

Primary Shaded Fuel Break on the Williams Lake Community Forest

Community wildfire protection is an emerging area of practise for forest professionals and getting started can be a daunting task. Implementation presents a new set of operational challenges to achieve new objectives. To add some pressure — we learn as we go; literally in sight of our communities.

The Williams Lake Community Forest has been asked by Cariboo Resource Region and BC Wildfire Service to pilot the development of a primary shaded fuel break on the windward side of the City of Williams Lake (Figure 1). When completed, this primary fuel break will be 300 metres wide and 9.3 kilometres long within the Community Forest and will occupy about 280 hectares.

Primary fuel breaks are designed to reduce the risk of a crown fire reaching the community by modifying fire behaviour and improving fire suppression capability. Fuel reduction across the width of the fuel break is sufficient to bring a fire to the ground and reduce fire intensity and spread rates.¹ Eventually, the primary fuel break will encircle the City of Williams Lake and adjacent communities, and protect important infrastructure.

Community safety is not the only value occupying the primary fuel break. Mule deer habitat, grazing, bike trails, and front-country recreation are

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FIGURE 1:
Flat Rock Block of Williams Lake Community Forest, where thinning and fuel reduction are creating a primary fuel break (in red) for the City of Williams Lake.

Map credit: Google Earth image showing data from the draft Williams Lake and area community wildfire protection plan.



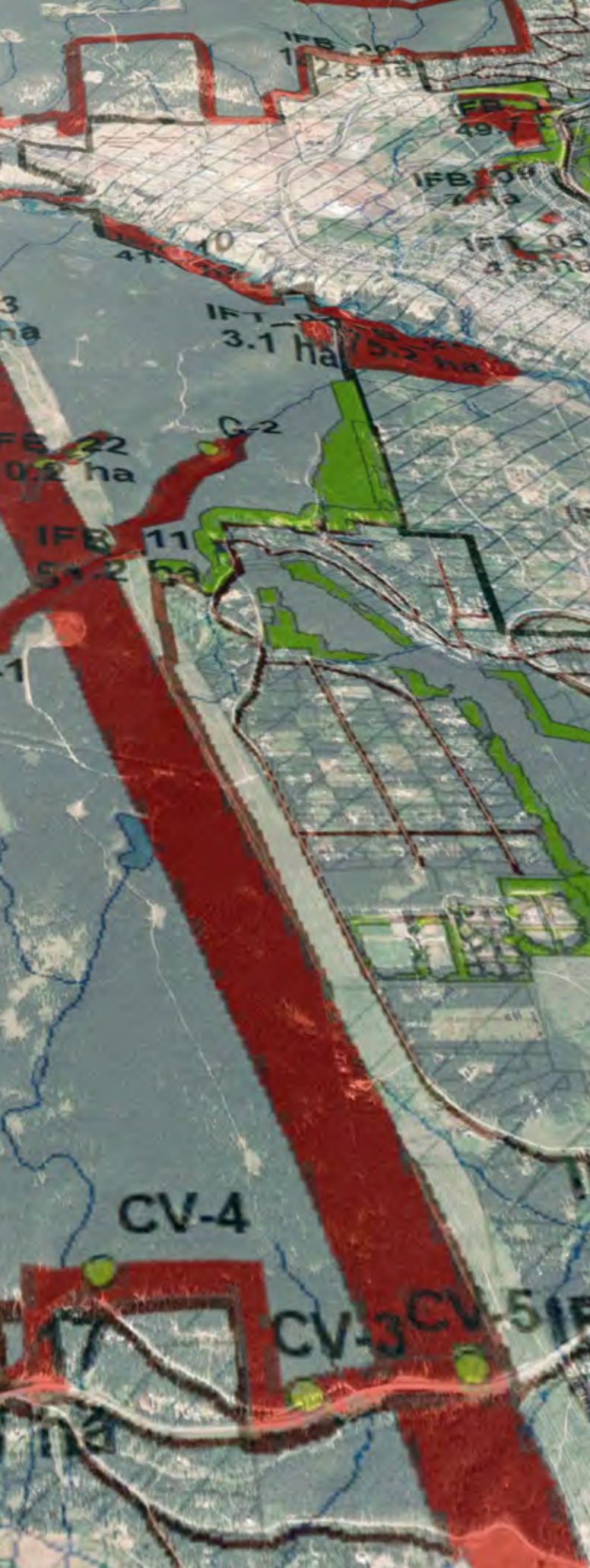
FIGURE 2: Understory reduction with hand piling and burning.



FIGURE 3: Forwarder with a turn of logs to roadside.



FIGURE 4: Biomass at roadside waiting for the grinder.



also important values. The treatment area also contributes timber for the market, visual quality for the community, and a forested environment for adjacent neighbours. Prescription-setting and operations are obviously complex, and we seek to optimize the outcomes: we have stated publicly that we want to make everyone 80 per cent happy.

The Forest Enhancement Society of BC (FESBC) is an important partner in this project, helping to implement treatments that comply with the mule deer winter range GAR order², reduce canopy bulk density, increase canopy base height, and reduce surface fuels.

In areas within 50 metres of the hydro distribution line or immediately adjacent to private property, hand work was done by ground crews using brush saws and power saws with the residue being piled and burned. Conifer understory trees were removed and trees pruned up to three metres above the ground.

Where stands are accessible and trees are merchantable size, the community forest thins the stand as a commercial logging operation, abiding by the direction to retain overstory for mule deer habitat. We then undertake the fuel reduction work under FESBC funding as part of a single project. A clear separation of the two activities is important for the accounting of FESBC funding. Various methods of timber harvesting and fuel reduction have been used to explore the most effective and efficient means of creating the primary fuel break.

A single-grip harvester/forwarder system was used to thin the overstory, cut and pile the understory, and forward logs and biomass to roadside for grinding and trucking to customers. This system proved to be very good at thinning the overstory and removing various log and biomass sorts, however the remaining slash load was heavy in areas of dense conifer understory and the process of sorting debris was costly.

On another block, a low-tail-swing feller buncher was used in conjunction with a forwarder, with all log and biomass material being forwarded together to landings where it was processed into sawlogs, OSB (pulp) and biomass sorts. In some cases the longer trees had to be cut into two pieces in order to fit on the forwarder. After the primary harvesting, the remaining biomass was piled using a mini excavator and forwarded to a landing. This minimized additional hand work and mulcher work necessary to meet acceptable levels of surface fuels. That biomass and the processing debris was ground and delivered to local biomass facilities.

Community safety is now a value on our landscape, and we need to learn to integrate it with all the other values in place. We have the tools and knowledge, but we are lacking practise and experience in achieving these additional objectives. Thoughtful operational trials, at a scale and pace where mistakes are not fatal, are helping us to devise tactics that will optimize our outcomes. Integrating new objectives around fire behaviour and threat reduction into our already complicated objective-sets is a challenge, but do we have a choice? We have more to learn, but we already see that these treatments are improving community safety while maintaining mule deer winter habitat, improving grazing, and maintaining recreational experiences. ✪

REFERENCES

1. B.A. Blackwell & Assoc. 2016. Fuel treatment opportunities for Williams Lake, Rodeo Drive, 140 Mile House, Spokin Lake and Pioneer Crescent on Likely Highway. Contract Report, BC Wildfire Service.
2. Amended Order # U-5-002 – Ungulate Winter Ranges Cariboo Chilcotin Land Use Plan, Shallow and Moderate Snowpack. http://www.env.gov.bc.ca/wld/documents/wha/Amendment_ShallowModerate_Feb07_Ord.pdf