Nakusp WUI Fuel Management–Rational and Objectives:

The Village of Nakusp - and its associated WUI – is primarily classified as having a moderate to high risk of wildfire. This rating is shared both by the recently updated "RDCK Area K and Nakusp 2018 CWPP", and by the BCWS Risk Class mapping. The proposed treatment units have been identified in the 2018 CWPP and are intended to create a series of strategically placed units surrounding the community - acting as a last line of defence against an approaching wildfire. Treating these areas will provide opportunities for fire suppression near town, reduce fire intensity and rate of spread, and complement ongoing FireSmart initiatives. Proposed fuel management activities have been supported by the BCWS Prevention Officer, and FLNRORD Integrated Investment Specialist. Details on the proposed activities have been included in the Forest Enhancement Society Information Management System electronic application (Proposal ID: WR0000541). The following supplemental information is intended to provide additional, site specific details.

- **Planning Unit 1 – North Nakusp:** (41.7 ha) This unit is located north of town along Highway 23. Generally, the predominant wind and associated fire spread patterns throughout the Arrow Lakes run from north to south - through the valley. Units located north of values should be a high priority for treatment (2018 Area K and Nakusp CWPP). The main objectives of this treatment are a) to reduce the threat of ignition and spread adjacent to values (Nakusp and Shoreholme) and b) to improve suppression opportunities along the Highway. This unit is anchored into Highway 23 and Arrow Lake, making it an ideal starting point for a series of strategic fuel treatments north of Nakusp. There is also an increased risk of human caused ignitions in this area associated with the public access at the north end of the unit.

- **Planning Unit 13 – Nakusp Creek:** (1.8 ha) This unit is located south of Nakusp near the Nakusp Creek, and along Highway 6. This unit is also located north of the community of Crescent Bay. Generally, the predominant wind and associated fire spread patterns throughout the Arrow Lakes run from north to south - through the valley. Units located north of values should be a high priority for treatment (2018 Area K and Nakusp CWPP). The main objectives of this treatment are a) to reduce the threat of ignition and spread to adjacent values (Nakusp and Crescent Bay) and b) to improve suppression opportunities near Highway 6. This unit is anchored into Highway 6 and Arrow Lake and can provide a starting point for a series of strategic fuel treatments south of Nakusp. There is also an increased risk of human caused ignitions in this area associated with the public access and potential rouge camping in the unit.

- **Planning Unit 6 –Box Lake/Lower Brouse:** (157.5 ha) This unit is located southeast of Nakusp near the community of Lower Brouse and the Box Lake Rec Site. NACFOR would like to develop a prescription for this large area with the intention of treating sites over several years. The main objectives of treatments on this site would be to a) to reduce the threat of ignition and fire spread to adjacent values (Brouse /Nakusp). This unit is anchored into Box Lake and which may provide a starting point for a series of strategic fuel treatments south east of Nakusp.

Outcomes/Measures: Outcomes and measures will be clearly defined during prescription development. Generally, the outcomes would be improved fire suppression opportunities and a reduction in the potential of crown fire initiation, rate of spread, and fire intensity by:

- Reducing surface fuel loading
- Increasing height to live crown ratio (prune stems to 1/3 height, or 3m – whichever is less)
- Decreasing stand density and removing dead and dying stems
- Semi-permanent deactivation of access roads will ensure that drainage structures will be retained for stand maintenance, and future fire suppression access – improving fire suppression opportunities along the highway.

Post-treatment assessments (WTA plots) will be conducted to quantify the wildfire threat reduction achieved through the fuel management treatment.

Landscape Level Wildfire Planning –Rational and Objectives:

The 2018 CWPP for RDCK Area K and Nakusp provides recommendations for fuel treatment within the WUI. Implementation of the CWPP will create a series of strategically placed units surrounding the community - acting as a last line of defence against an approaching wildfire. It is acknowledged that fuel management within the WUI plays a critical role in developing fire resilient communities; however it is also important to recognize the value of landscape level planning to mitigate wildfire risk at a larger scale. The unprecedented wildfire seasons of 2017 and 2018, combined with climate change and the vast areas of fuel loading throughout the province, it is clear that the threat of wildfire is not limited to the WUI. Today, fires are burning more intense and covering larger areas than before. A holistic approach towards wildfire mitigation will address fuel hazard beyond the WUI. A comprehensive landscape level wildfire plan will evaluate wildfire risk and identify strategic areas for fuel treatment in order to reduce fire intensity and rate of spread, and create defendable spaces for fire suppression crews to action a fire before it enters the WUI.

NACFOR recognizes that conducting a landscape level wildfire plan is a large undertaking. At this time, NACFOR would like to initiate this process by conducting pre-planning and to develop a work plan. NACFOR would like to investigate, evaluate, and determine the best practices and methodology to develop a landscape level wildfire plan. Methodologies used in landscape level planning should appropriately evaluate wildfire risk and identify strategic areas for fuel treatment. Possible methodologies NACFOR will investigate include fuel hazard assessments, spatial data analysis, satellite imagery, and fire behaviour modeling. NACFOR intends conduct initial planning, consult with experts and other agencies, and to develop a work plan. This work plan will set project goals and objectives, define risk assessment methods to be used, identify potential partners, and estimate project costs and timelines. The work plan would be used to guide the development of a comprehensive landscape level wildfire plan in the near future. Developing a landscape level wildfire plan is supported – and was recommended- by the FLNRORD Strategic Investment Specialist.

Fuel Management Planning Unit Field Assessment Summary:

The following information is from the RDCK Area K and Village of Nakusp 2018 CWPP – which is currently pending final approval. Field Assessments were completed for all proposed units during the CWPP Development. Field assessment summaries (below) and Wildfire Threat Assessments (uploaded to the FES Information Management System Proposal ID: WR0000541) have been provided for additional, site specific details.

Planning Unit 1 (North Nakusp)

Represented by Plots 1 and 2.
Area: 41.7 ha
BEC Variant: ICHmw2
Predicted Treatment: Hand and mechanical combination; possible commercial harvest
Residual Fibre Plan: Mulch/chip and spread on site, firewood made available on landing
Access: Adjacent to Highway 23
Field Fuel Assessment Rating: Plot 1, 61 Points = Moderate & Plot 2, 75 Points = High
Suitability for Operational Treatment

- Planning Viability: High
- Operational Viability: High
- Usefulness of Treatment: Moderate-High
- Priority for Treatment: Moderate

Description of Proposed Treatment
No area based forest tenure is allocated to the majority of this piece of Crown Provincial owned land - located mainly within Kootenay District Lot 863. A small portion in the north is located within Interfor's TFL (23). The south end of the potential treatment area is an unofficial recreation area, locally known as the "Car Wash." Previously harvested areas within this unit are mainly associated with the original location of Highway 23. As such, regeneration in logged areas was never managed, allowing it to become extremely dense and overgrown over the last fifty years. These areas pose the greatest wildfire threat but the fire threat to the community would be further diminished with an operational treatment to the entire unit. A partially maintained walking trail through the southern half of the unit is evidence of some recreational use.

A combination of hand and mechanical treatment is likely to be most appropriate for this area. Most of the area is highly operable for mechanized equipment although some steeper portions and sections featuring significant amounts of large blast rock will require stratification for hand treatment. Some degree of crown separation would be appropriate within the older immature Kootenay mix that dominates most of the area.

Planning Unit 13 (Nakusp Creek)

Represented by Plot 46
Area: 1.8 ha
BEC Variant: ICHmw2
Predicted Treatment: Shaded Fuel Break; possible hand and mechanical combination
Residual Fibre Plan: Mulch/chip and spread on site, firewood made available on landing
Access: Adjacent to Highway 6
Field Fuel Assessment Rating: 65 pts = moderate
Suitability for Operational Treatment

- Planning Viability: Moderate
- Operational Viability: Moderate-High
- Usefulness of Treatment: Moderate-High
- Priority for Treatment: Moderate-High

Description of Proposed Treatment
This crown owned area is controlled by the Ministry of Transportation and Infrastructure. The Unit lies between Hwy 6 South and Arrow Lake, towards the south edge of the municipal boundary. The area was assessed as part of the 2011 Nakusp fuel management package but did not yet have official MOTI approval at time of submission and was therefore not included in the final package. The area features a patchwork of different age classes and species mixes. Previously harvested areas feature dense regeneration and would benefit from fuel management treatment.

Planning Unit 6 (Box Lake / Lower Brouse)

Represented by Plots 8, 9 and 10
Area: 157.5 ha
BEC Variant: ICHmw2
Predicted Treatment: hand treatment (lower); commercial harvest (upper).
Field Fuel Assessment Rating: Plots 8 & 9: 58 Pts = Mod. Plot 10: 63 Pts = Mod.
Suitability for Operational Treatment

- Planning Viability: Moderate
- Operational Viability: Moderate
- Usefulness of Treatment: Moderate
- Priority for Treatment: Moderate

Description of Proposed Treatments
Ownership and management of this unit is controlled by several different entities. The lower section bordering the lake in the northeast corner is part of the Box Lake Recreation Area. Interfor holds a Forest Licence (A20192) within the Arrow TSA and operates around Nakusp. The southern portion of the unit is Crown land with forest management and cutting rights tenured to NACFOR.

No harvesting has taken place in this unit for over forty years; any logging done prior to this was single tree removal. Therefore, the included area in addition to the area further upslope to the south forms a large, continuous swath of mature timber. Despite this, the wildfire risk within this unit is believed to be lower than many of the other units within the potential fuel treatment band proposed around Nakusp and area. The area is primarily north facing, making it less susceptible to drying caused by increasingly extreme summer temperatures and drought. There are also relatively few residences adjacent to the treatment area, with a number of those residences already well protected by large, open tracts of farmland between the forest and their home. Residences on the upper part of Kangaroo Trail bordering the west edge of Planning Unit 6 would benefit most from fuel treatments in this area.

The northeastern portion of the unit, located within the Box Lake Recreation Area, should be designated for hand treatment. In addition to being located within the rec area, there are a number of streams in close proximity to each other, one of them featuring a licensed point of diversion. Ladder fuels are abundant in this area, due largely to past high-grading. Hand treatments would focus on the removal of these and the reduction of ground fuels.

At present, although treatment of the western edge of Unit 6 would provide the highest reduction in fuel threat to area residences, potential fuel treatments will be limited by government amenability to allowing harvesting within this area. Hand treatments will be expensive as the ground is relatively steep. Such treatments would also be largely ineffective because the primary wildfire risk is posed by the continuous wall of mature, overstorey timber and the consequent threat of crown fire. Addition of this area to the NACFOR chart area would allow NACFOR to address the fuel threat with appropriate harvesting treatments and to feasibly access the fuel threat posed higher up by additional timber within its existing chart area.