A. PROJECT IDENTIFICATION	
PROJECT ID AND UNIT ID: **K4R/FESBC Wildfire Risk Reduction – Prescription #4** 4.0 km to 5.1 km Keefe's Landing Road Original WRR Shapes #10, 11, 12	LAND OR TENURE HOLDER: Chinook Community Forest Tenure K4R (CFA:K4R)
LATITUDE/LONGITUDE: 53^{O} 53' 58.4" N, 125^{O} 56' 03" W	GEOGRAPHIC DESCRIPTION: Keefe's Landing Road, 4.0 km to 5.1 km
HIGHER-LEVEL PLAN(s): Lakes District Land and Resource Management Plan – 2000 Lakes South Sustainable Resource Management Plan – 2003	MAP REFERENCE NUMBER: 93F 081

B. FUEL TREATMENT PROJECT DESCRIPTION			
OBJECTIVE:	☒ Public Safety	☒ Range Improvement	☒ Ecosystem Restoration
	☐ Recreation	☐ Wildlife Habitat	☐ Other:

Prescription Area #4: Keefe's Landing Road Wildfire Risk Reduction (WRR) area is on the south side of François Lake and is bordered by Crown land. This unit is entirely within the Chinook Community Forest (CFA:K4R) tenure area and has been identified as a high priority corridor by the British Columbia Wildfire Service (BCWS) WRR Tactical Plan.
The unit is within the François Lake Wildland Urban Interface (WUI) Risk Class (RC) polygon which has been assigned a risk class rating of 2 due to the prevalence of High Value Resources and Assets (HVRAs) namely the infrastructure and community values along the Keefe's Landing Road. The Provincial Strategic Threat Analysis (PSTA) has classified stands within the unit as having a Final Threat Rating (FTR) of high (7) to extreme (9). This rating considers the anticipated head fire intensities and spotting impacts for the fuel types present as well as historical fire densities. Initial spread index (ISI) roses generated by the Grassy Plains Hub (161) fire weather station indicate that prevailing winds during the core fire season are typically from the southwest.

The objectives of this Prescription are to:

- reduce the risk of wildfire to public safety by modifying forest fuels within wildland urban interface (WUI) areas – specifically the properties, residences, and infrastructure near the Keefe's Landing Road.
- reduce the risk of wildfire to public safety by modifying fuels adjacent to critical evacuation corridors – specifically those along the Keefe's Landing Road network.
- reduce the risk of wildfire to critical infrastructure and property by modifying forest fuels adjacent to, or likely to influence forest fuels adjacent to, identified values at risk.
- develop ecologically appropriate and effective wildfire risk reduction solutions that give due regard to overlapping land management objectives and tenure obligations.
- develop ecologically appropriate and effective wildfire risk reduction solutions that give due regard to site and stand conditions to maintain forest health and site productivity.
- create defensible space for wildland fire fighters to anchor suppression strategies and tactics from during incident response by removing or modifying hazardous forest fuels in a way that improves firefighter safety and reduces fire behaviour potential.

STRATEGIES:	Wildfire risk reduction objectives will be achieved through the application of treatment regimes designed to address site and stand specific conditions. Treatments will reduce fire behaviour potential through the modification or removal of hazardous forest fuels as well as through reductions to surface fuel load contributions from downed woody material and treatment residues. Stand modifications are intended to reduce fire intensities and reduce continuity between forest fuels, and therefore reduce the potential for the propagation and persistence of crown fire as well as the potential for spotting. Treatment intensities increase with the level of hazard identified as well as in response to anticipated operational limitations. The prescribed treatment activities balance WRR objectives with established land use objectives and existing tenure obligations to reduce the risk of wildfire to public safety, promote natural processes and maintain ecosystem function, as well as to reduce open burning requirements through the utilization of biomass.
METHODS:	The proposed operational treatment for this TU 1 of this Prescription area will be a Clearcut with Reserves (CCRES) Silviculture System and TU 2 will be a Clearcut with Dispersed Retention (CCDRET) Silviculture System as both TU's requires significant stand modification to address the hazardous stand conditions. Stand conditions are poor in these areas due to the impacts of historical insect infestations and subsequent wind events. The prescription area will provide moderate to marginal commercial fibre recovery opportunities. Initial stand entries require an overstory removal phase utilizing conventional ground-based harvest (HARV) methods. Final treatment phases require surface fuel load reductions (SFR) to dead and down material and treatment residues by mechanical surface fuel reductions to existing downed woody materials and treatment residues to ensure surface fuel load targets are achieved. Surface fuel reduction targets are intended to reduce surface fire intensities to a level below critical surface fire intensity thresholds (<2000 kW/m) under 90th percentile fire weather conditions as well as to comply with provincial fuel hazard abatement requirements. Prescription area design and specifications have been developed with consideration of the influence of topography. However, fine adjustments to initial spread indexes (ISI) to account for the influence of slope have not been incorporated into treatment specifications.

C. TREATMENT UNIT (TU) SUMMARY

TU	SU	NET AREA (ha)	GROSS AREA (ha)	LEAVE AREAS (ha)	NP (ha)	NAR (ha)	TREATMENT REGIME (i.e. PRUNE THIN, PILE BURN, BROAD, CHAUL, ETC.)
1	1	3.0	3.0	0	0	3.0	CCRES / HARV / SFR / Mechanical Debris Pile & Burn
2	1	6.9	8.2	1.3	0	6.9	CCDRET / HARV / SFR / Mechanical Debris Pile & Burn
TOTALS		**9.9**	**11.2**	**1.3**	**0**	**9.9**	

D. SITE CHARACTERISTICS

TU	CFFBPS FUEL TYPE	TIMBER TYPE	BGC SUBZONE, VARIANT & SITE ASSOC.	ELEVATION RANGE (m)	SLOPE POSITION	SLOPE RANGE (%)	ASPECT
1	C2	MATURE Coniferous	SBS dk 01	885 – 905	Middle	3 – 7	Southeast
2	C2	MATURE Coniferous	SBS dk 01	885 – 910	Middle	2 – 6	Southeast

FUEL TYPE DETERMINATION	TU1: C2 is the fuel type is used for representing mountain pine beetle (MPB) affected stands. TU 2: C2 is the fuel type used, based upon observed fire behaviour, for mid-elevation interior white spruce and hybrid spruce stands throughout the province.

E. SOIL CHARACTERISTICS							
TU	SOIL TEXTURE	DUFF DEPTH (cm)	COARSE FRAGMENTS (%)	SOIL DISTURBANCE LIMIT (%)	SOIL HARZARD RATING		
					Compaction	Erosion	Displacement
1	SL	3	45 - 55	10	M	M	L
2	SL	3	45 - 55	10	M	M	L

F. VALUES – *FOREST AND RANGE PRACTICES ACT*		
RIPARIAN & LAKESHORE AREAS - Forest Planning and Practices Regulation (FPPR) division 3, Government Action Regulation (GAR) section 6, Forest and Range Practices Act (FRPA) sections 180 and 181		
Is the proposed cutting, modification or removal of trees, or site preparation, in an area that contains streams, lakes or wetlands?	Yes ☒ No ☐	Riparian features that occur within the Chinook Community Forest Agreement (CFA) tenure area have been managed in accordance with section 6.5.2 of the approved Chinook CFA Forest Stewardship Plan (FSP) 2016 and are otherwise compliant with the requirements of section 47 to 51, 52(2), and 53 of the FPPR.

RIPARIAN MANAGEMENT AREAS (RMAs) - FPPR sections 51 and 52				
STREAM, LAKE, WETLAND ID	CLASS	RRZ (m)	RMZ (m)	SPECIFICATIONS FOR RIPAIRAN OR LAKESHORE MANAGEMENT AREAS
Stream #4	NCD	0	0	A 50m section of the NCD is within the boundary of WRR-10.

TEMPERATURE SENSITIVE STREAMS - FPPR section 53, GAR section 15, FRPA sections 180 and 181		
Are there temperature sensitive streams or direct tributaries to temperature sensitive streams within or adjacent to the proposed treatment area?	Yes ☐ No ☒	Treatment activities have not been prescribed in areas that contain, are adjacent to, or are a direct tributary to an identified temperature sensitive stream.
ROAD CONSTRUCTION IN RIPARIAN MANAGEMENT AREAS - FPPR section 50		
Is road construction proposed in riparian management areas within the treatment area or an associated road permit (RP)?	Yes ☐ No ☒	Road construction activities have not been proposed within the RMA of any identified riparian feature.
STREAM CROSSINGS - FPPR section 55		
Will stream crossings be constructed within the proposed treatment area or a road permit road providing access to the treatment area?	Yes ☐ No ☒	There are no riparian crossings associated with this prescription.

MAINTAINING STREAM BANK AND CHANNEL STABILITY ON S4, S5, and S6 STREAMS - FPPR section 52 (2)		
Is the proposed treatment in the RMZ of an S4, S5 or S6 stream that is directly tributary to an S1, S2 or S3 stream and the activity is likely to contribute significantly to the destabilization of the stream bank or the stream channel?	Yes ☐ No ☒	Treatment activities have not been prescribed within the RMZ of an S4, S5, or S6 stream that is a direct tributary to an S1, S2, or S3 stream, and therefore the basal area retention requirements for maintaining stream bank and channel stability provided by section 52 of the FPPR do not apply.
DOMESTIC WATER LICENCES (inside or outside of community watershed) - FPPR section 59		
Does the proposed treatment area contain water sources that are diverted for human consumption by a licensed waterworks?	Yes ☐ No ☒	The treatment area does not include water sources that are diverted for human consumption by a licensed waterworks.
LICENCED WATER WORKS (inside or outside of a community watershed) - FPPR section 60		
Does the proposed treatment include areas that are within 100m of a licensed waterworks?	Yes ☐ No ☒	Treatment and road construction activities have not been proposed within 100 m of a licensed waterworks that is within a community watershed.
FISHERIES SENSITIVE WATERSHED - GAR section 14, FPPR section 8.1		
Are any activities proposed within a fisheries sensitive watershed?	Yes ☐ No ☒	Treatment activities have not been proposed within a fisheries sensitive watershed.
COMMUNITY WATERSHED - GAR section 8, FPPR section 8.2, 61, 62 and 84		
Does the proposed treatment area include areas that are within a community watershed?	Yes ☐ No ☒	Treatment activities have not been proposed within a community watershed.
Will this project require road construction or deactivation within a community watershed?	Yes ☐ No ☒	Treatment and road construction activities have not been proposed within a community watershed.
WATERSHED ASSESSMENT CONSIDERATIONS - FRPA section 180 areas with "significant watershed sensitivity"		
Does the proposed treatment area include areas that have watershed assessment considerations?	Yes ☐ No ☒	Treatment activities have not been proposed in areas identified as having significant watershed sensitivity or other watershed assessment considerations.

SOIL DISTURBANCE AND PERMANENT ACCESS STRUCTURES - FPPR sections 35 and 36

Treatment Unit (TU)	Proposed Max. Allowable Soil Disturbance (5% or 10%)	Proposed Max. Soil Disturbance for Roadside Work Areas	Proposed Max. Permanent Access Structures	Comments
1 / 2	10%	25%	5%	Proposed permanent access structures calculated at 3.0%, and they will be planted once all treatment activities are complete.

Do the proposed Permanent Access Structures exceed 7% of the total area?	Yes ☐ No ☒	Permanent access structures will not exceed 7%.
LANDSLIDES AND TERRAIN STABILITY - FPPR section 37		
Does the proposed treatment area include areas where terrain stability is a concern?	Yes ☐ No ☒	Indicators of slope instability or landslides were not noted within the treatment area.

SUITABLE SECONDARY STRUCTURE - FPPR section 43.1		
Does the proposed treatment area include a "targeted pine leading stand"?	Yes ☐ No ☒	Treatment activities have not been proposed in a "targeted pine leading stand" as defined by section 1 of the FPPR. Additionally, the treatment activities proposed will occur entirely within a community forest agreement (CFA) license for the purpose of wildfire risk reduction and therefore, as per section 43.1(4) and 43.1(2) of the FPPR, the secondary stand structure retention specifications set out by section 43.1(1) of the FPPR do not apply.
UNGULATE WINTER RANGE - GAR section 12, FRPA sections 180 and 181, FPPR section 69		
Does the proposed treatment area include areas within an Ungulate Winter Range?	Yes ☒ No ☐	Treatment activities have been proposed in a Special Resource Management Sub-Zone 4 with identified M2 ungulate winter habitat for Moose for WRR-10, 11 & 12. Prior to the commencement of treatment activities the Agreement Holder will ensure that the habitat requirements for the winter survival of ungulate species specified by s.6.4.2 of the FSP are maintained.
WILDLIFE HABITAT AREA - GAR section 10, FRPA sections 180 and 181, FPPR section 69		
Does the proposed treatment area include any wildlife habitat areas (WHA)?	Yes ☐ No ☒	The treatment area does not overlap any mapped or otherwise identified wildlife habitat areas.
MIGRATORY BIRD CONVENTION ACT – 1994		
Does the proposed treatment have the potential to impact migratory bird habitat?	Yes ☐ No ☒	The nest density ranking for this Prescription area is 2 and therefore is not likely to impact Migratory Bird Habitat.
OBJECTIVES SET BY GOVERNMENT FOR WILDLIFE - FPPR section 7		
Does the proposed treatment area include areas to which objectives for wildlife under FPPR section 7 apply?	Yes ☒ No ☐	A legal order establishing objectives set by government for wildlife has not been enacted in the Lakes district and objectives are not specified in the Lakes LRMP or the Lakes South SRMP. Two notices, enabled under section 7(2) of the FPPR, specifying indicators of the amount, distribution and attributes of wildlife habitat required for the winter survival of ungulate species as well as for the survival of species at risk exist for the Lakes and Nadina districts, respectively.
OBJECTIVES SET BY GOVERNMENT FOR BIODIVERSITY OBJECTIVES (Landscape Level) - FPPR Part 4 Division 5		
Does the proposed treatment area include areas to which objectives for landscape level biodiversity under FPPR section 9 apply?	Yes ☒ No ☐	The design of the proposed Wildfire Risk Reduction areas will resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape.
OBJECTIVES SET BY GOVERNMENT FOR BIODIVERSITY OBJECTIVES (Stand Level) - FPPR Part 4 Division 5		
Are considerations for maintaining stand structure (wildlife trees, wildlife tree reserves, etc.), coarse woody debris, and maintaining tree and vegetation species composition incorporated into this prescription?	Yes ☒ No ☐	Two external Wildlife Tree Patch areas amounting to 1.3ha (11.6%) have been identified with this plan.

RECREATION FEATURES - FRPA section 56 and 149, FPPR section 70		
Does the proposed treatment area contain interpretive sites, recreation trails, recreation sites, recreation facilities that are of significant recreation value and are designated a resource feature?	Yes ☐ No ☒	The treatment area does not contain known interpretive sites, recreation trails, recreation sites, recreation facilities that are considered to be of significant recreation value and are designated a resource feature.
VISUAL QUALITY OBJECTIVES - GAR section 7, FRPA sections 180 and 181, FPPR section 9.2		
Is the proposed treatment within a scenic area?	Yes ☐ No ☒	Proposed WRR blocks are not within a Scenic area nor a VQO – Retention polygon.
ARCHAEOLOGICAL RESOURCES/CULTURAL HERITAGE RESOURCES - FPPR section 10		
Are there any known archaeological sites or cultural heritage resources that are important to First Nations within the proposed area? No Referral to Land Manager is required if proposed TU is on the applicant's own First Nation Land.	Yes ☐ No ☒	The proposed WRR blocks do not overlap with any CHR High Archaeological polygons nor were any archaeological sites or cultural heritage resources (CHR) identified with the proposed treatment areas. In the event that additional CHR features are identified or otherwise made known during First Nation information sharing and consultation, measures to protect the CHR or address First Nation concerns must be communicated by an addendum to, or an amendment of this prescription. In the event that previously unidentified CHR features are encountered while carrying out treatment activities, work in the area must stop, and an authorized treatment supervisor must be notified. The Agreement Holder will complete a cultural heritage resource evaluation (CHR) and provide management direction to protect or otherwise manage for the identified feature(s).
INVASIVE PLANTS - FRPA section 47 and FPPR section 17		
Is the introduction and spread of invasive plants likely as a result of the proposed treatment?	Yes ☒ No ☐	Review of the Invasive Alien Plant Program (IAPP) database indicated the presence of invasive plant species adjacent to the FTU along the Keefe's Landing Road. IAPP sites include Orange Hawkweed (OH), Meadow Buttercup (MB), Oxeye Daisy (OD), Scentless Chamomile (SH), Common Tansy (TC), and Yellow Hawkweed (YH).
NATURAL RANGE BARRIERS - FRPA section 48, FPPR section 18		
Are there natural range barriers within the proposed treatment area that are likely to be removed or rendered ineffective?	Yes ☐ No ☒	Fencelines exist along both sides of Keefe's Landing Road and there is one cattleguard on the Fish Lake FSR (Moose Pit Rd). In the event that fencelines or cattleguards are damaged, they will be repaired to the pre-damaged condition.
SPECIES AT RISK – FPPA section 7		
Are there species at risk present within the boundaries of the prescribed treatment area?	Yes ☐ No ☒	No known occurrences of a species at risk were noted during field assessments or through review of BC Conservation Data Centre spatial data.
LAND USE OBJECTIVES (Higher Level Plans and objectives set by Government under the *Land Act*)		
Are there land use objectives (higher level plans or objectives under the *Land Act*) that apply to the proposed treatment area or a Road Permit necessary to provide access to the treatment area?	Yes ☐ No ☒	Prescribed activities are not expected to conflict with other land use objectives not specifically addressed by this prescription.

LAND USE OBJECTIVES (Higher Level Plans and objectives set by Government under the *Land Act*) Cont'd		
Do the proposed activities conflict with land use objectives (higher level plans or objectives under the *Land Act*)?	Yes ☐ No ☒	Prescribed activities are not expected to conflict with other land use objectives not specifically addressed by this prescription.
Known and potential species at risk, windthrow hazard, and old growth management areas?	Yes ☐ No ☒	Treatment activities have not been proposed in an old growth management area (OGMA) established by the Lakes South SRMP.
Do the proposed activities conflict with Provincial Priority Deferral Areas (PROV. DEF) identified by the Old Growth Strategic Review?	Yes ☒ No ☐	Proposed harvest area WRR-10 overlaps into the newly designated PROV. DEF by 60%. The Agreement Holder has an exemption from the Nadina Resource District to allow for the overlap between the PROV. DEF areas and all Wildfire Risk Reduction proposed areas.

G. OTHER CONSIDERATIONS AND REQUIREMENTS

CONSULTATION – FIRST NATIONS: Info-share was initiated on April 22, 2022 and Adequacy Letter is called: 10455-50/22 K4R WRR IS1 and is dated July 04, 2022

FIRST NATION	CONCERNS IDENTIFIED AND MEASURES TO ADDRESS
Nee Tahi Buhn Band	No concerns brought forward.
Skin Tyee Nation	No concerns brought forward.
Stellat'en First Nation	No concerns brought forward.
Wet'suwet'en First Nation	No concerns brought forward.
Office of the Wet'sewet'en	No concerns brought forward.
First Nations consultation complete?	Yes ☒ No ☐

CONSULTATION – GENERAL, EXISTING TENURE HOLDERS (Forest, Range, Guide Outfitters, Trappers): Info-share was initiated for existing Tenure Holders on April 22, 2022.

Tenure Holder	Concerns?	Measures proposed to address licensee's concerns
Range: George Amendt	Yes ☐ No ☒	No concerns brought forward.
Range: Carl Doglione	Yes ☐ No ☒	No concerns brought forward.
Range: Sharon Robertson	Yes ☐ No ☒	No concerns brought forward.
Range: Ootsa Lake Cattle Company	Yes ☐ No ☒	No concerns brought forward.
Range: Victor Bateson	Yes ☐ No ☒	No concerns brought forward.
Range: Jonathan Solecki	Yes ☐ No ☒	No concerns brought forward.
Range: Jack Burt	Yes ☐ No ☒	No concerns brought forward.
Range: Clint Lambert	Yes ☐ No ☒	No concerns brought forward.
Range: Elizabeth McEntire	Yes ☐ No ☒	No concerns brought forward.
Range: Harold Moroski	Yes ☐ No ☒	No concerns brought forward.
Trapline: TR0604T014	Yes ☐ No ☒	No concerns brought forward.
Trapline: TR0604T017	Yes ☐ No ☒	No concerns brought forward.
Trapline: TR0604T018	Yes ☐ No ☒	No concerns brought forward.
Trapline: TR0604T019	Yes ☐ No ☒	No concerns brought forward.
Trapline: TR0604T020	Yes ☐ No ☒	No concerns brought forward.
Guide Outfitter: James Lancaster	Yes ☐ No ☒	No concerns brought forward.
Guide Outfitter: Brett Hall	Yes ☐ No ☒	No concerns brought forward.
Guide Outfitter: Gary Blackwell	Yes ☐ No ☒	No concerns brought forward.

PRIVATE PROPERTY		
Does private property border the proposed treatment area?	Yes ☐ No ☒	There is no private land immediately adjacent to any of these proposed WRR shapes.
SMOKE MANAGEMENT		
Does a smoke management plan beyond OBSCR exist for the proposed treatment area?	Yes ☐ No ☒	The treatment area is within a Medium Smoke Sensitivity Zone and therefore the *August 2021 Community Wildfire Risk Reduction Open Burning Smoke Control Regulations* will be followed for the burning of debris piles.
SAFETY		
Have any specific safety concerns been identified in or adjacent to the proposed treatment area?	Yes ☒ No ☐	The level of blowdown within these proposed treatment areas are very high. Cattle within this range tenure area are no longer able to use portions of this area as they are completely impassable.
UTILITIES		
Are utilities located in or adjacent to the proposed treatment area? i.e. power lines, gas lines, etc.	Yes ☒ No ☐	All four of the proposed shapes within this Prescription area are adjacent to Utility Lines.
ACCESS CONTROL		
Are there any foreseen issues with access and access control during and post treatment?	Yes ☐ No ☒	There are no foreseen access issues for access to any of the proposed Wildfire Risk Reduction shapes in this Prescription.
TRAFFIC CONTROL		
Is traffic control required at any point during operations?	Yes ☐ No ☒	There is no need for traffic control on these shapes because timber will be felled into the blocks, and there is a minimum of a tree length previously cleared between the blocks and the Keefe's Landing Road.
OTHER (E.g Public Notification)		
Notification of commencement of harvesting activities should be posted on Chinook Community Forest's Facebook Page.		

H. STAND AND STOCK TABLE

Is merchantable timber cutting prescribed? If yes, please provide details below.

☒ Yes ☐ No

About 73.8% percent of the treatment unit contains merchantable timber. The intent of this project is to recover as much fibre as possible from these proposed areas. The appropriate tenure authorization method will be applied for once timber purchase agreements have been arranged.

Are there any challenges to utilizing merchantable material? If yes, please provide details below.

☒ Yes ☐ No

There is extensive blowdown, dead standing and ladder fuels throughout the Prescription area. Much of the volume that is down on the ground and overlapping has be dead and down for many years now. The hope is that the merchantable stems can be separated out efficiently and effectively from the stems that cannot to aid in a seamless flow of merchantable timber from the Prescription area. The plan would then be for the non-merch material to also potentially be shipped to a biomass facility, or potentially that a grinding unit would arrive on site to process the debris. Alternatively, debris may be left on site for a small period of time so that community members may come and load the material for firewood.

TREATMENT SPECIFICATIONS SUMMARY	
TU 1	**TREE REMOVAL/RETENTION STRATEGY BY SIZE/SPECIES** (Summarize specifications identified in table above)
1	***Silviculture Systems:*** Clearcut with Reserve (CCRES) ***Treatment Regimes:*** Conventional Harvest or Forwarder (HARV), Hazard Tree Removal (HTR), Surface Fuel Reduction (SFR), Mechanical Pile (MPILE) and potential for Burning (PILE BURN)
2	***Silviculture Systems:*** Clearcut with Dispersed Retention (CCDRET) ***Treatment Regimes:*** Conventional or Forwarder Harvest (HARV), Hazard Tree Removal (HTR), Surface Fuel Reduction (SFR), Mechanical Pile (MPILE) and potential for Burning (PILE BURN)

TU 1 - TREATMENT SPECIFICATION RATIONALE

Treatment activities will utilize a Clearcut with Reserve silviculture system which primarily requires the use of mechanical treatment methods. Initial treatment phases will remove remnant hazardous overstory fuels consisting of 73.1 m3/ha hybrid spruce and lodgepole pine – approximately 51.6% of this volume is dead potential lodgepole pine. Secondary treatment phases will require surface fuel reductions to the specified targets by means of mainly mechanical methods, (with the potential for manual treatment methods). Final treatment phases will require surface fuel reductions to the specified targets by means of manual/mechanical piling. Treatment activities are expected to transition stands from a C-2 fuel type (Boreal Spruce *with MPB affected stands) to a C-6 (Conifer Plantation) and reduce surface fire intensities significantly.

To reduce predicted fire behaviour the following treatment specifications have been applied:

- Retain all live deciduous trees except where their removal is necessary to address a safety concern.
- Remove all live and dead overstory and understory coniferous trees unless the tree is to be retained to achieve biodiversity objectives or the tree has been identified as a wildlife habitat or cultural heritage feature.
- Reduce <7.0 cm surface fuel loads to 0.5 kg/m^2 (+/- 0.25 kg/m^2).
- Reduce >7.0 cm surface fuel loads to 2.5 kg/m2 (+/- 0.5 kg/m2).

TU 2 - TREATMENT SPECIFICATION RATIONALE

Treatment activities will utilize a clearcut with Dispersed Retention silviculture system to be carried out using primarily mechanical treatment methods. Initial treatment phases will remove dead or otherwise hazardous overstory trees. The removal of live overstory and understory trees will reduce continuity between fuel strata and accommodate the recovery of treatment fibre and residues. Secondary treatment phases will mechanically (and potential manual methods), thin understory trees to reduce vertical and horizontal continuity to overstory retention. Final treatment phases will require surface fuel reductions to the specified targets by means of manual/mechanical piling. Treatment activities are expected to transition stands from a C-2 fuel type (Boreal Spruce *with MPB affected stands) to a C-6 (Conifer Plantation) and reduce surface fire intensities significantly.

To reduce predicted fire behaviour the following treatment specifications apply:

- Remove all dead overstory and understory trees except where the tree is to be retained to achieve biodiversity objectives or the tree has been identified as a wildlife habitat or cultural heritage feature.
- Retain all live deciduous trees except where their removal is necessary to address a safety concern.
- Retain 200 sph (±100 sph) of live L1 coniferous trees.
- Retain up to 100 sph (±50 sph) of live L2 coniferous trees.
- Recruitment between L1 and L2 conifers stocking is acceptable to a maximum total target conifer stocking of 450 sph (±100 sph).
- Thinning from below to a height of 4.5 m is only required on residual coniferous trees where contiguous crown ratio of >50% coverage exists.
- Substitution of deciduous stems (where they exist) for coniferous stocking is acceptable.
- Remove all L3 and L4 understory trees, (where they exist).
- Reduce <7.0 cm surface fuel loads to 0.5 kg/m^2 (+/- 0.25 kg/m^2).
- Reduce >7.0 cm surface fuel loads to 2.5 kg/m2 (+/- 0.5 kg/m2).

TU 1: STAND AND STOCK TABLE DATA

Species and Diameter Class[1]	Crown Base Height Range (m)	Average Tree Height (m)	STEMS PER HECTARE (sph)			VOLUME PER HECTARE (m^3/ha)[2]			Basal Area (m^2)
			Existing	Cut	Leave	Existing	Cut	Leave	Existing
Layer 1 (≥ 22.5 cm - 27.5 cm dbh)									
Pl	-	-	0	0	0	0	0	0	0
Sx	3.6	24	43	43	0	21.7	21.7	0	2.1
Total Dead Potential			0	0	0	0	0	0	0
Total Live			43	43	0	21.7	21.7	0	2.1
Total All Species		24	43	43	0	21.7	21.7	0	2.1
Total Conifers		24	43	43	0	21.7	21.7	0	2.1
Layer 1 (≥ 17.5cm - 22.5 cm dbh)									
Pl	-	20	199	199	0	38.4	38.4	0	7.3
Sx	3.4	20	196	196	0	47.0	47.0	0	6.4
Total Dead Potential			199	199	0	38.4	38.4	0	7.3
Total Live			196	196	0	47.0	47.0	0	6.4
Total All Species		20	395	395	0	85.4	85.4	0	13.7
Total Conifers		20	395	395	0	85.4	85.4	0	13.7
Layer 1 (≥ 12.5 cm - 17.5 cm dbh)									
Pl	-	16	573	573	0	34.7	34.7	0	9.8
Total Dead Potential			573	573	0	34.7	34.7	0	9.8
Total Live			0	0	0	0	0	0	0
Total All Species		16	573	573	0	34.7	34.7	0	9.8
Total Conifers		16	573	573	0	34.7	34.7	0	9.8
TOTALS: Layer 1									
Total Layer 1 - All Species (Conifers Only	**3.5**	**20**	**1,011**	**1,011**	**0**	**141.8**	**141.8**	**0**	**25.6**

TU 1: SURFACE FUEL LOADING (kg/m^2)

Size Class (cm)	Existing (kg/m^2)	Existing Distribution	Target (kg/m^2)	Target Distribution	Method-ology Used
Fine Woody Debris (</=7cm)	1.0	Moderately continuous distribution with accumulations associated with suspended and jackpotted lodgepole pine.	0.5 kg/m^2 (+/- 0.25 kg/m2)	Reduce to target levels with an acceptable range of ±0.25 kg/m2. Maintain poor continuity between residual pieces and avoid creating aggregations.	Line Intersect Sampling Method
Large Diameter Woody Debris (>7cm – 20cm)	3.93	Continuous distribution of lodgepole pine damaged by mountain pine beetle as well as some hybrid spruce damaged by wind. Pieces typically have a decay class of 2.	2.5 kg/m^2 (+/- 0.5 kg/m2)	Reduce below target levels with an acceptable range of ±0.5 kg/m2. Ensure poor continuity between retained pieces and avoid creating aggregations.	
Coarse Woody Debris (CWD) (>20cm)	5.04				
Crown Closure (%): 22		**Existing Total:** 9.96 kg/m^2		**Target:** 3.0 kg/m2 (+/- 0.75 kg/m2)	

[1] Modify diameter classes as required to suite treatment.

[2] A professional estimate is required for any merchantable cutting

TU 2: STAND AND STOCK TABLE DATA									
Species and Diameter Class[3]	Crown Base Height Range (m)	Average Tree Height (m)	STEMS PER HECTARE (sph)			VOLUME PER HECTARE (m^3/ha)[4]			Basal Area (m^2)
			Existing	Cut	**Leave**	Existing	Cut	**Leave**	Existing
Layer 1 (≥ 12.5 cm dbh)									
Pl	-	18	772	772	0	73.1	73.1	0	17.1
Sx	3.5	22	239	39	200	68.7	11.2	57.5	8.5
Total Dead Potential			772	772	0	73.1	73.1	0	17.1
Total Live			239	39	200	68.7	11.2	57.5	8.5
Total All Species		20	1,011	811	200	141.8	84.3	57.5	25.6
Total Conifers		20	1,011	811	**200**	141.8	84.3	**57.5**	25.6
Layer 2 (≥ 7.5cm - 12.5 cm dbh)									
Sx	1.3	7.1	72	0	72	1.4	0	1.4	4.2
Total Dead Potential			0	0	0	0	0	0	0
Total Live			72	0	72	1.4	0	1.4	4.2
Total All Species		7.1	72	0	72	1.4	0	1.4	4.2
Total Conifers		7.1	72	0	**72**	1.4	0	1.4	4.2
Layer 3 (≥1.3 m ht. - 7.5 cm)									
Sx	0.5	4.5	270	270	0	-	-	-	-
Total Dead Potential			0	0	0	-	-	-	-
Total Live			270	270	0	-	-	-	-
Total All Species		4.5	270	270	0	-	-	-	-
Total Conifers		4.5	270	270	0	-	-	-	-
Layer 4 (< 1.3 m height)									
Sx	0.1	0.4	220	220	0	-	-	-	-
Total All Species		0.4	220	220	0	-	-	-	-
Total Conifers		0.4	220	220	0	-	-	-	-

TU 2: SURFACE FUEL LOADING (kg/m^2)					
Size Class (cm)	Existing (kg/m^2)	Existing Distribution	Target (kg/m^2)	Target Distribution	Method-ology Used
Fine Woody Debris (</=7cm)	0.90	Moderately continuous distribution with accumulations associated with suspended and jackpotted lodgepole pine.	0.5 kg/m^2 (+/- 0.25 kg/m2)	Reduce to target levels with an acceptable range of ±0.25 kg/m2. Maintain poor continuity between residual pieces and avoid creating aggregations.	Line Intersect Sampling Method
Large Diameter Woody Debris (>7cm – 20cm)	4.89	Moderately continuous distribution of lodgepole pine damaged by mountain pine beetle as well as some hybrid spruce damaged by wind. Pieces typically have a decay class of 2.	2.5 kg/m^2 (+/- 0.5 kg/m2)	Reduce below target levels with an acceptable range of ±0.5 kg/m2. Ensure poor continuity between retained pieces and avoid creating aggregations.	
Coarse Woody Debris (CWD) (>20cm)	1.82				
Crown Closure (%): 24		**Existing Total:** 5.79 kg/m^2		**Target:** 3.0 kg/m2 (+/- 0.75 kg/m2)	

[3] Modify diameter classes as required to suite treatment.

[4] A professional estimate is required for any merchantable cutting

BIODIVERSITY AND FOREST HEALTH CONSIDERATIONS AND TARGETS	
COARSE WOODY DEBRIS (CWD) RETENTION TARGET – Distribution	Using the May 2022 Chief Forester's Guidance on Coarse Woody Debris Management on Wildfire Mitigation Treatments, the recommendation is to leave 5 CWD pieces per hectare in the SBS dk.
WILDLIFE TREE RETENTION TARGET	Retain up to 10 sph of large diameter (>30 cm dbh) dead potential stems as wildlife snags. Retain one (1) patch (20 x 20 m) of suitable secondary stand structure per hectare for wildlife habitat. Retention patches must be allocated so as to maintain discontinuity to adjacent stands, be anchored around deciduous and dead potential tree retention where practicable, and contain 400-600 sph of healthy poles and/or saplings (where they exist) with good form and vigour. Retain three (3) to five (5) high stumps (>1.0 m) per hectare adjacent to retention patches to ensure they do not incur damage as a result of skidding/yarding activities.
FOREST HEALTH- Should include sections such as agent, affected species, incidence rating, mortality, and targets	Stands have been assessed to be in poor condition due to the impacts of forest health factors. Lodgepole pine overstory trees exhibited high mortality (51.6%) as a result of historical mountain pine beetle infestation. Significant wind damage (39%) has occurred where dead lodgepole pine have succumb to wind and snow loads and have transitioned to the forest floor. Additionally, windthrow contributions from residual stand components are anticipated to increase as stand condition continues to decline and stand density decreases. Evidence of emerging mountain pine beetle infestation was not noted. WINDTHROW RISK EVALUATION Windthrow assessments indicate the proposed treatment activities will result in a moderate potential for future windthrow risk due to topographic location due to prevailing wind directions. Wind damage is common in stands that have been impacted insect occurrences mainly from historical mountain pine beetle infestations.

I. TREATMENT DESCRIPTION
MERCHANTABLE TIMBER CUTTING
ROADS, LANDINGS AND TRAILS: Access to the units will be gained via Keefe's Landing Road and existing Spur Roads and FSR's adjacent to the block. Proposed access associated with the treatment areas will include two (2) road permit sections and three (3) on-block spur roads. One road permit section will commence off the Fish Lake FSR to access WRR-11 and one that will come off an old existing block road at approximately 4.0km on the Keefe's Landing Road. **All additional access structures required to accommodate the prescribed treatment activities, or otherwise necessitated by site conditions or to address a safety concern, must be approved by an authorized treatment supervisor.**
FELLING: Felling activities will employ mechanical falling equipment (i.e. feller-bunchers, harvesters). If or where any hand felling activities are used, they must be carried out by Fallers certified to the BC Faller Training Standard (BCFTS) with the skills and experience to achieve the treatment specifications without damaging residual stand components.
YARDING/SKIDDING: Conventional ground-based primary transport equipment (i.e. rubber-tired skidders, forwarders, etc.) will be utilized to carry out skidding/yarding activities. If rubber-tired skidders are utilized, retain high stumps (<1.0 m in height) adjacent to retained trees to prevent retention from incurring damage as a result of yarding and skidding activities.
LOADING AND HAULING: Loading activities will be carried out within the right of way of proposed access structures and any required landings. Hauling activities will be carried out using an appropriate logging truck configuration for the harvest systems employed and processing facility requirements.

SLASH DISPOSAL:

Treatment residues and existing downed woody material in excess of prescribed >7.0 cm targets will be brought to road right of ways to facilitate biomass utilization where practicable. Material should be marketed to local processing facilities where a biomass fibre recovery opportunity exists. Where a biomass recovery opportunity does not exist alternative markets/users should be explored, or the material should be piled and burned on site.

The quantity and distribution of biomass resulting from initial mechanical treatment phases will vary with the harvest systems used. Roadside processing may improve biomass recovery opportunities relative to processing at the stump, especially where selection systems have been proposed. Processing at the stump, while improving other objectives, will result in increased dispersed fuel loads and increase the requirement for fire hazard abatement activities.

STRATEGIES TO IMPROVE BIOMASS UTILIZATION:

- Aggregate treatment residues, unutilized dead and down material, and bucking waste within utilization requirements for biomass facilities within road right of ways.
- Avoid incorporating mineral soil and other contaminants into piles.

STAND MODIFICATION TREATMENTS

BRUSHING: Manual brushing treatments have not been prescribed.

PRUNING: Pruning treatments have not been prescribed.

THINNING: Thinning from below to a height of 4.5 m is only required on residual coniferous trees where contiguous crown ratio of >50% coverage exists.

DEBRIS PILING:

Un-utilized biomass – including treatment residues and residual downed woody material – in excess of prescribed surface fuel load reduction targets outside of right of ways will be aggregated into debris piles. Debris piles must be a minimum of ½ the height of the pile's base width with taller piles being preferred. Surface fuels with a decay class of 4 or 5 do not contribute to surface fuel load calculations and may be retained on site.

STRATEGIES FOR DEBRIS PILING:

- Carry out debris piling activities in snow free conditions.
- Construct piles in locations that prevent retention from incurring heat damage and crown scorching during pile burning activities (i.e. within natural openings).
- Ensure piles contain a mix of material sizes and decay classes to facilitate effective ignition and complete combustion.
- Avoid incorporating mineral soil and other non-combustible debris into piles.

PILE BURNING:

Burning activities must be carried out in compliance with the Wildfire Act and its Regulation as well as the Environmental Management Act (EMA); namely the Open Burning and Smoke Control Regulation (OBSCR).

The treatment area is within a Medium Smoke Sensitivity Zone (SSZ) as indicated by Smoke Sensitivity Zone map #38 – Nechako River (93F). All open burning activities within the Keefe's Landing WRR area are subject to the requirements of section 9, 10, 11, 13, 14, and 15 of OBSCR. However, the FTU falls under a plan for community wildfire risk reduction – the Nadina South Side Wildfire Risk Reduction Tactical Plan – and therefore may be carried out in accordance with section 23 of OBSCR where open burning activities are anticipated to last less than one (1) day, or under the conditions outlined in an approval issued under section 15 of the EMA.

No Private residences or business buildings have been identified <150 m of the treatment area

If pile burning activities will be carried out in a manner that meets the definition of a Category 3 Open Fire, as defined by the Wildfire Regulation, a Burn Registration Number (BRN) will be required. A BRN can be obtained from BCWS by calling 1-888-797-1717 or emailing hpr.1800@gov.bc.ca.

STRATEGIES FOR PILE BURNING:

- Ensure all piled debris is dry and seasoned as per the definition provided by the OBSCR.
- Obtain custom venting forecasts to identify optimal burning opportunities.
- Consider the utilization of an Air Curtain Burner.

MULCHING: Mulching treatments have not been prescribed.

MASTICATION: Mastication treatments have not been prescribed.

GRINDING:

In the event that debris can sold to a biomass facility, it is likely that a grinding unit will come directly to the site to prepare the debris into the exact specifications to be shipped via a chip transport truck. If this phase is planned to occur, ensure that road access is maintained to all debris piles locations.

PRESCRIBED FIRE: Prescribe Fire treatments have not been prescribed.

PLANTING:
Fire Management Stocking Standards are not provided in the Agreement Holders current approved FSP and therefore an amendment to the Chinook CFA FSP 2016 stocking standards is being proposed. It is recommended that the Wildfire Risk Reduction stocking standard be requested for all Chinook CFA Wildfire Risk Reduction project areas as these standards are in line with the *BCWS Fuel Management Prescription Guidance 2022*.

OTHER: N/A

AUTHORIZATION AND TIMBER TENURE

FRPA Section 52(1)(b):
The Agreement Holder (CFA:K4R) maintains the timber rights for all merchantable timber harvested as a result of treatment implementation unless relinquished by the CFA holder and authorized by FPRA Section 52 (1) (b).

Forestry License to Cut (FLTC): Not anticipated.

Park Use Permit: N/A

Road Permit or Road Use Permit: Two new Sections for R21201 will be applied for with this Prescription area.

Other (i.e. local government, utilities, etc.): N/A

J. POST TREATMENT

EXPECTED VEGETATION RESPONSE:
Treatment activities are anticipated to result in a moderate vegetative response. Increases to shrub and herbaceous cover and the ingress of various grasses is expected throughout the treatment areas. The establishment of coniferous regeneration is expected to be variable, although site disturbance associated with treatment activities has the potential to promote root suckering where trembling aspen stand components exist.

ADDITIONAL TREATMENTS OR MAINTENANCE:
Where clearcut systems have been employed, carry out stand monitoring at an interval that aligns with the required silvicultural assessments. The results of silviculture assessments will inform the mid to long term requirement for maintenance.

SILVICULTURE OBLIGATIONS: Do silvicultural obligations apply to the treatment area? Yes ☒ No ☐

PLANTING: Is planting a treatment identified in this prescription or required as a legislative obligation? Yes ☒ No ☐
In SU 1 (both TU 1 and TU 2) an even-aged stocking standard has been applied as is shown in the table below.

STOCKING STANDARDS:
APPLICABLE EVEN-AGED STOCKING STANDARDS for all variations of Clearcut Silviculture Systems:

TU	SU	Stocking Standard ID	Species (Pref.)	Species (Accep.)	Well-Spaced Stem/ha				Minimum Height (m)			Regen Delay	Free Growing (years)
					TSS	MSS		MITD	PI	Others	RTH (%)		
						Pref. & Acc.	Pref.						
1 / 2	1	TBD	PLI SX FDI LW AT EP AC	-	1200	700	600	2.0	2.0	1.0	-	4	20

K. Outstanding Works
1.) Obtain the appropriate authorizations for the FRPA Section 52(1)(b) and for the new sections required to R21201 road permit.
2.) Obtain District Manager approval for the proposed alternative stocking standards, or upon the approval of the Chinook CFA:K4R FSP adopt the applicable fire management stocking standards if appropriate.
3.) If required, obtain the appropriate approval(s) – under section 15 of the EMA – to exempt pile burning activities from the requirements of sections 9, 10, 11, 13, 14 and 15 and Part 3 of OBSCR.
4.) Obtain the appropriate authorizations or exemptions for those portions of the treatment area that are within a Priority Deferral Area identified by the Old Growth Strategic Review and the Old Growth Technical Advisory Panel.

L. ADMINISTRATION	
PREPARATION	
FOREST PROFESSIONAL NAME *(Printed):* Jennifer Hill, RPF	FOREST PROFESSIONAL SIGNATURE: 
MEMBER NUMBER: 3889	DATE: 2023-02-02

M. ATTACHMENTS			
MAPS:	Yes ☒ No ☐	FIELD DATA CARDS:	Yes ☒ No ☐
WUI WTA Plots and Photos:	Yes ☒ No ☐	CRUISE DATA:	Yes ☒ No ☐
AIR PHOTOS/IMAGERY:	Yes ☒ No ☐	BURN PLAN:	Yes ☐ No ☒
MODELING/DATA ANALYSIS:	Yes ☐ No ☐	OTHER: Migratory Bird Nest Ranking Spreadsheet OTHER: WTA Worksheets	Yes ☒ No ☐ Yes ☒ No ☐
SURFACE FUEL LOADING DATA:	Yes ☒ No ☐		
TERRAIN STABILITY ASSESSMENT Completed By: Date:	Yes ☐ No ☒	VISUAL IMPACT ASSESSMENT Completed By: Date:	Yes ☐ No ☒
ARCHAEOLOGY IMPACT ASSESSMENT Yes ☐ No ☒ Completed By: Date:		BIOLOGIST ASSESSMENT Yes ☐ No ☒ Completed By: Date:	
ADDITIONAL COMMENTS: MAPS: The following maps have been provided to support the prescribed activities: • Prescription Map • Ortho Treatment Map • Location Map			