


Appropriate Levels of Wildfire Threat Reduction for Rural Communities in Southeast BC

**Association of Kootenay-Boundary Local Governments
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“...it is now apparent that what has worked in the past will not be enough for the future, given the escalating conditions. It is clear that the dangers presented by wildfire are increasing with more wildfire starts, increased investment across the landscape, and prolonged climate shifts. Status quo is not an option (2011 Flat Top Complex Post-Wildfire Review).”

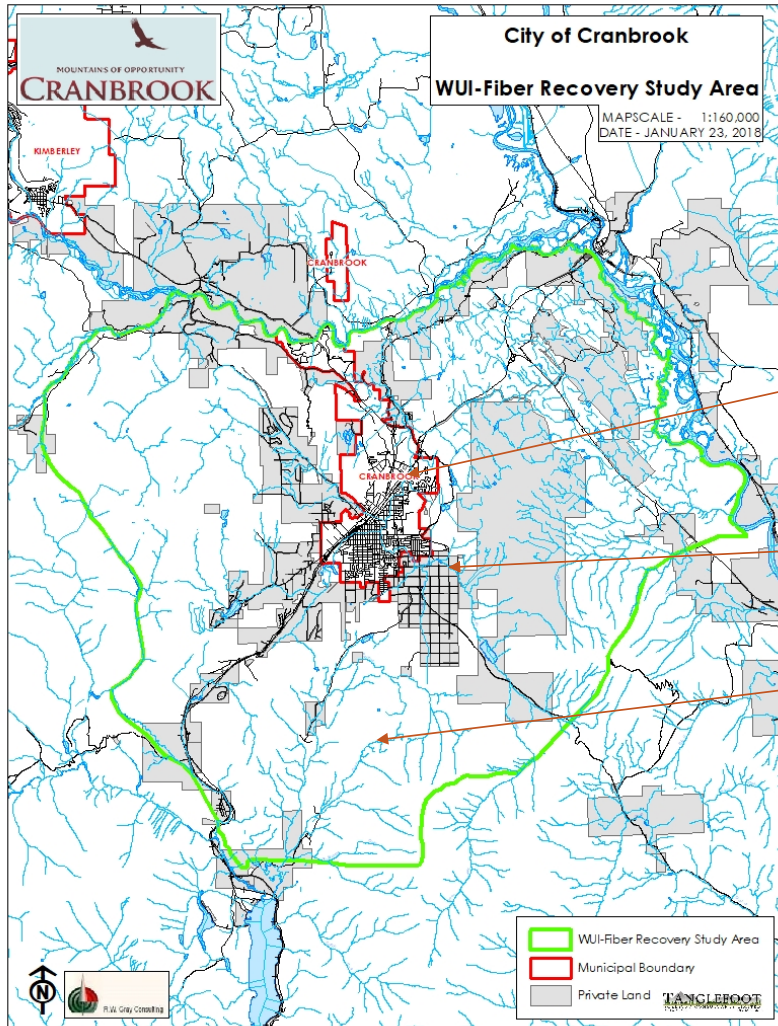
Experts Have Been Recommending a Landscape-Scale Approach for Several Years

- ◇ **Avoid partitioning the landscape into segregated units for treatment,**
- ◇ **Treat hazardous fuels across the landscape regardless of stand-level economics (1998 Alberta Fire Review)**
- ◇ **Treat at the appropriate scale – “immediately surrounding communities and the landscape within 10 km of communities (Alberta 2004-2005 Annual Review)”**
- ◇ **Restore and maintain resilient landscapes, create fire-adapted communities, and, respond aggressively and collaboratively to wildfires (US National Cohesive Wildland Fire Management Strategy)**

“a cost-avoidance business case approach should be taken to quantify the estimated future savings from prevention and preparedness investments (2016 KPMG Wood Buffalo Wildfire – Post Incident Assessment Report).”

Current cost estimate for the Horse River Wildfire (Fort McMurray Fire) is \$9.8 billion....so how much upfront investment in prevention would be needed for the average small, rural community in southeast BC?

What would a landscape-scale hazard reduction plan around Cranbrook cost and what are the potential economic consequences of not treating at this scale



Analysis Area

Statistics:

- ◆ Urban land within the municipal boundary (green lawns, sidewalks, paved roads, etc.) = 1,700 ha's
- ◆ Intermix (private land on acreages) = 13,000 ha's
- ◆ Crown Forest = 33,268 ha's

Crown Land Treatments

Area:

- ◇ Immature stands = 3,651 ha's
- ◇ Hardwood stands = 82 ha's
- ◇ Moist forest = 1,247 ha's
- ◇ Dry forest = 28,383 ha's

Treatments:

- ◇ Immature stands – reduce stocking via slash/pile/burn and older stands slash/pile/burn and underburn
 - ◇ Estimated cost: \$7 million (\$1,900/ha)
- ◇ Hardwood stands are not treated
- ◇ Moist forests – clearcut, slash burned and planted to lower stocking
- ◇ Dry forests – thinned to resilience standards, underburned and not replanted



Economics of Treatment: Volumes, Revenues and Costs

- ◇ Merchantable volume: 2.8 million m³
- ◇ Biomass volume: 3.4 million m³
- ◇ Sawtimber value: \$182 million
- ◇ Pulp value: \$27 million
- ◇ Stumpage revenue: \$90 million
- ◇ Net revenue after harvest: \$25 million
- ◇ Biomass treatment cost (biomass currently does not generate any revenue): \$5.6 million
- ◇ Hazardous fuel treatment cost: \$40 million
- ◇ Net loss after fuel treatments (immature and mature forests combined): \$28 million (\$846/ha)



Economic Consequences

- ◇ Opportunity cost associated with not experiencing a catastrophic wildfire:
 - ◇ Predicted cost of a wildfire – expressed as the cost of an evacuation
 - ◇ Cost of mitigating a wildfire through harvest and fuel treatment

Category	1 day	3 days
Grocery	\$720,000	\$22,160,000
Hospitality	\$210,000	\$630,000
Industrial	\$2,100,000	\$6,300,000
Transportation	\$2,400,000	\$7,200,000
Productivity loss	\$1,906,216	\$5,718,648
Household evacuation	\$5,838,216	\$9,196,392
Total	\$13,174,432	\$51,205,040

Social Consequences

Household Income Range (\$)	% of Households in Cranbrook	% of household income spent for a 1 day evacuation	% of household income spent for a 3 day evacuation
<10,000	4	7	14
10,000 – 19,999	13	5	10
20,000 – 29,999	13	3	6
30,000 – 39,999	12	2	4
40,000 – 49,999	12	2	3
50,000 – 59,999	7	1	3
60,000 – 69,999	7	1	2
70,000 – 79,999	6	1	2
80,000 – 89,999	6	1	2
90,000 – 99,999	4	1	2
>100,000	16	1	1

Summary

- ◆ Initial \$28 million cost to carry out fuel treatments is less than half the economic impact of a three day evacuation.
- ◆ Economic figures are a single point in time and are subject to change; however, the trends are worth considering,
- ◆ Several options to cover financial losses:
 - ◆ A minor increase in biomass feedstock purchase price,
 - ◆ Reduction in stumpage – steered back into fuels treatments,
 - ◆ Fuels treatment subsidies through grant programs such as SWPI or FESBC.
- ◆ Additional analysis should look at employment generated due to increased industrial activity (all local jobs that feed revenues back into the local economy).