,2, and 3)-S6bs have been established and marked in the field. In order to meet the 20% basal area retention target for these S6's, refer to Leave Tree Characteristics for retention targets. Refer to the attached map for required designated crossings which may be moved for operational feasibility.

RLA0W-1-S6b:
Cross stream yarding is planned across on the stream. Hand falling is required on the western side of the stream. To maintain stream bank stability, timber within the RMZ should be felled over the stream during bunching/handfalling operations such that lower slopes can be yarded over the felled timber to protect stream banks. Operations should occur during late summer or winter when the stream is at low water levels or covered in snow. The stream will be cleaned post-harvest.

RLA0W-3-S6b:
A narrow band of timber exists between the stream and boundary where hand falling is required to fall the trees into lead for skidding.

NCD's
RLA0W-1-NCD through RLA0W-8-NCD: The NCD's identified on the site plan map are protected with machine free zone (MFZ). Where practicable, fall and skid away from NCD. If it is necessary to skid across an NCD, minimize the number of crossings. Ensure natural drainage is maintained for all NCD. Designated crossings are shown on the attached maps but are not flagged in the field and may be moved as required for operability and safety.

Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
RLA0W-2-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The Riparian Management Zone (RMZ) for this streams has been marked in the field. See Leave Tree Characteristics for details of reserve trees.
RLA0W-3-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area. A designated crossing has not been proposed above the road on RLA0W-3-S6. A narrow band of timber exists between the stream and boundary where hand falling is required to fall the trees into lead for skidding.
	RMZ	1	20.0		The Riparian Management Zone (RMZ) for this streams has been marked in the field. See Leave Tree Characteristics for details of reserve trees.
RLA0W-4-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The RMZ has not been marked in the field as greater than 20% basal area associated with the stream will be retained outside the harvest area. See Leave Tree Characteristics for details of reserve trees.
RLA0W-5-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The RMZ has not been marked in the field as greater than 20% basal area associated with the stream will be retained outside the harvest area. See Leave Tree Characteristics for details of reserve trees.
RLA0W-1-S4 S4	RRZ	2	10.0		The stream is located more than 10 meters outside of the harvest area. No additional management required.
	RMZ	2	20.0		The majority of the Riparian Management Zone (RMZ) for the stream is located outside of the harvest area. Areas of the RMZ that are within the harvest area are to be managed per SU-2. The retention targets have been achieved.
RLA0W-2-S4 S4	RRZ	1	10.0		The stream is located more than 10 meters outside of the harvest area.
	RMZ	1	20.0		The Riparian Management Area (RMA) for these streams have NOT been marked in the field. Bladed skid trails should be avoided in RMA. The majority of the RMA with the block is located within WTRA #2. Areas that overlap the harvest area are to be managed per SU1. The retention targets have been achieved.
RLA0W-3-S4 S4	RRZ		10.0		The stream is located more than 10 meters outside of the harvest area. No additional management required.
	RMZ		20.0		The Riparian Management Zone (RMZ) for the stream is either located outside of the block, or within WTRA #2. No additional management is required. The retention targets have been achieved.
RLA0W-1-S2 S2	RMZ	1	20.0		The Riparian Management Area (RMA) for Sutter Creek (RLA0W-1-S2) has NOT been marked in the field. Bladed skid trails should be avoided in RMA. See Leave Tree Characteristics for details of reserve trees.
	RRZ	1	30.0		The Riparian Reserve Zone (RRZ) for Sutter creek (RLA0W-1-S2) is beyond the block boundary. No further management required.
RLA0W-1-S3 S3	RRZ	1	20.0		The Riparian Reserve Zone (RRZ) for this stream is located outside of the block boundary.
	RMZ	1	20.0		The Riparian Management Area (RMA) for this stream has NOT been marked in the field. Bladed skid trails should be avoided in RMA. See Leave Tree Characteristics for details of reserve trees.
RLA0W-1-NCD NCD	MFZ	1	5.0		RLA0W-1-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained.
RLA0W-2-NCD NCD	MFZ	1	5.0		RLA0W-2-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. A designated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety.
RLA0W-3-NCD NCD	MFZ	1	5.0		RLA0W-2-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from NCD. If it is necessary to skid across an NCD, minimize the number of crossings. Ensure natural drainage is maintained for all NCD. A designated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety.
RLA0W-4-NCD NCD	MFZ	1	5.0		RLA0W-4-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. The NCD is located primarily within the Riparian Management Area of RLA0W-3-S4.
RLA0W-5-NCD NCD	MFZ				RLA0W-5-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. The NCD is partially located within the Riparian Management Area of RLA0W-3-S4.

RLA0W-6-NCD NCD	MFZ	1	5.0		RLA0W-6-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. A designated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety. The NCD is located partially within the Riparian Management Area of RLA0W-2-S6 and RLA0W-3-S6.
RLA0W-7-NCD NCD	MFZ	1	5.0		RLA0W-7-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. A designated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety.
RLA0W-8-NCD NCD	MFZ	1	5.0		RLA0W-8-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. Ensure natural drainage is maintained.
RLA0W-1-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The Riparian Management Zone (RMZ) for this streams has been marked in the field. See Leave Tree Characteristics for details of reserve trees.

SOIL ASSESSMENT							
HAZARD RATINGS				SOIL CHARACTERISTICS			
SU	Soil Comp	Soil Erosion	Soil Disp	Depth To Unfavourable Subsoil		Type of Unfavourable Subsoil	Sediment Delivery Risk (Community Watersheds)
				Min(cm)	Max(cm)		
1	M	H	L			NNTD	
2	M	H	L			NNTD	
COMMENTS							
Soils within RLA0W are primarily Silty loam with a moderate compaction hazard, a high erosion hazard, and a low displacement hazard. Permanant Access Structures (PAS) associated with Block RLA0W include a proposed road (ME R23250.02) and 1 designated landing. Total PAS = 1.1 ha or 3.9% of the Total Area Under the Plan (TAUP = 28.3ha). This does not exceed the 7% allowable PAS as defined in FPPR S.36.							

RESERVE / RETENTION INFORMATION

WTRA / WTP (INSIDE OR ATTRIBUTED TO THE BLOCK)						
I.D.#	Area	Description				
WTP	4.6	WTRA # 1 (0.12 ha): SeBa(BI) 845 - Established to exclude steep slopes and contribute to biodiversity.				
		WTRA # 2 (4.45 ha): SeBa(BI) 845 - WTRA has been designated to contribute to biodiversity and protect the RMA of RLA0W-1-S2 "Sutter Creek" as well as numerous mountain beaver dens.				
GROUP WTRA / WTP AND SITE DEG. CALCULATION (to be retained on the first block of the Permit only)						
Block	Gross Cutblock Area	WTRA / WTP	%	BEC	Perm Access	%
RLA0S	40.0	4.5	11.3	ESSF/mw/	1.3	3.3
RLA0U	4.0	0.2	4.7	MS/dm/2	0.2	5.4
RLA0W	28.3	4.6	16.1	ESSF/mw/	1.1	3.9
Total # of Blocks: 3	72.3	9.3	12.8		2.6	3.7

SUPPORTING INFORMATION

HLP/FSP CONSIDERATIONS
Wildlife/Endangered Species Comments
<p>Migratory birds:</p> <p>The design of this harvest area considered Migratory Bird Habitat polygons (4, 5, and 6) and the Beneficial Management Practices as outlined in the BCTS Migratory Bird Strategy (2016).</p> <p>The proposed harvest area contains predominantly Rank 4 (Moderately High) and small areas of Rank 1 (Very-Low) polygons (BCTS Migratory Bird Strategy). The Migratory Bird Guidance Document Appendix A (Nest Density Matrix V1.3) states that in ESSF BEC Zone where the stand is Spruce Balsam leading with an average age of 121-250 years, and has an average height between than 19.5m and 28.4m, all Ranked polygons in that cutblock can be changed to Rank 4 (Moderately High). This methodology was followed and applied to the harvest area. the following management strategies were implemented:</p> <p>BMP PL2- Patch and edge retention around biodiversity anchors. BMP LO3-Unplanned/Unmarked Retention BMP LO2-Riparian Protection</p> <p>The block is consistent with the BCTS Migratory Bird Strategy (2016).</p> <p>If a previously unidentified migratory bird species or its nest is encountered during harvesting, road construction, or a silviculture activity associated with this Site Plan, the Timber Sales Manager (TSM), will require that the operations cease to the extent necessary to protect the affected migratory bird species or nest until alternative BMP's can be implemented to minimize or prevent the risk of incidental take.</p> <p>Small Mammal Strategy:</p> <p>Retain standing stems as potential den trees (Act >90 cm dbh, and/or, At >44cm dbh, and/or, non-merchantable PI >35cm dbh) at a minimum density of 0.1 stems per hectare. Target = 2 suitable trees within the net harvest area. In addition, Coarse Woody Debris (CWD) piles and rest logs to be configured as follows: Piles = >3mx5mx2m high with >30% of pieces >20cm diameter and >3m long. Target = 0.5 CWD piles per ha or 8 piles within the net harvest area. Rest logs either hardwood or hollow logs >20cm diameter and >10m in length and elevated 25-50cm above the ground. Target =10 per hectare.</p> <p>Mountain Beaver:</p> <p>Mountain beaver dens have been identified and are shown in approximate locations on the attached map(s) as wildlife occurrence points. Mountain beaver dens have been protected with MFZ flagging. All skid crossings must be visually inspected for mountain beaver dens prior to construction and moved where operationally feasible.</p> <p>During forestry operations if unmarked mountain beaver dens are, the Timber Sales Manager, will require that the operations cease to the extent necessary to protect the den with Machine Zone Flagging.</p> <p>Grizzly Bear:</p> <p>Block RLA0W is located within a grizzly bear compartment, however it does not contain moderate or high berry production, or riparian spring range as identified in the Recovery Plan for Grizzly Bear in the North Cascades of BC. Objectives for grizzly bear do not apply to the Merritt TSA, as per the approved FSP.</p> <p>Whitebark Pine:</p> <p>White Bark Pine (Pa) is an endangered blue listed species and if encountered during forestry operations these stems are to be retained.</p> <p>FSP.</p>
Range Comments
<p>There is no active Range Tenure in the vicinity of the block.</p>
Fisheries Comments
<p>An S2 (Sutter Creek)is located to the south of block RLA0W. The prescribed riparian reserve is located outside of the block boundary and will not be subject to harvest. The majority of the riparian management area exists outside of the harvest area. any area where the RMZ does overlap the harvest area and will be managed per SU-1 or SU-2.</p> <p>There are three S4's are adjacent to the harvest area, the streams are a minimum of 10 meters from the harvest area and the riparian retention targets will be achieved.. The RMZs RLA0W-1-S4 and RLA0W-2-S4 are within the harvest area and will be managed as per SU1 and SU2. The RMZ of RLA0W-3-S4 is outside the harvest area. To maintain stream bank stability, timber within the RMA should be felled over the stream during bunching/handfelling operations such that lower slopes can be yarded over the felled timber to protect stream banks. Operations should occur during late summer or winter when the stream is at low water levels or covered in snow. The stream will be cleaned post harvest.</p> <p>Operational activities will be conducted to ensure that natural surface drainage patterns are maintained.</p>
Watersheds/Hydro Assessments Comments
<p>The block is located in the Tulameen River watershed, which is not listed as a Fisheries Sensitive Waterhed.</p>
Sensitive Areas Comments
<p>N/A</p>
Recreation Comments
<p>RLA0W (<0.1ha) and the access road is within the Sutter Creek (REC 1659) recreational site polygon. Falling, yarding and loading activies are well removed from the developed portion of the recreational site. A Recreation Regulation Section 16 was issued on June 7, 2016 and extended in 2020 to conduct industrial operations within the recreational site.</p> <p>A minimum of three days prior to and during operations, post and maintain "Industrial Activity" notice signage at the junction of the access road and Tulameen</p> <p>FSR informing public users of the pending/active industrial activity.</p>
Cultural Heritage Comments
<p>FSP Sec 5.8 Cultural Heritage Resources (CHR): The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and not regulated under the Heritage Conservation Act.</p> <p>BCTS has referred this development to all potentially affected First Nations, as was determined through a search of the Consultative Area Database (CAD). All referral communication and management decisions have been documented in a BCTS Due Diligence Report signed off for approval by the Timber Sales Manager (TSM). This Site Plan is consistent with the management decisions and measures approved by the TSM.</p> <p>A "Modify/Stop Work Procedure" has been included in the harvest plan in the event that previously unidentified Cultural Heritage Resources (CHR's) are encountered during industrial activities on the Site.</p>

Biodiversity Emphasis/L.U. Comments
The block is located in the Tulameen Landscape unit which has a biodiversity emphasis of Intermediate.
Other Resources Comments
There is an active trapping tenure overlapping the block: TR0805T069. There is an active guide tenure overlapping the block: 800755- Colton Wabnegger The block overlaps 3 active mineral claims: 513185, 546428, 503536
ADDITIONAL COMMENTS:

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2021 02 05	YES

THE FOLLOWING INFORMATION IS ATTACHED FOR INFORMATION ONLY AND DOES NOT FORM PART OF THE SITE PLAN

HARVEST PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
TA1349	-	RLA0W	BEA0W			Sutter Creek	49 26 11 / 121 01 34

SILVICULTURE SYSTEMS

SU	SYSTEM	VARIANT	PHASE	RESERVE	Min BA (m2/ha)	Min Residual Density (sph)
1,2	CCRES		REMOV	D		
Current Stand Structure/Site Conditions			<p>The plan is consistent with the approved BCTS Merritt TSA Forest Stewardship Plan. Block RLA0W is situated in the ESSF mw1 biogeoclimatic zone. The block includes two Standard Units (SU1 and SU2) that are comprised of 06 (90%) and 01 (10%) site series.</p> <p>Stand volume consists of Sx 67%, BI 20%, Hw 1%, Cw 1% and PI 11%. Net merchantable volume is 530m3/ha. The total damage including insect and blowdown is approximate 4.7%.</p>			
Silviculture Systems SU Comments			<p>SU-1: SU-1: The block will be harvested using a CCRES silviculture system. Slopes greater than 35% exist in the ground based harvest portion of the block. Procedures for ground based harvesting on steeper slopes should be followed.</p> <p>Prolonged snow cover throughout late Fall to Spring (Nov - May).</p> <p>SU-2: SU-2: The block will be harvested using CCRES silviculture system. Slopes greater than 35% exist in the ground based harvest portion of the block. Procedures for ground based harvesting on steeper slopes should be followed.</p> <p>Prolonged snow cover throughout late Fall to Spring (Nov - May).</p>			
Min. Characteristics of Leave Trees (Form, Health, Vigour)			<p>Target Leave Trees:</p> <p>Reserve Fdi, Pw, and Cw (95% greater than or equal to 17.5cm) where operationally feasible to enhance structural diversity for wildlife habitat values, and as a supplemental source of seed and shelter for regeneration. No Fd, Pw or Cw was observed on site but may be present at low densities.</p> <p>Reserve Live Pa (100% all diameter classes). No Pa was observed on site but may be present at low densities.</p> <p>Although not identified in the block, reserve 95% of Act, At and Ep where operationally feasible. Any stems required to be felled for safety or access will be left on site as coarse woody debris.</p> <p>Within the RMZ of RLA0W-(1 to 3)-S6b: Reserve Live Fd,Cw,Hw and Pw (95% greater than or equal to 17.5 cm), if encountered. Reserve Live Sx (95% greater than equal to 17.5cm and less than equal to 32.4cm) Reserve Live BI (95% greater than equal to 17.5cm and less than equal to 37.4cm)</p> <p>The estimated leave tree ranges are for operational guidance and consider field observations, statistical error in the cruise data, and the amount of the NAR required to be clear-cut for required access (skidding, roads, and processing), silviculture and safety. Final in-block retention is intended to meet the percent retention stated by species. Actual leave trees may vary upward or downward from estimated ranges.</p> <p>The distribution of the leave trees is not expected to be even throughout the block as there are >1ha areas that may not have any of these species.</p> <p>Exceptional circumstances: With the exception of Whitebark Pine (Pa) target leave trees can be felled and left on site when necessary for incidental falling, blowdown removal, or safety/operational reasons.</p> <p>Create 1-2 stubs per hectare across the block primarily within the RMA of streams and within 5m of NCDs, where operationally feasible. Other preferred locations are adjacent to retained immature clumps to provide protection during harvesting. Preference should be given to dead or damaged stems of larger diameter. These stubs may provide a source of habitat for cavity nesting species or perches for raptors.</p> <p>Where operationally feasible, leave understorey trees (poles having >50% live crown, saplings, and regeneration). The preference is for understorey leave trees to be free from insects, disease and defects and be left in groups of 3 or more where possible.</p>			

Additional Comments

<p>Harvesting Constraints</p>	<p>ARCHAEOLOGY & CULTURAL HERITAGE</p> <p>BCTS has referred this development to all potentially affected First Nations, as was determined through a search of the Consultative Area Database (CAD). All referral communication and management decisions have been documented in a BCTS Due Diligence Report signed off for approval by the Timber Sales Manager (TSM).</p> <p>A "Modify/Stop Work Procedure" has been included in the harvest plan in the event that previously unidentified Cultural Heritage Resources (CHR's) are encountered during industrial activities on the Site.</p> <p>This Site Plan is consistent with the management decisions and measures approved by the TSM.</p> <p>MIGRATORY BIRDS</p> <p>If a previously unidentified migratory bird species or its nest is encountered during harvesting, road construction, or a silviculture activity associated with this Site Plan, the Timber Sales Manager (TSM), will require that the operations cease to the extent necessary to protect the Affected migratory bird species or nest until alternative BMP's can be implemented to minimize or prevent the risk of incidental take.</p> <p>SLOPES</p> <p>Slopes range from 11 to 69% (avg. 30.8%) and approx. 61% of the block contains slopes >25%. Slopes > 35% do exist within the block. Written safe steep slopes procedures are required and licensees are to adhere to section 26.16 or the OHS regulation.</p> <p>MOUNTAIN BEAVER:</p> <p>Mountain beaver dens have been identified within and adjacent to RLA0W and are shown in approximate locations on the attached map(s) as wildlife features. Streams and NCD's have been protected with MFZ ribbon. All skid crossings must be visually inspected for mountain beaver dens prior to construction and moved where operationally feasible.</p> <p>During forestry operations if unmarked mountain beaver dens are, the Timber Sales Manager, will require that the operations cease to the extent necessary to protect the den with Machine Zone Flagging.</p> <p>RECREATION:</p> <p>Block RLA0W is located within a significant recreation area for seasonal activities such as but not limited to snowmobiling, camping, hunting or fishing etc... Ensure all forestry operations are conducted in a manner to ensure public safety. Block RLA0W is also adjacent to active recreation sites/polygons and there may be nails in trees within the vicinity of the recreation site.</p> <p>A minimum of three days prior to and during operations, post and maintain "Industrial Activity" notice signage at the junction of the access road and Tulameen FSR informing public users of the pending/active industrial activity.</p>
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SOIL ASSESSMENT

SU	HAZARD RATINGS			SOIL DISTURBANCE				SOIL CHARACTERISTICS			
	Soil Comp.	Soil Erosion	Soil Disp.	Max Allow Soil Dist %	Max Allow Max Amount TAS may exceed MASD prior	Max Allow Perm Access Structures %	MASD for Roadside work areas %	Depth to Unfavorable Subsoil		Type of Unfavorable Subsoil	Sediment Delivery Risk (Comm. Watershed)
								Min (cm)	Max (cm)		
1	M	H	L	10.0	5.0	7.0	25.0			None Noted	
2	M	H	L	10.0	5.0					None Noted	
SU	Critical site conditions that affect the timing of operations and how they affect the timing										
1	Due to moderate soil compaction throughout this block, ground based operations should occur during non-saturated soil conditions or on frozen or snow-covered soils. Use a random skidding pattern and avoid skidding across depressions/low lying areas when wet. The proposed harvest area contains predominantly Rank 4 (Moderately High) and small areas of Rank 1 (Very Low) polygons (BCTS Migratory Bird Strategy) and has a timing restriction recommendation on operations from April 16 to August 8.										
2	Due to moderate soil compaction throughout this block, ground based operations should occur during non-saturated soil conditions or on frozen or snow-covered soils. Use a random skidding pattern and avoid skidding across depressions/low lying areas when wet. The proposed harvest area contains predominantly Rank 4 (Moderately High) and small areas of Rank 1 (Very Low) polygons (BCTS Migratory Bird Strategy) and has a timing restriction recommendation on operations from April 16 to August 8.										
SU MANAGEMENT COMMENTS											
SU	SU Description										
1	Standard Unit 1 represents the conventional logging net area to be reforested in block RLA0W and occurs in ESSF mw1 biogeoclimatic zone, subzone, and variant. The site is 90% 06 and 10% 06 site series.										
2	Standard Unit 2 represents the cable/tethered logging net area to be reforested in block RLA0W and occurs in ESSF mw1 biogeoclimatic zone, subzone, and variant. The site is 90% 06 and 10% 06 site series.										

SOIL MANAGEMENT COMMENTS
Soil Conservation
<p>Soils within RLA0W are primarily Silty loam with a moderate compaction hazard, a high erosion hazard, and a low displacement hazard.</p> <p>Permanant Access Structures (PAS) associated with Block RLA0W include a proposed road (ME R23250.02) and 1 designated landing.</p> <p>Total PAS = 1.1 ha or 3.9% of the Total Area Under the Plan (TAUP = 28.3ha).</p> <p>This does not exceed the 7% allowable PAS as defined in FPPR S.36.</p>
Temporary Access
<p>Temporary access accounts for 1.6ha or 7.1% of the NAR.</p> <p>ME RLA0W.01, ME RLA0W.02, landings and all bladed trails are to be rehabilitated post harvest as follows: return displaced surface soils, retrievable side-cast and berm materials to the extent practicable and necessary to establish and grow trees consistent with the stocking standards.</p> <p>Dispersed temporary access structures constructed in this block must be rehabilitated prior to regen delay for the block. Natural drainage must be maintained on all temporary access structures during use and post-harvest. If rehabilitation is not completed immediately after harvest completion, all temporary access structures are to be deactivated to the appropriate level that will ensure natural drainage is maintained while not creating a condition of instability or sedimentation to riparian features.</p> <p>Harvesting is to be conducted in a manner that will ensure the maximum soil disturbance limits (10%) are not exceeded and that natural drainage patterns are maintained.</p> <p>The Licensee will monitor site conditions to ensure soil disturbance remains within the limits prescribed above</p>
Slope Instability
<p>A terrain assessment was completed by Statlu Environmental in 2016. The assessment noted two areas of high hazard terrain adjacent to the block and provided a recommendation to operations within the merchantable area.</p> <p>1. A rotational slump is ~20m beyond the block boundary east of Stn. 21. The approximate location is noted on the attached maps. The boundary was moved ~20m during layout to decrease the hazard within the merchantable area to low. No further site specific management required.</p> <p>2. A raveling slope that is being undercut by Sutter Cr is located adjacent to the block boundary east of Stn 10. A 7m wide machine free zone was placed around the break in slope above the raveling slope to avoid loading the slope during harvesting or post harvest activities.</p> <p>3. The merchantable area has a low terrain stability hazard and it is unlikely that landslides would initiate. The block has gentle over steep terrain above Sutter Creek so mass wasting could occur as a result of drainage diversion or concentration from gently sloping terrain to steeper terrain, similar to the sideslopes between Sutter Creek and the block boundary. Such landslides can be prevented by maintaining existing drainage patterns and avoiding diverting or concentrating drainage.</p>

RIPARIAN ASSESSMENTS

Management Strategies

The management strategies for the riparian management zones (RMZ) located within this block are anticipated to conserve at the landscape level, the water quality, wildlife habitat, and biodiversity associated with those riparian areas.

S2's
RLA0W-1-S2 (Sutter Cr): The Riparian Reserve Zone (RRZ) for this stream is beyond the block boundaries. The majority of the RMZ for this stream exists outside of the harvest area and has been retained in a WTRA. Portions of the RMZ that overlaps the harvest area will be managed per SU-1 or SU-2. Bladed skid trails should be avoided in RMZ.

S3's
RLA0W-1-S3: The RRZ for this stream is outside of the block boundaries. The majority of the RMZ for this stream exists outside of the harvest area. RMZ that overlaps the harvest area will be managed per SU-1. Bladed skid trails should be avoided in RMZ.

S4's
RLA0W-1-S4 through RLA0W-3-S4: The streams are located a minimum of 10 meters outside of the block boundary. Areas where the RMZ overlaps the harvest area are to be managed per SU1 and SU2. The retention targets have been achieved.

S6's
RLA0W-1-S6b through RLA0W-5-S6b: A machine free zone (MFZ) has been ribboned adjacent to all S6's within the harvest area. The RMZ for RLA0W-(4 and 5)-S6bs have not been marked in the field as greater than 20% basal area associated with these streams will be retained outside the harvest area.

The RMZs for RLA0W-(1,2, and 3)-S6bs have been established and marked in the field. In order to meet the 20% basal area retention target for these S6's, refer to Leave Tree Characteristics for retention targets. Refer to the attached map for required designated crossings which may be moved for operational feasibility.

RLA0W-1-S6b:
Cross stream yarding is planned across on the stream. Hand falling is required on the western side of the stream. To maintain stream bank stability, timber within the RMZ should be felled over the stream during bunching/handfalling operations such that lower slopes can be yarded over the felled timber to protect stream banks. Operations should occur during late summer or winter when the stream is at low water levels or covered in snow. The stream will be cleaned post-harvest.

RLA0W-3-S6b:
A narrow band of timber exists between the stream and boundary where hand falling is required to fall the trees into lead for skidding.

NCD's
RLA0W-1-NCD through RLA0W-8-NCD: The NCD's identified on the site plan map are protected with machine free zone (MFZ). Where practicable, fall and skid away from NCD. If it is necessary to skid across an NCD, minimize the number of crossings. Ensure natural drainage is maintained for all NCD. Designated crossings are shown on the attached maps but are not flagged in the field and may be moved as required for operability and safety.

Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
RLA0W-2-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The Riparian Management Zone (RMZ) for this streams has been marked in the field. See Leave Tree Characteristics for details of reserve trees.
RLA0W-3-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area. A designated crossing has not been proposed above the road on RLA0W-3-S6. A narrow band of timber exists between the stream and boundary where hand falling is required to fall the trees into lead for skidding.
	RMZ	1	20.0		The Riparian Management Zone (RMZ) for this streams has been marked in the field. See Leave Tree Characteristics for details of reserve trees.
RLA0W-4-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The RMZ has not been marked in the field as greater than 20% basal area associated with the stream will be retained outside the harvest area. See Leave Tree Characteristics for details of reserve trees.
RLA0W-5-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The RMZ has not been marked in the field as greater than 20% basal area associated with the stream will be retained outside the harvest area. See Leave Tree Characteristics for details of reserve trees.
RLA0W-1-S4 S4	RRZ	2	10.0		The stream is located more than 10 meters outside of the harvest area. No additional management required.
	RMZ	2	20.0		The majority of the Riparian Management Zone (RMZ) for the stream is located outside of the harvest area. Areas of the RMZ that are within the harvest area are to be managed per SU-2. The retention targets have been achieved.
RLA0W-2-S4 S4	RRZ	1	10.0		The stream is located more than 10 meters outside of the harvest area.
	RMZ	1	20.0		The Riparian Management Area (RMA) for these streams have NOT been marked in the field. Bladed skid trails should be avoided in RMA. The majority of the RMA with the block is located within WTRA #2. Areas that overlap the harvest area are to managed per SU1. The retention targets have been achieved.
RLA0W-3-S4 S4	RRZ		10.0		The stream is located more than 10 meters outside of the harvest area. No additional management required.
	RMZ		20.0		The Riparian Management Zone (RMZ) for the stream is either located outside of the block, or within WTRA #2. No additional management is required. The retention targets have been achieved.
RLA0W-1-S2 S2	RMZ	1	20.0		The Riparian Management Area (RMA) for Sutter Creek (RLA0W-1-S2) has NOT been marked in the field. Bladed skid trails should be avoided in RMA. See Leave Tree Characteristics for details of reserve trees.
	RRZ	1	30.0		The Riparian Reserve Zone (RRZ) for Sutter creek (RLA0W-1-S2) is beyond the block boundary. No further management required.
RLA0W-1-S3 S3	RRZ	1	20.0		The Riparian Reserve Zone (RRZ) for this stream is located outside of the block boundary.
	RMZ	1	20.0		The Riparian Management Area (RMA) for this stream has NOT been marked in the field. Bladed skid trails should be avoided in RMA. See Leave Tree Characteristics for details of reserve trees.
RLA0W-1-NCD NCD	MFZ	1	5.0		RLA0W-1-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained.
RLA0W-2-NCD NCD	MFZ	1	5.0		RLA0W-2-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. A designated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety.
RLA0W-3-NCD NCD	MFZ	1	5.0		RLA0W-2-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from NCD. If it is necessary to skid across an NCD, minimize the number of crossings. Ensure natural drainage is maintained for all NCD. A d esignated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety.
RLA0W-4-NCD NCD	MFZ	1	5.0		RLA0W-4-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. The NCD is located primarily within the Riparian Management Area of RLA0W-3-S4.
RLA0W-5-NCD NCD	MFZ				RLA0W-5-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. The NCD is partially located within the Riparian Management Area of RLA0W-3-S4.

RLA0W-6-NCD NCD	MFZ	1	5.0		RLA0W-6-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. A designated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety. The NCD is located partially within the Riparian Management Area of RLA0W-2-S6 and RLA0W-3-S6.
RLA0W-7-NCD NCD	MFZ	1	5.0		RLA0W-7-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. If it is necessary to skid across the NCD, minimize the number of crossings. Ensure natural drainage is maintained. A designated crossing is shown on the attached maps but is not flagged in the field and may be moved as required for operability and safety.
RLA0W-8-NCD NCD	MFZ	1	5.0		RLA0W-8-NCD is protected with a 5-meter Machine Free Zone. Where practicable, fall and skid away from the NCD. Ensure natural drainage is maintained.
RLA0W-1-S6b S6	MFZ	1	5.0		The stream has been ribboned with a 5-meter Machine-Free-Zone where it lies within the harvest area.
	RMZ	1	20.0		The Riparian Management Zone (RMZ) for this streams has been marked in the field. See Leave Tree Characteristics for details of reserve trees.

COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION

Current Coarse Woody Debris levels are estimated as moderate. The coarse woody debris left within the block must be consistent with Section 68 of the FPPR: a minimum of 4 logs per hectare, each being a minimum of 2m in length and 7.5cm in diameter at one end. Effort should be made to evenly distribute CWD across the block and to use a variety of species. Reserve trees within the block will contribute to future CWD. Any reserve tree that is windblown, or felled for safety reasons must be left on site unless there is a likelihood for pest attack or infestation. Logs may consist of a variety of species and shall be evenly distributed across the cutblock.

Small Mammal Strategy:

Coarse Woody Debris (CWD) piles and rest logs to be configured as follows: Piles = >3mx5mx2m high with >30% of pieces >20cm diameter and >3m long. Target = 0.5 CWD piles per ha or 11 piles within the net harvest area. Rest logs either hardwood or hollow logs >20cm diameter and >10m in length and elevated 25-50cm above the ground. Target =10 per hectare.

Performance Std. (%) :	100.0	Block Target (%) :	100.0	Coarse Woody Debris (m3/ha):	30.0
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DEFINITIONS

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2021 02 05	YES

Print off the PAS/TAS table located as an attachment on the Block Details Screen and attach to this prescription.

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
ROB CLARK	
DATE SIGNED	
2021/02/05	
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.	

SILVICULTURE PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
TA1349	-	RLA0W	BEA0W			Sutter Creek	49 26 11 / 121 01 34

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	EA	20.91	ESSF	mw		06-90 01-10	1,280	30	S	Middle Slope	50	SIL
2	EB	1.71	ESSF	mw		06-90 01-10	1,252	30	S	Middle Slope	50	SIL

STOCKING REQUIREMENTS				
ASSESSMENT DATES				
Standard Unit	Standards ID	Regen Delay (yrs)	Freegrow Early (yrs)	Freegrow Late (yrs)
1	1011535	4	0	20
2	1011535	4	0	20
Min/Max Elevation Regime: 1215 / 1345				

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	700	Max	4000
						WELL SPACED TREES (sph)			
Se Englemann Spruce	1.0		Pli Lodgepole Pine - Interior	2.0		Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Bl Subalpine Fir	1.0		Ba Amabilis Fir	1.0					
						1200	700	600	2.0
								Height Relative to Competition (%)	
								125	

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	700	Max	4000
						WELL SPACED TREES (sph)			
Se Englemann Spruce	1.0		Pli Lodgepole Pine - Interior	2.0		Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Bl Subalpine Fir	1.0		Ba Amabilis Fir	1.0					
						1200	700	600	2.0
								Height Relative to Competition (%)	
								125	

OTHER REQUIRED STOCKING INFORMATION
The Net Area to be Reforested in Block RLA0W is 22.5ha.
SU-1 (20.7ha) - 100% Se Se (100%) = 1600sph = 33,120 seedlings Density: 1600 stems/ha Season: Summer
SU-2 (1.7ha) - 100% Se Se (100%) = 1600sph = 2,720 seedlings Density: 1600 stems/ha Season: Summer
The selected stocking standard is based on the site series for the ESSF mw biogeoclimatic subzone. Standard Units SU1 and SU2 cover the whole net area to be reforested in the block and is an 06 (90%) and 01(10%) Site Series.
The block should be planted in the summer and monitored thereafter for competing vegetation, in particular around the moisture receiving sites. It is not anticipated that brushing will be required, however, snow press may be an issue. Fill plant as required based on findings from stocking surveys.
Seed zones: Class B: All species =TOD. Class A: Lw-Lw1, Cw=SM, Ba=SM, Ax=SM, Sx=SM, Pw=SM, Fdc=SM

ACTIVITIES

SITE PREPARATION	
22.46	
Mechanical(Excavator) 2023/08/19	
AREA	TECHNIQUE(S) / LIMITING FACTOR

PLANTING						
Planting(Container) 2024/06/19 SEASON:						
AREA	PLANTING UNIT	UNIT AREA²	SPECIES	COMMENTS	STEMS / HA	TOTAL STEMS
22.5	1	20.7	Amabilis Fir		359	7452
			Hybrid Spruce (SE x SW)		1257	26082
			Lodgepole Pine - Interior		180	3726
	2	1.7	Amabilis Fir		358	612
			Hybrid Spruce (SE x SW)		1253	2142
			Lodgepole Pine - Interior		179	306
	LIMITING FACTORS / COMMENTS					

SILVICULTURE ACTIVITY COMMENTS	
ACTIVITY	COMMENT

MANAGEMENT STRATEGY

COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION			
<p>Current Coarse Woody Debris levels are estimated as moderate. The coarse woody debris left within the block must be consistent with Section 68 of the FPPR: a minimum of 4 logs per hectare, each being a minimum of 2m in length and 7.5cm in diameter at one end. Effort should be made to evenly distribute CWD across the block and to use a variety of species. Reserve trees within the block will contribute to future CWD. Any reserve tree that is windblown, or felled for safety reasons must be left on site unless there is a likelihood for pest attack or infestation. Logs may consist of a variety of species and shall be evenly distributed across the cutblock.</p> <p>Small Mammal Strategy:</p> <p>Coarse Woody Debris (CWD) piles and rest logs to be configured as follows: Piles = >3mx5mx2m high with >30% of pieces >20cm diameter and >3m long. Target = 0.5 CWD piles per ha or 11 piles within the net harvest area. Rest logs either hardwood or hollow logs >20cm diameter and >10m in length and elevated 25-50cm above the ground. Target =10 per hectare.</p>			
Performance Std. (%):	100.0	Block Target (%):	100.0
Coarse Woody Debris (m3/ha):			30.0

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2021 02 05	YES

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
ROB CLARK	
DATE SIGNED	
2021/02/05	
<p>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.</p>	