

Community Wildfire Resiliency Plan



Village of Kaslo

February 18, 2024

Submitted by:

Submitted to:

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ACKNOWLEDGEMENTS

The authors would like to thank the following for their direct involvement with planning, reviewing, and contributing to the Village of Kaslo's Community Wildfire Resiliency Plan (CWRP):

- Douglas Yee (former Village of Kaslo Fire Chief)
- Daniel Klein (BC Wildfire Service)
- Jessie Lay (Village of Kaslo Wildfire Mitigation Specialist)
- Catherine Allaway (Village of Kaslo Corporate Officer)

These individuals invested substantial time in meetings, answering questions, and reviewing and commenting on the contents of this Plan. While this list is incomplete, the authors would also like to thank the members of the Kaslo FireSmart Committee.

This report would not be possible without the Community Resiliency Investment Program and funding from the Union of British Columbia Municipalities.

EXECUTIVE SUMMARY

In June 2023, B.A Blackwell & Associates Ltd. was retained by Cathro Consulting to jointly develop a new Community Wildfire Resiliency Plan (CWRP) for the Village of Kaslo (Kaslo). A CWRP is both a localized risk assessment and an action plan to improve wildfire resiliency within the municipality's Wildland-Urban Interface (WUI). This plan replaces the previous Community Wildfire Protection Plan (CWPP) completed for Kaslo and Regional District of Central Kootenay (RDCK) Electoral Area D in 2016, accounting for changes that have occurred in the last seven years and taking advantage of the newest community wildfire planning framework in BC. The CWRP is founded on the application of the seven FireSmart™ disciplines (Education, Legislation and Planning, Development Considerations, Interagency Cooperation, Cross-training, Emergency Planning, and Vegetation Management).

Kaslo has made whole or partial progress on many of the 2016 CWPP recommendations (nine recommendations were determined as not relevant/achievable by Kaslo), including prescribing and completing fuel treatment units, engaging the community through education events and programs, completing FireSmart assessments of both homes and critical infrastructure, supporting FireSmart training, incorporating FireSmart into development planning, hiring a FireSmart coordinator, and developing and continuing the Kaslo FireSmart Committee. As Kaslo shares borders with RDCK Electoral Area D, and RDCK manages Emergency Planning and the Kaslo Volunteer Fire Department (Kaslo VFD), community wildfire resiliency is strongly tied between the two Local Governments. Maintaining meetings of the Kaslo FireSmart Committee will be essential to implementing this Plan and achieving effective wildfire risk reduction throughout Kaslo's WUI.

Kaslo is in a provincially defined Wildland Urban Interface polygon that has a Risk Class of "1", which reflects the highest wildfire risk rating. The Provincial Strategic Threat Analysis assigns a "High" or "Extreme" threat rating to much of the surrounding area. Fieldwork for this CWRP allowed for verified and updated fuel types and wildfire threat assessments to be combined with a desktop-based analysis to provide a local wildfire risk assessment for Kaslo. The local analysis determined that, for the assessable area, the conifer-dominated forested areas on both the north and south sides of Kaslo's WUI pose the most significant wildfire threat to the community, dominated by both High and Extreme wildfire threat rating polygons. Overall, 36% of Kaslo's assessable WUI land has a High or Extreme wildfire threat rating – landscapes or stands with continuous forested or grassland fuels that will support candling, intermittent crown fires, or continuous crown fires. The analysis cannot be performed on private land, which covers approximately 28% of Kaslo's WUI. This highlights the need to implement risk mitigation programs on private land if community resilience is to be achieved. Conditions on private land can often result in the fire hazard being much higher than in the forest adjacent if there is low compliance with FireSmart principles – which is an issue that was frequently observed through field work. It is important to recognize that in WUI fires, wildland fuels (trees, shrubs, branches, etc.) are not the only fuel available to the fire – houses and their exterior construction materials and landscaping vegetation, cars, barbeque propane tanks, and more (anything that is flammable or combustible) is available fuel.

It has been found that during extreme wildfire events, most home destruction has been a result of low-intensity surface fire flame exposures, usually ignited by flying embers (firebrands). Firebrands can be

transported long distances ahead of the wildfire, across fire guards and fuel breaks, and accumulate in densities that can exceed 600 embers per square meter. Combustible materials found on the exterior of and surrounding homes (the FireSmart Home Ignition Zone) combine to provide fire pathways allowing spot surface fires ignited by embers to spread and carry flames or smoldering fire into contact with structures.

Because ignitability of structures and landscaping vegetation is the main factor driving structure loss, the intensity and rate of spread of wildland fires beyond the community has not been found to necessarily correspond to loss potential. For example, FireSmart homes with low ignitability may survive high-intensity fires, whereas highly ignitable homes may be destroyed during lower intensity surface fire events. Increasing ignition resistance would reduce the number of homes simultaneously on fire; extreme wildfire conditions do not necessarily result in WUI fire disasters.¹ It is for this reason that the key to reducing WUI fire structure loss is to reduce structure ignitability. Mitigation responsibility must be centered on structure owners, supported by Local Government.

Kaslo can be considered mostly an interface community – the homes and structures are largely situated adjacent to vegetated/forested landscapes surrounding. Wildfire poses a threat to the community from either a human or lightning ignition in the adjacent forests, but also from a residential fire that then spreads into surrounding vegetation and landscaping. Located on the west shore of the north arm of Kootenay Lake, Kaslo is a relatively static community with limited recent subdivisions and population growth. 35% of the population is over the age of 65. Because of the amount of private land within Kaslo's WUI, the observed low adherence to FireSmart residential vegetation management and exterior building materials, and the significant amount of municipal land that has had completed fuel management work completed (and is also under prescription with plans for treatment), there is an emphasis on FireSmart education and FireSmart residential risk reduction policies made within this Plan. Risk communication, education on the range of available activities, and prioritization of activities should help homeowners to feel empowered to complete simple risk reduction activities on their property, with support from Local Government.

A total of 47 recommendation and action items are presented in Table 1 within this Executive Summary and are more thoroughly discussed in their appropriate sections within this Plan. Ultimately, the recommendation and action items within this Plan should be considered as a toolbox of options to help reduce the wildfire risk and consequence to Kaslo. Kaslo (in conjunction with RDCK, the Kaslo FireSmart Committee, and other significant stakeholders) will have to further prioritize implementation based on resources, strengths, constraints, and availability of funding, and regularly update the prioritization and course of actions as variables change over time.

¹ Calkin, D., J. Cohen, M. Finney, M. Thompson. 2014. *How risk management can prevent future wildfire disasters in the wildland-urban interface*. Proc Natl Acad Sci U.S.A. Jan 14; 111(2): 746-751. Accessed online 1 June, 2016 at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3896199/>.

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
<i>Water</i>							
<i>Equipment</i>							
Emergency Planning - Section 5.6							
<i>Vegetation Management - Section 5.7</i>							
<i>Fuel Management Treatments</i>							
<i>Residential FireSmart</i>							
<i>Community and Critical Infrastructure FireSmart</i>							

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FREQUENTLY USED ACRONYMS

AOI	Area of Interest
BC	British Columbia
BCWS	British Columbia Wildfire Service
BEC	Biogeoclimatic Ecosystem Classification
Kaslo VFD	Kaslo Volunteer Fire Department (aka Kaslo and Area Volunteer Fire Department)
CFFDRS	Canadian Forest Fire Danger Rating System
CRI	Community Resiliency Investment
CWPP	Community Wildfire Protection Plan
CWRP	Community Wildfire Resiliency Plan
DPA	Development Permit Area
FBP	Fire Behavior Prediction System
FCFS	FireSmart Community Funding and Supports: Stream 1 of the UBCM CRI Program
HIZ	Home Ignition Zone
MOF	Ministry of Forests
MOTI	Ministry of Transportation and Infrastructure
NDT	Natural Disturbance Type
PSTA	Provincial Strategic Threat Assessment
PTU	Proposed Treatment Unit
RDCK	Regional District of Central Kootenay
UBCM	Union of British Columbia Municipalities
WRR	Wildfire Risk Reduction: Stream 2 of the UBCM Community Resiliency Investment Program, administered by the Ministry of Forests
WTA	Wildfire Threat Assessment
WUI	Wildland Urban Interface

SECTION 1: INTRODUCTION

In June 2023, B.A Blackwell & Associates Ltd. was retained by Cathro Consulting to jointly develop a new Community Wildfire Resiliency Plan (CWRP) for the Village of Kaslo (Village; Kaslo). A CWRP has its roots in the Community Wildfire Protection Plan (CWPP) framework, which was originally established in BC in response to the series of devastating wildfires in 2003. This plan replaces the previous 2016 Regional District of Central Kootenay Area D and Kaslo Community Wildfire Protection Plan Update, creating one specific to Kaslo. Recent wildfire disasters like those experienced in Oregon State (2020), Washington State (2014, 2015, 2020, 2023), Fort McMurray, Alberta (2016), BC (2017, 2018, 2021, 2023), and California (2017, 2018, 2020) continue to display the vulnerability of communities and the potential toll of wildfires on families, neighbourhoods, public health, and the economy of entire regions. These events, along with important advances in loss prevention programs, have spurred the need for greater consideration and due diligence concerning fire risk in the wildland-urban interface (WUI).² CWRPs are an invaluable opportunity to proactively manage wildfire risk and increase community resilience to wildfire.

CWRPs are currently being developed at many jurisdictional and geographic scales, and are individually tailored to address the needs of different communities in response to their size, their capacity, and the unique threats that they face. Despite these differences, the goals of a CWRP remain the same and are founded in the seven FireSmart disciplines: Education, Legislation & Planning, Development Considerations, Interagency Cooperation, Cross-Training, Emergency Planning and Vegetation Management.

CWRPs are funded in BC by the Union of BC Municipalities (UBCM) under the Community Resiliency Investment (CRI) FireSmart Community Funding and Supports (FCFS) Program. As per funding requirements, this CWRP is completed according to the 2022 CRI template.

1.1 PLAN PURPOSE AND GOALS

This plan accounts for changes that have occurred since the previous 2016 CWPP and takes advantage of the most recent community wildfire planning framework in BC. This CWRP identifies the interface wildfire risk within the Village, and gives Kaslo a current and accurate understanding of the threats to human life, infrastructure, and values at risk from wildfire. This CWRP is intended to serve as a framework to guide the implementation of specific actions and strategies to:

- Increase the efficacy of fire suppression and safety of emergency responders,
- Reduce potential impacts and losses to property and critical infrastructure from wildfire, and
- Reduce potential wildfire behavior and threat within the community.

To help guide and accomplish the above strategies, this CWRP will provide Kaslo with:

- An assessment of wildfire risk to the community,
- An assessment of values at risk and potential consequences from wildfire,

² Wildland urban interface is defined as the presence of structures in locations in which conditions result in the potential for their ignition from flames and firebrands/embers of a wildland fire (National Fire Protection Association).

- Maps of fuel types and recommended areas for fuel treatments,
- An assessment of emergency response capacity, and
- Options and strategies to reduce wildfire risk through the seven FireSmart disciplines.

1.2 PLAN DEVELOPMENT SUMMARY

The CWRP development process consisted of five general phases:

- 1) Engagement with the Kaslo FireSmart Committee. Consultation with the FireSmart Committee and information sharing with stakeholders and First Nations occurred throughout.
- 2) Review of relevant plans and legislation regarding emergency response and wildfire (Section 2).
- 3) Description of the community and identification of values at risk (Section 3).
- 4) Assessment of the local wildfire risk (Section 4).
- 5) Analysis and action plan for each of the seven FireSmart disciplines (Section 5).

The following next steps are a suggested route towards operationalizing the recommendations detailed in this CWRP:

1. Kaslo FireSmart Committee should continue to meet periodically, as needed to coordinate the fulfillment of this Plan's recommendations (consider annually or bi-annually, before or during the fire season – per Recommendation #17).
2. At the next meeting, consider identifying recommendations to allocate resources to, and pursue funding for, under the next applicable UBCM CRI funding intake (currently 2024 intake).
 - a. Consider meeting well in advance of the UBCM CRI application deadline (early October 2024), to discuss upcoming projects and align activities and initiatives where possible.
 - b. Continued meetings of the FireSmart Committee would be a suitable venue to identify if additional support is needed to fulfill the targeted recommendations.
 - i. Additional support might be required to coordinate activities that will bridge more than one funding application (i.e., prioritizing, prescribing and supervising implementation of vegetation management; coordinating plan and policy review), or that require more time and resources currently available to any one FireSmart Committee member (e.g., potentially some FireSmart education recommendations).
 - ii. Consultant support or a term contract salary could be incorporated into the UBCM CRI application accordingly.
3. In subsequent meetings, members from different agencies could share information about actions taken to fulfill recommendations.
 - a. Documentation of the status of CWRP recommendations could be compiled and maintained alongside these meetings.

SECTION 2: RELATIONSHIP TO OTHER PLANS AND LEGISLATION

Wildfires can affect all aspects of a community. As a result, there are many plans specific to or including Kaslo that relate to this CWRP. This section reviews all relevant plans, policies, bylaws, guidelines, and provincial legislation to identify sections within that are relevant to community wildfire planning and response.

2.1 LINKAGES TO CWPPS/CWRPS

2016 Regional District of Central Kootenay (RDCK) Area D and Kaslo Community Wildfire Protection Plan Update

In 2016, B.A. Blackwell & Associates and Cathro Consulting jointly completed the 2016 Regional District of Central Kootenay (RDCK) Area D and Kaslo Community Wildfire Protection Plan Update. The scope of this plan covered Kaslo and the surrounding communities within RDCK Electoral Area D. Kaslo has made whole or partial progress on 21 of the 34 recommendations (nine recommendations were determined as not relevant/achievable by Kaslo). Overall, Kaslo has made great progress on prescribing and completing fuel treatment units, engaging the community through education events and programs, completing FireSmart assessments of both homes and critical infrastructure, supporting FireSmart training, incorporating FireSmart into development planning, hiring a FireSmart coordinator, and developing the Kaslo FireSmart Committee. A full accounting and discussion of completed activities is in Section 5, and the recommendation table with Local Government comments and stats is provided in Appendix D: 2016 Regional District of Central Kootenay (RDCK) Area D and Kaslo Community Wildfire Protection Plan Update.

Listed below are jurisdictions within the RDCK adjacent or near to Kaslo that have been recently involved in community wildfire planning. *Strategic opportunities exist between these plans and should be considered.*

- RDCK Electoral Area D CWRP 2023 – completed December 2023.³
- RDCK Electoral Area E CWRP 2023 – completed December 2023.³
- RDCK Electoral Area F CWRP 2023 – completed December 2023.³

2.2 LOCAL PLANS AND BYLAWS

The sections and policies of Kaslo’s Official Community Plan (OCP) listed in Table 2 are directly relevant to proactive wildfire resilience in the community. The OCP was reviewed as part of this CWRP to address any gaps or limitations that inadequately address fire hazards or risk mitigation.

³ By B.A. Blackwell & Associates Ltd and Cathro Consulting Ltd.

Table 2: Summary of Kaslo’s Official Community Plan emergency and wildfire-related objectives and policies and their relationship to this CWRP.

Section	Policy Description / Relationship to CWRP
<p>3.10 Climate Change</p>	<p>Objective: To address the impacts and disaster risks of a changing climate on the community, the environment, and infrastructure – frequent changing of weather, increased temperatures, drought conditions, lower snowpacks, wildfires, increased rainfall, flooding, and land hazards such as land erosion and landslides.”</p> <p><i>Highlights the need to proactively address climate risk. Residential-scale FireSmart landscaping, as well as development considerations, can lower fire risk to structures and infrastructure. It can also be applied by the municipality throughout its municipal land.</i></p>
<p>4.2 General Form and Character of Existing and Future Land Use</p>	<p>4.2.1.16: Objective: To minimize wildland/urban interface fire hazard.</p> <ul style="list-style-type: none"> 4.2.2.9: Policy: Support information and educational opportunities for wildfire and fire hazards to property owners and tourists and implement a wildfire protection development permit area to encourage wildfire resistant development near the wildland urban interface. <p><i>FireSmart education and outreach minimizes the risk of wildfire for property owners in the WUI (discussed in Section 5.2). A wildfire hazard development permit area has been enacted (Kaslo OCP Section 16.0, discussed in Section 5.3).</i></p>
<p>5.4 Rural Residential</p>	<p>5.4.2.1: Objective: Encourage new developments to follow wildfire mitigation guidelines to reduce the risk of fire spreading across the wildland urban interface.</p> <ul style="list-style-type: none"> 5.4.3.2: Policy: Regulate development through a Wildfire Protection Development Permit area. <p><i>Reducing fire conditions on private property reduces fire and wildfire risk to that property and the community. FireSmart planning and development considerations are discussed in Section 5.3.</i></p>
<p>9.0 Parks and Natural Areas</p>	<p>9.2.16: Objective: Reduce wildfire risk by administering prescribed FireSmart treatments in Parks and Natural Areas, and other Village-owned undeveloped land.</p> <ul style="list-style-type: none"> 9.3.1: Policy: Designate parks, beaches, trails, dikes, lakefront and riverfront areas Parks and Natural Areas as shown on Map ‘B’ – Land Use Designations Map. <p><i>Treating for wildfire risk reduction on Village property reduces fire and wildfire risk to that property and the community. FireSmart vegetation management is discussed in Section 5.7.</i></p>
<p>10.0 Aerodrome Development Area</p>	<p>10.1.8: Objective: To maximize the preservation and protection of natural areas.</p> <ul style="list-style-type: none"> 10.2.4: Policy: Investigate piping raw water from the reservoir to the area for fire protection.

	<ul style="list-style-type: none"> • 10.2.10: Policy: Manage the forest to reduce the risk of wildfire and harvest timber sustainably, with net revenues going into a fund for future development. <p><i>Access to sustainable and continuous water sources is a key component towards lowering wildfire risk, as well as wildfire suppression by the fire department and wildfire crews.</i></p> <p><i>Sustainable management of the forest fuels contributes to enhancing forest health and reducing the risk of wildfire on the landscape – more so important within Kaslo’s WUI.</i></p>
<p>13.0 Public Utilities and Services</p>	<p>13.2.5: Objective: To consider natural assets as part of the Village’s essential infrastructure.</p> <ul style="list-style-type: none"> • 13.3.11: Policy: Participate with the RDCK and Area D in mutually beneficial, cost-effective development of regional services for water, wastewater, fire protection, emergency response, medical, planning, youth and planning. <p><i>Interagency collaboration is essential to effective wildfire mitigation efforts, allowing for improved planning and efficiencies to be realized. Interagency cooperation is addressed in Section. 5.4.</i></p>
<p>15.0 Environmentally Sensitive and Hazardous Areas</p>	<p>15.1.3: Objective: To recognize that climate change has increased the risk of hazards such as wildfire, flooding and erosion, and extreme/abnormal weather.</p> <p>15.2.9: Policy: Work with the RDCK to coordinate and educate citizens on emergency planning and responses to prepare citizens for emergency hazards such as flooding, wildfires, avalanches, and land erosion.</p> <p>15.2.11: Policy: Reduce wildfire risk near the wildland-urban interface by implementing the Wildfire Protection DPA.</p> <p>15.2.12: Policy: Continue supporting public education through the FireSmart and Community Resiliency Initiative programs.</p> <p>15.2.13: Policy: Maintain undeveloped Village land and road allowances with FireSmart treatment with available funding.</p> <p><i>FireSmart education, wildfire risk reduction treatments, and maintenance of egress/ingress routes contribute to effective wildfire planning and management, as well as efficient and safe egress of the community during a wildfire evacuation and safe access/areas of refuge for wildfire responders. These principles are discussed throughout Section 5.</i></p>
<p>16.0 Wildfire Protection DPA</p>	<p>16.6.1: This DPA includes properties that are within the realm of the wildland-urban interface, and developed areas with a significant forest canopy, where mitigation efforts to reduce the risk of wildfire can help prevent, reduce, or slow the spread of fire between structures and the forests surrounding Kaslo. The adoption of these development guidelines is a key step towards making Kaslo a more resilient, fire-adapted community.</p> <p>16.6.2: Within the Wildfire Protection DPA, no new construction of a dwelling, addition, or accessory structure for which a building permit is required is allowed without a Wildfire Protection Development Permit</p> <p>16.6.3:</p>

- Applicants may be required to provide a FireSmart Assessment Report prepared by a Wildfire Mitigation Specialist before or after construction.
- New buildings or structures and associated accessory buildings and structures should be located as far away from any wildfire risk areas as is reasonably possible or feasible.
- Fire resistive materials and construction practices should be required for all subject development in the Wildfire Protection DPA.
- The following landscape and service conditions should be required in respect of subject development:
 - A defensible space of at least 10 metres, where practical, should be managed around buildings and structures with the goal of eliminating fuel and combustible debris.
 - The defensible space should be larger in areas of sloping ground where fire behaviour creates greater risk. And,
 - avoid the use of highly combustible landscaping materials, such as wood chips.

Targets and actions within this strategy should consider FireSmart landscaping and fire-resistant tree species in their implementation, especially when adjacent to or within areas more densely populated.

Reducing fire conditions on private property reduces fire and wildfire risk to that property and the community.

Consistent with FireSmart principles and objectives presented within this CWRP.

The local bylaws listed in Table 3 are directly relevant to proactive wildfire resilience in Kaslo. These bylaws were reviewed as part of the CWRP to address any gaps or limitations that inadequately address fire hazards or risk mitigation.

Table 3: Summary of local bylaws and their relationship to the CWRP.

Bylaws	Description and <i>Relation to CWRP</i>
<p>Official Community Plan Bylaw No. 1280, 2022⁴</p>	<p>A bylaw to adopt the City of Kaslo’s 2022 Official Community Plan.</p> <p><i>Community and Neighbourhood Plans can be used to specify wildfire risk reduction and FireSmart principles within the Township’s most populated areas, while still trying to maintain each community’s character. Sections relevant to this CWRP and wildfire risk management of Kaslo’s OCP were identified above in Table 2. Recommendations speaking to legislation and planning and development are provided in Section 5.3 of this CWRP.</i></p>

⁴ Village of Kaslo. (2022). *Official Community Plan Bylaw*. Retrieved from: <https://villageofkaslo2022.municipalwebsites.ca/ckfinder/connector?command=Proxy&lang=en&type=Files¤tFolder=%2FBylaws%2F&hash=c245c263ce0eced480effe66bbede6b4d46c15ae&fileName=Official%20Community%20Plan%2C%202022.pdf>

Bylaws	Description and <i>Relation to CWRP</i>
<p>Campground and Parks Bylaw No. 1162, 2016⁵</p>	<p>A bylaw to provide for the regulation and use of Kaslo Municipal campground and municipal parks.</p> <p><i>Limits the potential for unsafe use of campfires, especially during periods of high / extreme fire danger, thus reducing the likelihood of related ignitions in vegetated areas.</i></p>
<p>Outdoor Burning Bylaw No. 1213, 2018⁶</p>	<p>A bylaw to regulate outdoor burning and fireworks in the Village of Kaslo.</p> <p>5. No person shall start or maintain a Category 2 Fire</p> <ul style="list-style-type: none"> (a) except between October 1st to May 15th inclusive, yearly. (b) within thirty (30) feet of any building, structure, overhead wires or cables; (c) unless a person nineteen (19) years of age or older is, at all times, present at the burning site when the fire is burning, and until the fire is totally extinguished, for the purposes of supervising and extinguishing the fire; (d) unless a water hose, connected to an adequate water supply, and shovel is present for the duration of the fire and until it is extinguished. <p>6. No person shall start or maintain a Category 3 or Category 4 Fire</p> <ul style="list-style-type: none"> (a) except between October 1st to May 15th inclusive, yearly. (b) within thirty (30) metres from neighbouring residences and businesses, and five hundred (500) metres from schools in session, hospital and facilities used for continuing care as defined under the Continuing Care Act; (c) unless a person nineteen (19) years of age or older is, at all time, present at the burning site when the fire is burning and until the fire is totally extinguished, for the purposes of supervising and extinguishing the fire; BYLAW 1213,2018 4 (d) unless a water hose, connected to an adequate water supply, shovel and/or excavation machine is present at the burning site; (e) unless it is permitted under the Southern Interior Ventilation Index <p><i>Limits outdoor burning to the lowest risk times of the year, and eliminates it during the fire season. Limits the potential for fireworks to be discharged, especially during periods of high / extreme fire danger, thus reducing the likelihood of related ignitions in vegetated areas.</i></p>
<p>Volunteer Fire Service Regulation Bylaw No. 2769, 2023⁷</p>	<p>A bylaw to regulate Fire Protection and Associated Services provided by Regional District of Central Kootenay Volunteer Fire Departments.</p> <p><i>Reducing fire conditions on private property reduces fire and wildfire risk to that property and the community.</i></p>

⁵ Village of Kaslo. (2016). *Campground and Parks Bylaw*. Retrieved from: <https://villageofkaslo2022.municipalwebsites.ca/ckfinder/connector?command=Proxy&lang=en&type=Files¤tFolder=%2FBylaws%2F&hash=c245c263ce0eced480effe66bbede6b4d46c15ae&fileName=1162%20Campground%20and%20Parks%20CONSOLIDATED.pdf>

⁶ Village of Kaslo. (2022). *Outdoor Burning Bylaw*. Retrieved from: <https://villageofkaslo2022.municipalwebsites.ca/ckfinder/connector?command=Proxy&lang=en&type=Files¤tFolder=%2FBylaws%2F&hash=c245c263ce0eced480effe66bbede6b4d46c15ae&fileName=1213%20Burning.pdf>

⁷ Village of Kaslo. (2022). *Volunteer Fire Service Regulation Bylaw*. Retrieved from: https://www.rdck.ca/assets/Government/Bylaws/Fire/2769-RPL-2170-RDCK_Fire_Services.pdf

Bylaws	Description and <i>Relation to CWRP</i>
<p>Village of Kaslo Fire Department Bylaw No. 1137</p>	<p>A bylaw to provide for the establishment and operation of a volunteer fire department.</p> <p>6. The limits of the jurisdiction of the Fire Chief, and the Officers and Members of the Fire Department will extend to the area and boundaries of the Village of Kaslo and identified District areas</p> <p>14. The Fire Chief, or any other Member in charge at an incident, is empowered to cause a building, structure or thing to be pulled down, demolished or otherwise removed if he deems it necessary to prevent the spread of fire to other buildings, structures or things.</p> <p>15. The Fire Chief, or any other Member in charge at an incident, is empowered to enter at any time, premises or property where the incident occurred and to cause any Member, apparatus or equipment of the Fire Department to enter, as he deems necessary, in order to combat, control or deal with the incident.</p> <p>16. The Fire Chief, or any other Member in charge at an incident, is empowered during the incident to enter, pass through or over buildings or property adjacent to an incident and to cause Members of the Fire Department to enter or pass through or over buildings or property, where he deems to necessary to gain access to the incident or to protect any person or property.</p> <p><i>Grants authority to the Fire Chief and staff to adequately respond to fires on private property within the response area.</i></p>
<p>RDCK Volunteer Fire Service Regulation Bylaw No. 2769, 2023⁸</p>	<p>A bylaw to regulate Fire Protection and Associated Services provided by Regional District of Central Kootenay Volunteer Fire Departments.</p> <p><i>Provides for the Kaslo Volunteer Fire Department.</i></p>
<p>RDCK Emergency Management Regulatory Bylaw No. 2210, 2011⁹</p>	<p>A bylaw to establish and maintain an emergency management framework for the Regional District of Central Kootenay.</p> <p><i>Wildfire resiliency planning is a key component of emergency preparedness.</i></p>
<p>Village of Kaslo Waterworks Bylaw No. 1127</p>	<p>A bylaw to regulate the terms and conditions under which water from the Village of Kaslo may be supplied, used and regulated.</p> <p>20 (1). No Person shall waste, lend, sell or otherwise dispose of water supplied by the Village or permit the water to be taken or carried away for the use or benefit of others, except if it is required to extinguish or prevent the spread of fire.</p> <p>21 (1). The Village retains the right to adjust the water supply pressure or to interrupt supply due to emergency conditions.</p>

⁸ Village of Kaslo. (2022). *Volunteer Fire Service Regulation Bylaw*. Retrieved from: https://www.rdck.ca/assets/Government/Bylaws/Fire/2769-RPL-2170-RDCK_Fire_Services.pdf

⁹ http://www.rdck.ca/assets/Government/Bylaws/Emergency~Services/Bylaw%202210-Emergency_Bylaw.pdf

Bylaws	Description and <i>Relation to CWRP</i>
	<p>23. No unauthorized Person shall in any way interfere or tamper with any fire hydrant or part thereof.</p> <p><i>Access to sustainable and continuous water sources is a key component towards lowering wildfire risk, as well as wildfire suppression by the fire department and wildfire crews.</i></p>

The local plans listed in Table 4 are directly relevant to proactive wildfire resilience in Kaslo. These plans were reviewed as part of the CWRP to address any gaps or limitations that inadequately address fire hazards or risk mitigation.

Table 4: Summary of local plans that are directly relevant to the CWRP.

Local Plan	Description and Relation to CWRP
<p>2021 Tree Planting Plan</p>	<p>This plan identifies plans to plant trees in Kaslo, with emphasis on including Firesmart principles in the plan.</p> <p><i>Targets and actions within this strategy should consider FireSmart landscaping and fire-resistant tree species in their implementation.</i></p>
<p>Village of Kaslo Tree Policy 2017</p>	<p>A policy outlining maintenance of trees on Village property, including trimming, shaping and or removal of trees.</p> <p>8 (b). Development applications requiring Council approval must give consideration to the retention of significant trees. Existing trees should be noted on submission for consideration of retention and protection through a “Tree Retention Plan”, or equivalent. The “Tree Retention Plan” shall take into consideration all existing Wildfire Interface Management Reports available for the site.</p> <p><i>Policy should be updated to reflect FireSmart principles, and to have consistency between it and the 2021 Tree Planting Plan.</i></p>
<p>2010 Kaslo / Area D Climate Change Adaptation Project</p>	<p>A project to gather data and enable further public engagement for topics surrounding climate change.</p> <p><i>Education as it relates to climate change and wildfire mitigation is essential in the success of FireSmart programs in rural communities.</i></p>
<p>EMERGENCY RESPONSE AND RECOVERY PLAN for the Regional District of Central Kootenay</p>	<p>Outlines structural and organizational requirements for coordinated response and recovery from emergencies in the RDCK, including: decision-making tools for evacuation or shelter in place; EOC levels and activation protocols; hazard and evacuation planning; fire planning including industrial, wildfire and structural fires; and, recovery planning.</p> <p><i>Section 3.10 specifically deals with interface fires/wildfires, indicating that interface fires will be managed using unified command with the Ministry of Forests and local fire department(s) and other local fire departments, where applicable.</i></p>

2.3 HIGHER-LEVEL PLANS AND LEGISLATION

Table 5 lists higher-level plans and legislation that are relevant to wildfire planning and risk mitigation within Kaslo and the surrounding area. These plans help guide where and how activities like resource extraction occur on the landscape, which can affect both wildfire threat and consequence. Depending on the location of any proposed fuel management treatments, fuel management prescriptions and prescribed / cultural burn plans may need to address these plans as they relate to on-the-ground restrictions and policies for forest modification.

Table 5: Description of higher-level plans and legislation and their relationship to the CWRP.

Plan	Description and Relationship to CWRP
FRPA – Government Action Regulations (GARs)	<p>Old Growth Management Area (non-legal)</p> <ul style="list-style-type: none"> • <i>One non-legal OGMA partially overlaps the WUI, and another is located adjacent to, but not overlapping, the WUI.</i> <p>Ungulate Winter Range (Conditional Harvest Zones)</p> <ul style="list-style-type: none"> • <i>Seven polygons for Mule Deer and foraging areas overlap or are entirely within the WUI.</i>
BC Provincial Open Burning Smoke Control Regulation	<p>The Open Burning Smoke Control Regulation came into effect in September 2019 and governs open burning relating to land clearing, forestry operations and silviculture, wildlife habitat enhancement, and community wildfire risk reduction.</p> <ul style="list-style-type: none"> • <i>Kaslo and it's WUI are within a High Smoke Sensitivity Zone.</i>
Kootenay Boundary Higher Level Plan	<p>The Kootenay Boundary Land Use Plan Implementation Strategy was completed in 1997, and was discussed in the previous CWPP.</p> <p><i>Legal, spatially defined objectives for 'Connectivity Corridors', and 'Water Intakes Used for Human Consumption' apply within the AOI. A non-legal objective for fire-maintained ecosystem restoration also applies - however, this provision targets NDT4 ecosystems, which are not present in the AOI.</i></p>
Selkirk Resource District Fire Management Plan	<p>The Selkirk Resource District Kootenay Lake Fire Management Plan (FMP) (MFLNRORD, 2016) identifies values at risk on the landscape and prioritizes broad categories of values as 'themes' for categorizing response through the Resource Strategic Wildfire Allocation Protocol (RSWAP). The four themes are 1) Human Life and Safety, 2) Property and Critical Infrastructure, 3) High Environmental and Cultural Values, and 4) Other resource values (timber, rangelands, etc.).</p> <p><i>The organization of values is intended to provide the information needed to make appropriate fire response decisions in complex emergency situations. This CWRP identifies values within the Plan area with the intent of using this information to make appropriate fire response decisions.</i></p>

Plan	Description and <i>Relationship to CWRP</i>
<p>BC Wildfire Act and Wildfire Regulation</p>	<p>The Wildfire Act and Wildfire Regulation define the legal responsibilities and obligations to which everyone in British Columbia is subject. When the BCWS places bans or restrictions in an area, the Wildfire Act and Regulation make them enforceable.¹⁰</p> <p><i>Its key goal is to specify responsibilities and obligations on fire use, wildfire prevention, wildfire control, and rehabilitation.¹⁰</i></p>
<p>Fire Chiefs' Association of BC and BC Wildfire Service MEMORANDUM OF AGREEMENT for INTER-AGENCY OPERATIONAL PROCEDURES AND REIMBURSEMENT RATES</p>	<p>Guides and facilitates the collaboration between the Province and fire departments or by outlining key information regarding resource requests, deployment and response procedures, remuneration guidelines, and other necessary details to effectively manage the partnership. The intent of this Agreement is to further improve the operating procedure, strengthening capacity while providing increased flexibility to share resources in British Columbia, with clear rules of engagement and reimbursement requirements.</p> <p><i>Mutual aid agreements exist between BCWS and RDCK fire services. RDCK fire departments (including the Kaslo and Area Fire Department) routinely work with BCWS in response to incidents within and outside of Fire Protection and Response Areas.</i></p>

SECTION 3: COMMUNITY DESCRIPTION

This section defines the planning area for this CWRP and provides general demographic information about Kaslo. An understanding of population trends, land use patterns, and values at risk can help effectively direct FireSmart outreach and risk mitigation activities.

3.1 WILDLAND-URBAN INTERFACE

The Wildland-Urban Interface (WUI) is defined by FireSmart Canada as the zone where human development meets or intermingles with the natural environment. BC Wildfire Service generates WUI Risk Class maps and associated spatial data to assist with initiatives related to wildfire risk reduction, including the Funding and Supports (FCFS) program.¹¹ For the purpose of the FCFS program, the 'eligible WUI' is considered as the area one kilometer from a structure density class greater than six structures per square kilometer.

Map 1 shows the FCFS eligible WUI for CWRPs in the greater area surrounding Kaslo. Due to the structure density of the unincorporated communities outside Kaslo's municipal boundary (in RDCK Electoral Area D), the WUI effectively extends from just north of Kaslo south to Fletcher Creek. Applying this entire WUI area for this Plan is not practical as:

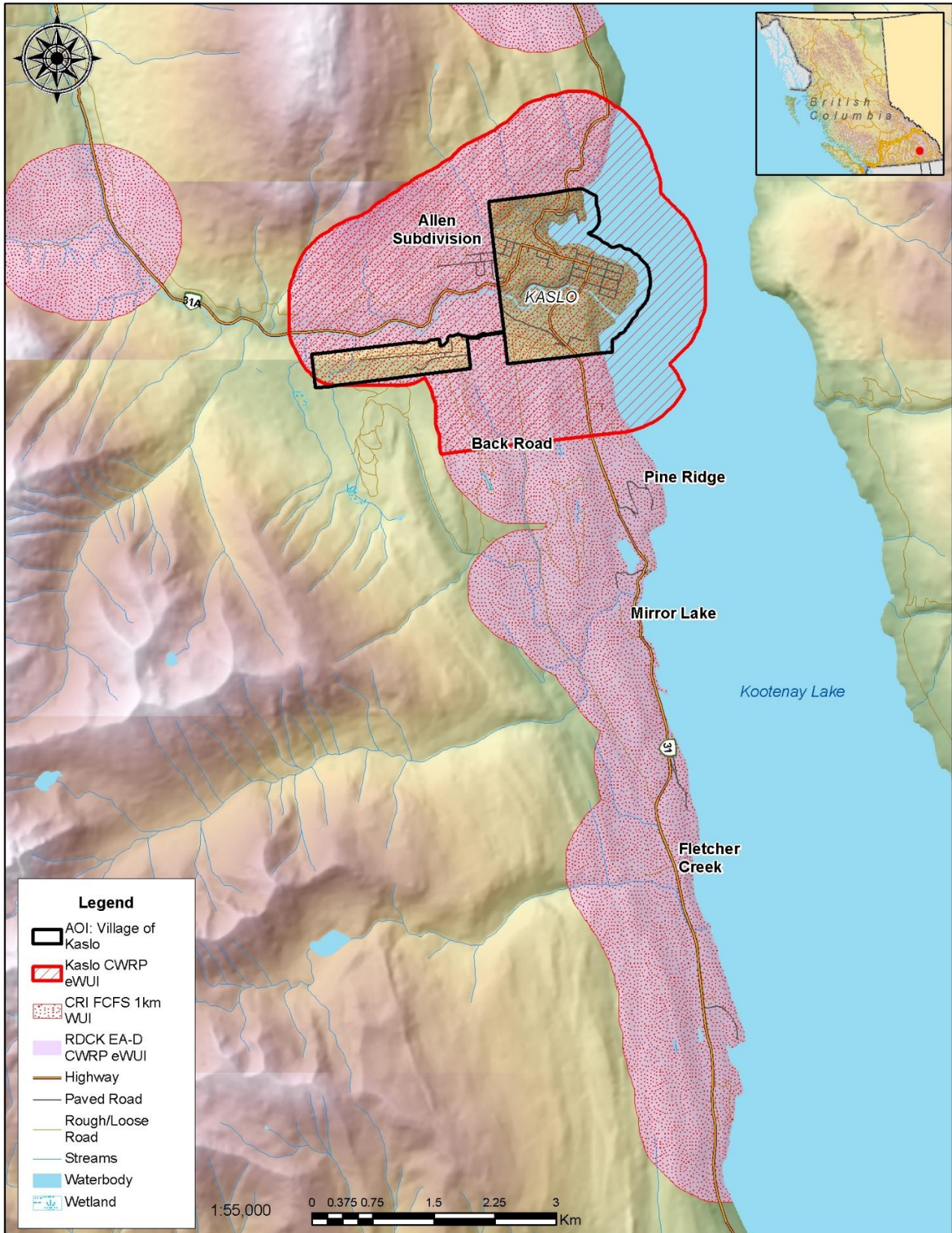
¹⁰ <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/governance/legislation-regulations>

¹¹ [Wildland Urban Interface Risk Class Maps - Province of British Columbia \(gov.bc.ca\)](https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/governance/legislation-regulations/wildland-urban-interface-risk-class-maps)



- RDCK has just completed a CWRP for Electoral Area D, which includes the WUI area shown outside of Kaslo's municipal boundary. FireSmart and fuel management recommendations have been proposed within that Plan for this WUI area; and,
- There is a much greater weighting towards wildfire risk and resiliency planning for Kaslo closer to Kaslo's values at risk (which includes municipal infrastructure as well as residences within the community).

Thus, a one-kilometre buffer of Kaslo's municipal boundary was used to clip the FCFS eligible WUI, creating the eligible WUI for Kaslo's CWRP. Field work, GIS analysis, and the recommendations for this CWRP cover only this one-kilometer eligible WUI (hereafter referred to as WUI) which totals 1,560 hectares and covers all of Kaslo as well as some areas outside of the municipal boundary. The WUI includes residential, industrial, agricultural, and forested areas. Land use within Kaslo is guided by the Official Community Plan as discussed in Section 2.2. As development occurs, it is possible that both the municipal boundary and the WUI will change (and they can independently of each other).



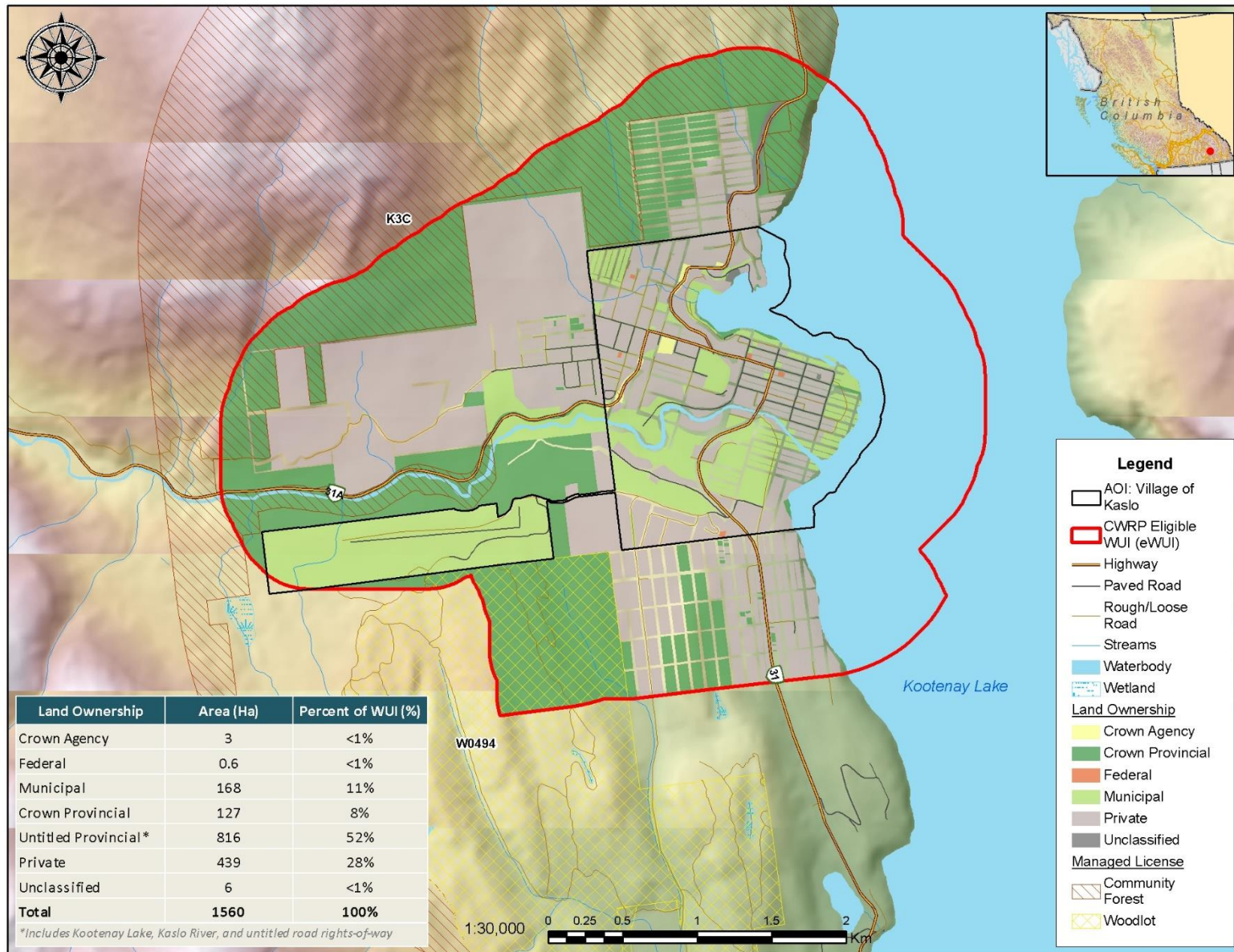
Map 1: Wildland Urban Interface overview map.

Map 2 shows a detailed overview of Kaslo’s WUI, with an approximate breakdown of land ownership type by area listed in Table 6. Approximately half of Kaslo’s WUI is Provincial land, while municipal accounts for 11%. Private land makes up almost all the remaining area, accounting for 11%. The map also shows how continuous the WUI is into RDCK Electoral Area D. Additionally, most of the forested Provincial land surrounding Kaslo is managed through the Kaslo and District Community Forest and Woodlot License 0494; successful wildfire resilience efforts will need to cross these jurisdictional and landscape planning boundaries.

Table 6: Land Ownership within the eligible WUI of Kaslo.

Land Ownership	Area (Ha)	Percent of WUI (%)
Crown Agency	3	<1%
Federal	0.6	<1%
Municipal	168	11%
Crown Provincial	127	8%
Untitled Provincial*	816	52%
Private	439	28%
Unclassified	6	<1%
Total	1560	100%

**Includes Kootenay Lake, Kaslo River, and untitled road rights-of-way*



Map 2. Wildland Urban Interface (WUI) for the Village of Kaslo. The 'eligible WUI' area is the red outlined polygon.

3.2 COMMUNITY DESCRIPTION

The community's population increased 8.4% from 2016 to 2021, to 1,049. However, the many small, numerous communities outside of its municipal boundary within RDCK Electoral Area D rely upon Kaslo as a central point of commerce and services. Relevant socio-economic statistics on population, employment, housing, and education for Kaslo are summarized in Table 7.

Table 7: Socio-economic statistics for the Village of Kaslo, as per the 2021 census. Bolded values will be discussed below as they have special relevance to the CWRP.

Metric	Value
Population¹²	
Total Population	1,049
Population Density (people/km ²)	348.7
Population percentage change between 2016 and 2021	8.4
Number of people <14 years old	225
Number of people 15-64 years old	565
Number of people >65 years old	375
Median Age (years)	58
Housing¹²	
Total Private Dwellings (year)	583
Private Dwellings Permanently Occupied	526
Average Household Size	1.9
Income and Employment¹³	
Median Total Income of Households	30,600

As shown in Table 7 the median household age is 58 and number of residents aged over 65 constitutes 35% of the population. This indicates there could be a higher percentage of the population that could face mobility or transportation constraints when dealing with an evacuation scenario, as well as complications from smoke inhalation during local or regional wildfire events. Of the 583 total private dwellings, 90% are permanently occupied. This indicates Kaslo is a community dominated by permanent residents – this provides an opportunity for proactive FireSmart education as those being educated through Kaslo's FireSmart program can keep and apply that education within the community itself. However, growth in nearby municipalities (such as Nelson) increases wildfire risk within the area surrounding Kaslo. More summer visitors (both tourists and locals) increase the likelihood of a human-caused wildfire (increased ignition potential), and the consequence of a wildfire (more people to evacuate). The surrounding area is home to several tourism hotspots with a focus on outdoor recreation, camping, and boating, including many backcountry trails. Backcountry campers have been identified as a possible source of ignition in the area.

Kaslo's older town centre is built upon an alluvial fan developed at Kaslo River's confluence with Kootenay Lake, on its west shoreline. Newer developments in the northwest are built upon an additional alluvial fan

¹² 2021 Canadian Census Data.

¹³ 2020 Canadian Census Data.

from McDonald Creek. Forestry, fruit farming, and tourism have long been the main industries in town; commercial forestry is still active within the forests surrounding the community, in and outside the municipal boundary (through both a community forest tenure, a woodlot tenure, and private managed forest land). Most residences in Kaslo are located on the north side of Kaslo River, either in the central town centre near the shoreline of Kootenay Lake, or on an elevated terrace in the municipality's northwest. Recent subdivision has occurred adjacent to, but outside the municipal boundary, such as the Allen Subdivision in the northwest, which can be considered a neighbourhood of Kaslo. Most of the developed community area is dominated by cleared land re-vegetated with grass and scattered deciduous and coniferous trees. Residences on the north, west, and south edges are considered interface as they, in varying degrees, meet the forest there as a hard line instead of intermixing within it.

Kaslo lies at the junction of Highways 31 and 31A, the latter of which travels west through Retallack to new Denver. Kaslo is served by the municipally-owned and operated Kaslo Airport, which lies on the west edge of the municipality. Kaslo is a member municipality of the RDCK; as such, some services are provided by the Regional District, others by the municipality, and others shared. RDCK provides building inspection and fire protection (primary structural fire response services by the Kaslo and Area Volunteer Fire Department (Kaslo VFD), but bylaw enforcement is done by the Village itself. The Victorian Community Health Centre of Kaslo offers a variety of services in one location; the types of services delivered depend on patient needs and on whether comparable services are available nearby.¹⁴ The Kootenay Lake Hospital, located in Nelson, is a Level 1 Community Hospital in the Kootenay Boundary health service area managed by Interior Health.¹⁵ The RDCK Emergency Program oversees the planning and implementation of the Emergency Management Program and Area Health service.¹⁵

3.3 VALUES AT RISK

Values at risk are the human, natural, or cultural resources that could be negatively impacted by wildfire. Protection of these values during a wildfire event is an important consideration for effective emergency response. Pre-identifying critical infrastructure and values at risk before an emergency event can ensure that essential services can be protected and/or restored quickly. As well, many activities that proactively assess and mitigate fire hazards around critical infrastructure and “Community Assets” are currently eligible for funding under the 2024 CRI FCFS Program Guides, which is addressed through Recommendation 14. Critical infrastructure includes buildings and structures that are essential to the health, safety, security, or economic wellbeing of the community and the effective functioning of government.

Table 8 lists critical infrastructure in Kaslo as identified through RDCK GIS data, field assessments, and consultation with local government. This list should not be considered as full and complete – Kaslo and RDCK should update it, as required, to ensure all critical infrastructure are eligible for FireSmart assessments and recommended mitigation work. The RDCK maintains a comprehensive database of critical infrastructure that also includes cell phone towers. Water and electric systems are discussed in more detail in Sections 3.3.1 and 3.3.2. At the time of writing, FireSmart Critical Infrastructure

¹⁴ <https://www.interiorhealth.ca/locations/victorian-community-health-centre-of-kaslo>

¹⁵ https://www.interiorhealth.ca/search?type=All&search_api_fulltext=EA-D&f%5B0%5D=content_type%3Alocation

Assessments have been conducted on many of Kaslo’s critical infrastructure. Map 3 presents a visual display of values at risk throughout Kaslo’s WUI.

Table 8: Critical Infrastructure within the Village of Kaslo and its WUI.

Map ID	Classification	Name	Agency	Address
Community and Government				
K-1	Government	City Hall	Kaslo	413 Fourth Street, Kaslo
K-2	Community	Kaslo and Area Arena	Kaslo	517 Arena Ave, Kaslo
K-3	Community	Seniors Centre	Senior Citizens Association of BC	312 4th St #302, Kaslo
K-4	School	JV Humphries Elementary-Secondary School	School District 8	500 6th St, Kaslo
K-9	Government	Kaslo Transfer Station	RDCK/Kaslo	1302 Kaslo West Road
Utilities				
D-80	Water – Treatment	Kaslo Water Treatment Plant	RDCK/Kaslo	-
K-10	Sewage – Treatment	Sewer Treatment Plant		?
K-11	Water – Pumphouse	Hale Subdivision Pumphouse	Kaslo?	?
K-5	Government	Village of Kaslo Public Works Department	Kaslo	437 Spruce St, Kaslo
Transportation				
K-6	Airport	Kaslo Airport	Kaslo	Kaslo West Road
-	Highway	Highway 31	MOTI	-
-	Highway	Highway 31A	MOTI	-
Emergency Response				
K-7	Health Centre/Hospital	Victorian Community Health Centre of Kaslo	Interior Health	673 A Avenue, Kaslo
K-8	Fire Hall	Kaslo and Area Fire Response Service	RDCK/Kaslo	529 Arena Ave, PO Box 727, Kaslo

3.3.1 ELECTRICAL POWER

A large fire has the potential to impact electrical service by causing disruption in network distribution through direct or indirect processes. Direct heat from flames or damage from fallen trees associated with a fire event may cause power outages. Overhead power lines and (even more so) transmission lines can provide excellent fuel breaks and access for first responders in the event of a wildfire – if the vegetation on them is regularly managed and kept in a low-hazard state. They can also be the source of fire ignitions - trees and other vegetation intruding into power lines can cause fires in multiple ways. A tree falling across a line can tear the line down and result in a downed line. A branch spanning two line conductors for a sufficient period of time may ignite the branch and also may produce high-energy, high-temperature arcs multiple feet in length. If the branch remains in contact and arcing, it can cause progressive damage that eventually breaks the line. It is important that both Kaslo and RDCK lobby the electrical power

providers in and influencing the community's WUI (BC Hydro and FortisBC) to regularly maintain their right-of-way's vegetation (see Recommendation #21).

Electrical power throughout Kaslo is provided by a network of wood-pole distribution lines. Although the majority of the community's vegetation profile (limited treed areas) poses low risk for ignition risk with these power lines, there is still instances where both the municipality and landowners have highly flammable vegetation and/or unmaintained conifer trees growing in close proximity to power poles or distribution lines.

Having secondary power sources for critical infrastructure is important to reduce community vulnerability in the event of an emergency that cuts power for days, or even weeks. Kaslo's water treatment plant, sewage treatment plant, the Kemball Building, Fire Hall, Hospital, and School all have back up diesel generators.¹⁶ Kaslo should continue to review additional critical infrastructure and invest in back-up generators as required (see Recommendation #37).

3.3.2 WATER AND SEWAGE

Rebuilt in 2003-2004, RDCK's McDonald Creek Water System (contracted for operation to Kaslo) sources its water supply from Kemp Creek and springs on the lower slopes of True Blue Mountain; an auxiliary intake was installed on Kaslo River in 2018. The service currently has 72 connections and supports seven fire hydrants. The system is ~95% gravity fed (the exception being for the Hale subdivision, which requires a pumphouse). McDonald Creek is included with Kaslo by the Fire Underwriters Survey fire protection rating. Kaslo has to impose seasonal water restrictions to reduce the total volume for residential and commercial use due to the increased demand during summer months. Additionally, the Kemp Creek watershed is vulnerable to the effects of climate change including wildfires.

Kaslo VFD noted that the supply of water available for fire response within the Village's fire hydrants is sufficient. However, the area above the Kaslo Arena at J Avenue can have water pressure issues as it is a dead-end line that feeds a reservoir. Local Government noted there are seasonal water concerns and it is necessary during the summer months for the municipality to impose water restrictions to reduce the total volume for residential and commercial use due to the increased demand during that time.

The most reliable source of year-round water for firefighting is the Kootenay River. Preliminary mapping of other sources (i.e., ponds, creeks, etc.) has been done, but continued efforts to do so will greatly increase response times and efficacy of actioning wildfires by responders (see Recommendations #27-29). See Section 5.5 for recommendations related to fire department resources.

Sewage system?

¹⁶ Information provided via Local Government questionnaire.

3.3.3 HAZARDOUS VALUES

Hazardous values are defined as values that pose a safety hazard to emergency responders and include large fuel / propane facilities, landfills, rail yards, storage facilities containing explosives, pipelines, etc. Anywhere combustible materials, explosive chemicals, or gas/oil are stored can be considered a hazardous value. Protecting hazardous values from fires is important to preventing interface fire disasters.

Hazardous materials are transported by vehicles (highways) through Kaslo's WUI. Vegetation management practices along highway right of ways has the ability to exacerbate a fire hazard if deciduous and/or coniferous vegetation and cured grasses are being brushed and left in accumulations adjacent to them. This presents more of a concern where the vegetation on private properties adjacent to the highway has a coniferous component or cured grass which are able to support fast spreading fires. Recommendations associated with industry stakeholders are discussed in Section 5.4. Hazardous materials may also be stored at the Kaslo Airport, Kaslo Transfer Station, Kaslo Public Works Department facility, or Kaslo and Area Arena.

Hazardous values will also exist on private land within Kaslo's WUI (e.g., industrial and hobby farms store gas, oil, and/or fertilizer). Education regarding FireSmart principles for hazardous materials storage should be included in Kaslo's FireSmart education messaging.

3.3.4 FIRST NATION AND CULTURAL VALUES

Kaslo has registered National Historic Sites and many historic buildings. And, although there are no registered archeological sites within the WUI, there is a high potential for sites to be found given the long history of use by the Yaqan Nukiy (Lower Kootenay Band) of the Ktunaxa Nation and the Secwépemc First Nation. Known archeological sites are protected under the Heritage Conservation Act, which applies to both private and public lands.

Kaslo, RDCK, and/or MOF should continue to consult with applicable First Nations, historical societies, and private landowners well before development and implementation of any proposed fuel prescriptions to allow for meaningful review and input, as well as collaborative opportunities – cultural burning by First Nations has a long documented and orally spoken history in the area. Archeological assessments may be required to ensure that known or unknown cultural resources are not inadvertently damaged or destroyed, and that First Nations strategies for land management in their traditional territory are complied with.

3.3.5 HIGH ENVIRONMENTAL VALUES

The Kootenay Boundary Higher Level Plan and Kaslo and District Community Forest Management Plan identify many important environmental areas throughout the WUI. Additionally, Kaslo's WUI has significant overlaps with species and ecosystems at risk identified through the B.C. Conservation Data Center and by the federal government (Table 9; Map 3). All fuel management prescriptions must identify and mitigate potential impacts to ecosystems or species at risk and may require rationales and/or mitigation measures for tree removal in some areas.

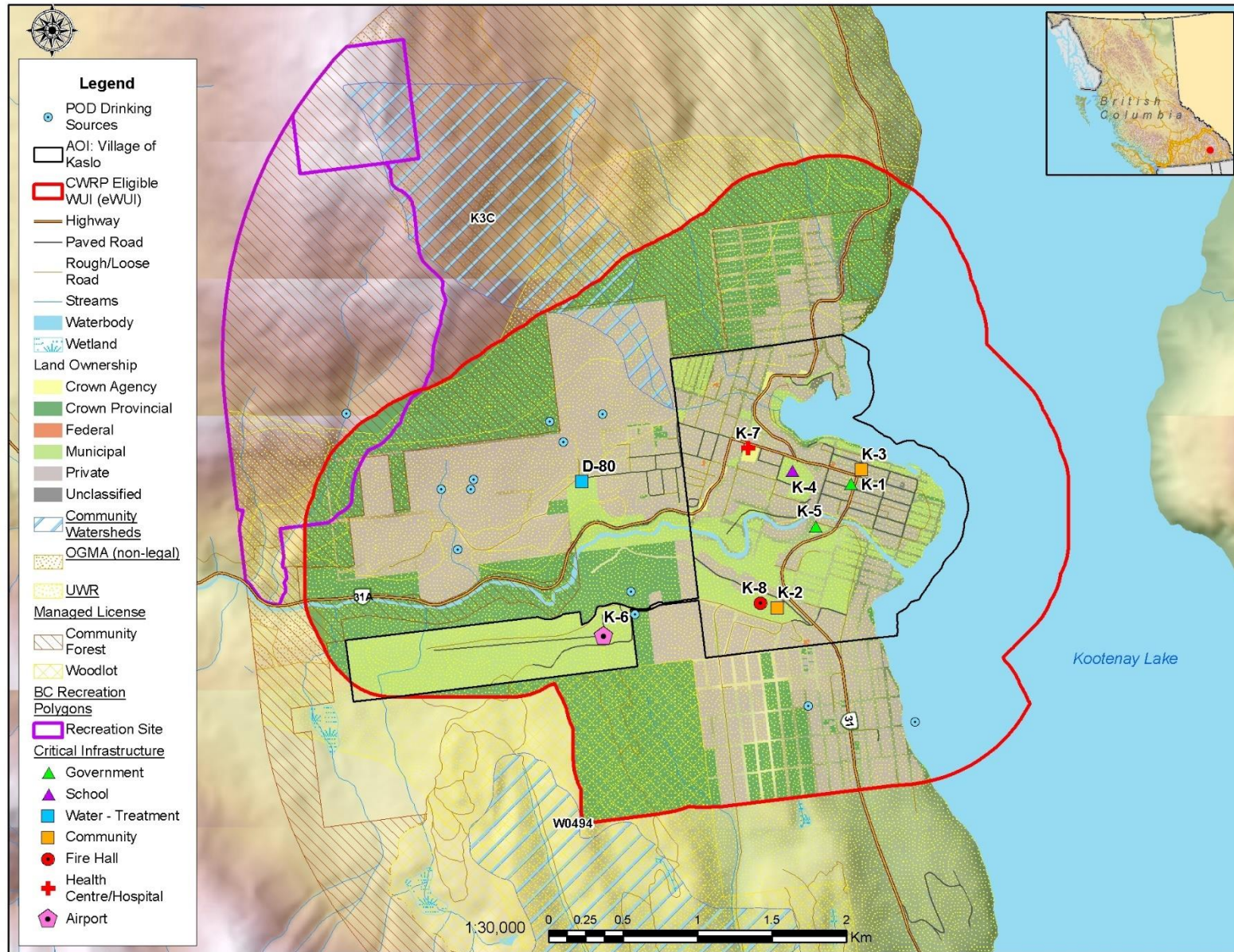
Since 2014, the Kootenay Lake Conservation Fund has been in effect in the area surrounding Kaslo as an RDCK service. The fund has provided grants totaling over ½ million dollars and raised an additional 2.45 million dollars in financial and in-kind support from other funders. In Electoral Area D (the area surrounding Kaslo), the fund has several projects in place aimed at conserving valuable natural areas and restoring and preserving a healthy environment. These projects include water quantity monitoring, bat habitat conservation, grizzly bear co-existence solutions, western toad population monitoring, Kootenay Lake shoreline development guidance, and osprey nest monitoring.

Table 9. Species and Ecosystems at Risk in the WUI – BC Conservation Data Center.

Common Name	Scientific Name	Category	BC List	Habitat Type
White Sturgeon (Upper Kootenay River Population)	<i>Acipenser transmontanus pop. 1</i>	Vertebrate Animal	Red	RIVERINE: Big River; Moderate Gradient; Low Gradient; Pool; LACUSTRINE: Deep Water

3.3.6 OTHER RESOURCE VALUES

There are multiple other important resource values associated with the land base, including agriculture (commercial and hobby farms), recreation, tourism, community drinking water sheds, and registered drinking water points of diversion. Additionally, the Kaslo and District Community Forest and Woodlot 0494 have significant tenure overlaps with Kaslo’s WUI. Any fuel management, forestry work, and industrial work within Kaslo’s WUI should consider the impact of wildfire risk to the community. Recommendations associated with industry stakeholders are discussed in Section 5.4.



SECTION 4: WILDFIRE RISK ASSESSMENT

This section summarizes the factors that contribute to local wildfire risk in Kaslo. Section 4.1 discusses the wildfire environment in the WUI: focusing on topography, fuel, and weather. Section 4.2 and 4.2.3 discuss wildfire history in the area and wildfire response data from local fire crews. Section 4.3 uses updated fuel types combined with wildfire threat assessments and an office-based analysis to update the local wildfire risk for the eligible WUI.

The local wildfire risk assessment helps to identify the parts of the eligible WUI that are most vulnerable to wildfire. The CWRP risk assessment will complement the Emergency Response and Recovery Plan for the Regional District of Central Kootenay.

The relationship between wildfire risk and wildfire threat is defined as follows:

$$\text{Wildfire Risk} = \text{Probability} \times \text{Consequence}$$

Where:

Wildfire risk is defined as the potential losses incurred to human life and values at risk within a community in the event of a wildfire.

Probability is the threat of wildfire occurring in an area and is expressed by the ability of a wildfire to ignite and then consume fuel on the landscape. An area's *wildfire threat* is controlled primarily by:

- Topography: Slope and terrain features can influence rate of spread; aspect can affect pre-heating and other fuel properties.
- Fuel: Amount, vertical and horizontal arrangement, type, and dryness.
- Weather: Temperature, relative humidity, wind speed and direction, precipitation.

Consequences refer to the repercussions associated with fire occurrence in a given area. Higher consequences are associated with densely populated areas, presence of values at risk, etc.

4.1 WILDFIRE ENVIRONMENT

There are three environmental components that influence wildfire behavior: topography, weather, and fuel. These components are generally referred to as the 'fire behaviour triangle' (Figure 1); the ways in which they individually influence the wildfire environment of the area will be detailed below. Fuel is the only component of the fire triangle that can be reasonably managed through human intervention. It is important to recognize that in WUI fires, wildland fuels (trees, shrubs, branches, etc.) are not the only fuel available to the fire – houses and their exterior construction materials and landscaping vegetation, cars, barbeque propane tanks, and more (anything that is flammable or combustible) is available fuel.



Figure 1: Graphic display of the fire behaviour triangle, and a subset of characteristics within each component.¹⁷

4.1.1 TOPOGRAPHY

Slope steepness influences a fire’s trajectory, rate of spread, and its ability to gain momentum uphill. Other factors of topography that influence fire behaviour include aspect, elevation, and configuration of features on the landscape that can restrict (i.e., water bodies, rock outcrops) or drive (i.e., valleys, exposed ridges) the movement of a wildfire.

Shown below on Map 4 and detailed in Table 10, the majority of Kaslo’s developed areas are in places of less than 20% slope and would experience very little flame and fuel interaction caused by slope. Thus, topography driven fire behaviour presents a limited local natural risk factor within Kaslo’s densest areas. The most consistent, steep slopes within Kaslo’s WUI are in the largely undeveloped, forested north area and would experience accelerated rates of fire spread *uphill* due to slope associated fire behaviour. This exposed south/southeast facing slope will receive nearly constant insolation throughout the summer. While this aspect provides the most challenging weather conditions in fire season, vegetation growth is typically more limited due to more pronounced growing season water deficits. Importantly, most structures are located at the slope bottom, with few to none located within the steep slope area – slope position, discussed further below, is key to assessing slope-associated fire risk.

On a large scale, the broad Kootenay Lake valley can funnel winds to drive a fire both up (north) and down (south) the valley. Additionally, Kaslo River and adjacent creek draws (often running up/down the valley side slopes) provide additional convective features that can drive the up valley and upslope spread of fire. However, the associated slope driven fire behaviour is, again, moving away from Kaslo’s densest developed areas.

¹⁷ Graphic adopted from the Province of Alberta.

Table 10. Slope Percentage and Fire Behaviour Implications.

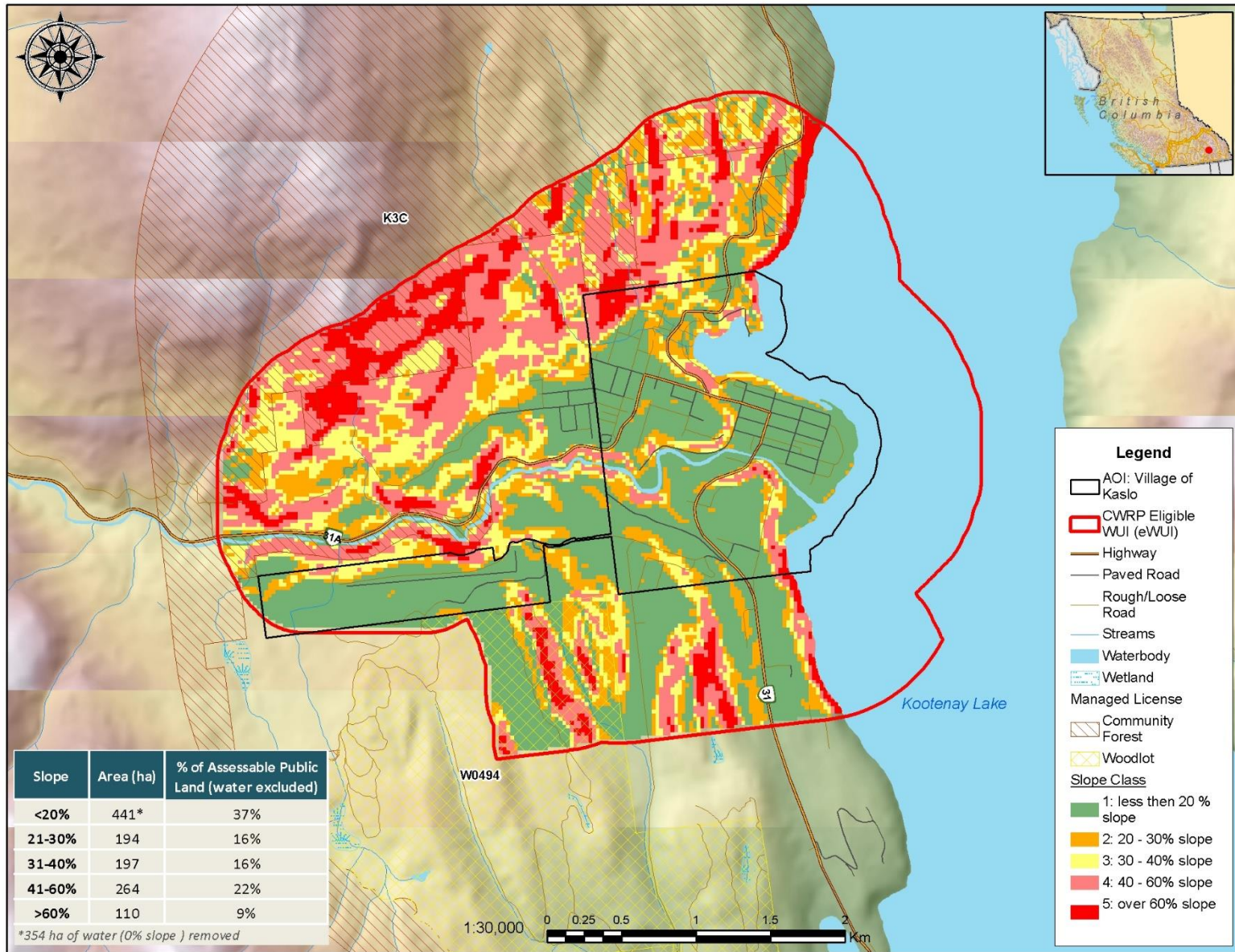
Slope	Area (ha)	Percent of Eligible WUI	Fire Behaviour Implications
<20%	441*	37%	Very little flame and fuel interaction caused by slope, normal rate of spread.
21-30%	194	16%	Flame tilt begins to preheat fuel, increase rate of spread.
31-40%	197	16%	Flame tilt preheats fuel and begins to bathe flames into fuel, high rate of spread.
41-60%	264	22%	Flame tilt preheats fuel and bathes flames into fuel, very high rate of spread.
>60%	110	9%	Flame tilt preheats fuel and bathes flames into fuel well upslope, extreme rate of spread.

**354 ha of water (Kootenay Lake; 0% slope) removed*

Table 11 shows the fire behavior implications of the slope position of a value (i.e., structure: home, critical infrastructure, etc.). Values located in the mid- and upper slope position are threatened by faster rates of fire spread due to the pre-heating of fuels from fire below and longer flame lengths reaching uphill. As discussed above, most of Kaslo’s developed areas (and values) are situated on slopes less than 20% at the bottom of slope features – i.e., there are no consistent, steeper slopes below them – so they would not have fire rates of spread influenced by topography alone.

Table 11. Slope Position of Value and Fire Behaviour Implications.

Slope Position of Value	Fire Behaviour Implications
Bottom of Slope/ Valley Bottom	Impacted by normal rates of spread.
Mid Slope - Bench	Impacted by increase rates of spread. Position on a bench may reduce the preheating near the value. (Value is offset from the slope).
Mid Slope – Continuous	Impacted by fast rates of spread. No break in terrain features affected by preheating and flames bathing into the fuel ahead of the fire.
Upper 1/3 of slope	Impacted by extreme rates of spread. At risk to large continuous fire run, preheating and flames bathing into the fuel.



Map 4: Slope, by slope classes, for Kaslo's WUI

4.1.2 FUEL

The ecological context of wildfire and the role of fire in the local ecosystem under both current and historical conditions is an important basis for understanding the current and future wildfire threat to a community. Also, the type and amount of fuel available for a wildfire is a major driver of the potential fire behaviour in an area. Fuel is the only component of the fire triangle that can be realistically managed through human intervention. This section analyses and discusses available *wildland* vegetative fuels within Kaslo's WUI.

The forested slopes both within and outside Kaslo's WUI have experienced a significant amount of past, recent, and ongoing logging. Past logging, combined with historically suppressed wildfires throughout the 1900s, has resulted in a relatively continuous distribution of even-aged conifer stands. However, within Kaslo's WUI, some of these forested stands have seen new logging and completed fuel treatments that have begun breaking up the even-aged continuity, something that can reduce wildfire behaviour by forcing fire 'to the ground'. Importantly, management of reduced slash (harvest debris) in these WUI harvested areas is paramount towards further reducing their wildfire behaviour and potential risk to nearby neighbourhoods and adjacent communities.

The Canadian Forest Fire Behaviour Prediction (FBP) System outlines sixteen fuel types based on characteristic fire behaviour under defined conditions.¹⁸ BC Wildfire Service maintains a provincial fuel type layer that was confirmed and updated for this CWRP. It should be noted that mixed conifer stands¹⁹ in the interior wet belt, of which Kaslo's WUI is within, are one of the specifically identified areas of uncertainty and knowledge gaps within the FBP system and are considered, at best, a poor match with any fuel type.²⁰ The FBP system was almost entirely developed for boreal and sub-boreal forest types, which do not occur within the study areas. Furthermore, fuel types depend heavily on Vegetation Resource Inventory (VRI) data, which is gathered and maintained to inform timber management objectives, not fire behaviour prediction. Although a subjective process, the most appropriate fuel type was assigned based on research, experience, and practical knowledge; this system has been successfully used within BC, with continual improvement and refinement, for 25 years.²¹ In some areas, aerial imagery is of low spatial resolution and/or ground access was impossible, making fuel type assessment difficult.

Table 12 (and displayed on Map 5) lists the percentage of assessable land, by fuel types, in Kaslo's eligible WUI. The fuel type present that is considered most hazardous in terms of fire behaviour (almost all located south of Kaslo) is C-3. However, under certain weather conditions (discussed in Section 4.1.3 below), extensive areas of C-5, C-7, and O-1a/b can support a rapidly spreading surface fire (with candling or even

¹⁸ Forestry Canada Fire Danger Group. 1992. Development and Structure of the Canadian Forest Fire Behavior Prediction System: Information Report ST-X-3.

¹⁹ Species such as western white pine and western larch growing in multi-story canopies, usually associated with Douglas-fir, redcedar, lodgepole pine, or other species.

²⁰ Natural Resources Canada. 2018. British Columbia Wildfire Fuel Typing and Fuel Type Layer Description. Daniel D.B. Perrakis, George Eade, and Dana Hicks

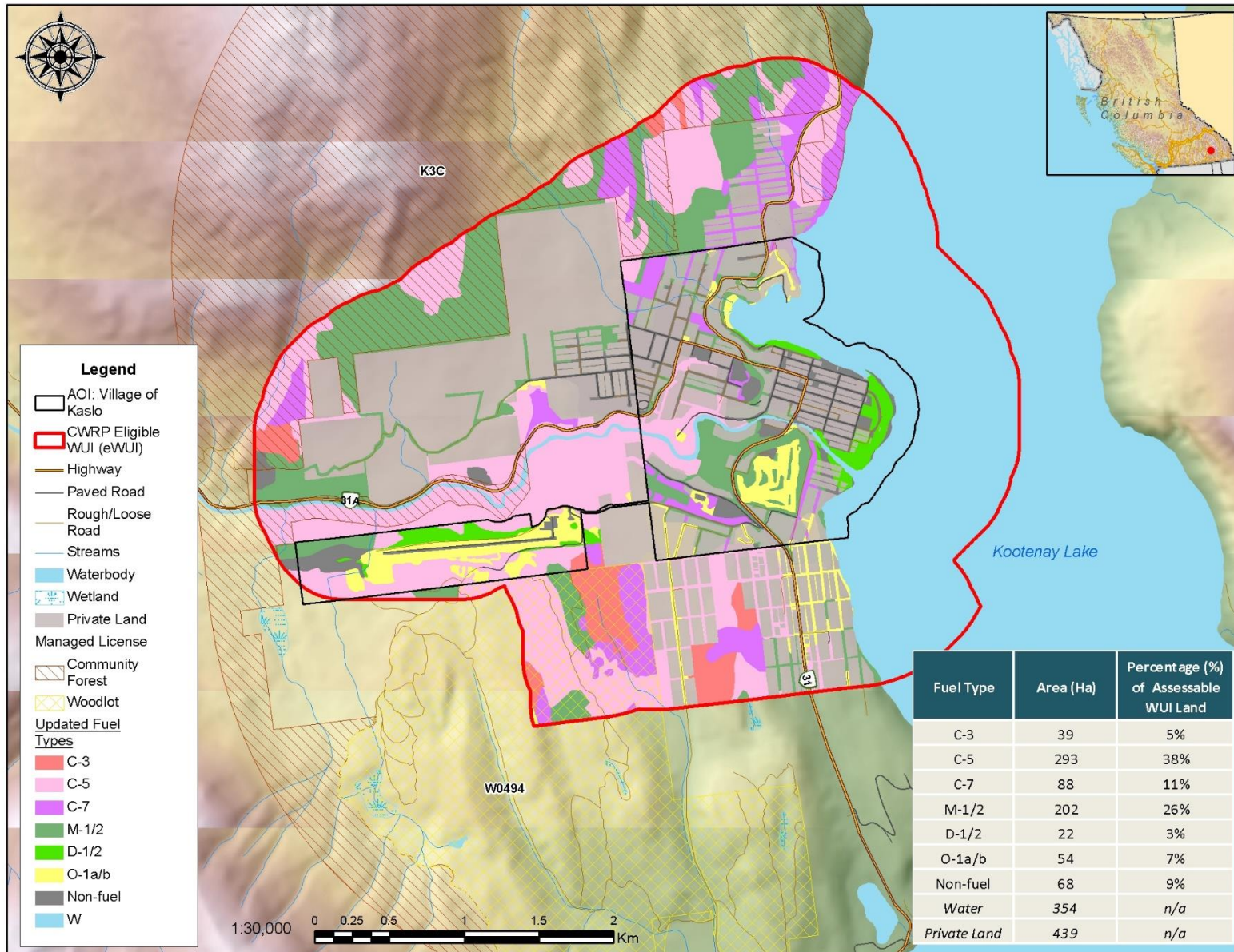
²¹ Perrakis, D, G. Eade and D. Hicks. 2018. Canadian Forest Service Pacific Forestry Centre. British Columbia Wildfire Fuel Typing and Fuel Type Layer Description

passive crown fires) capable of damage or destruction of property and jeopardizing human life. The fire behaviour potential in these fuel types is recognized as highly variable dependent on the percentage of grass, shrubs, and surface fuels that are cured and the wind speed. An M-1/2 fuel type can be considered hazardous depending on the proportion of conifers within the forest stand, and/or the amount of dead and downed material. D-1/2 stands (for Kaslo, identified as the deciduous shrub dominated lake shore areas) are dominated by deciduous species, and are generally considered the least hazardous forest type because of their higher moisture content and lack of flammable ladder fuels. The hazard of a D-1/2 stand can greatly increase if there is an accumulation of surface fuels, cured grasses, or flammable shrubs. Recent spring cross-over conditions²² (called the ‘spring dip’) have allowed for destructive forest fires in deciduous-dominated stands. Detailed fuel type descriptions and their associated wildfire risk can be found in Appendix A-1: Fuel Typing Methodology.

Table 12. Fuel types in Kaslo’s Wildland Urban Interface

Fuel Type	Fuel Type Description within the WUI	Area (ha) of WUI	Percent (%) of WUI (water removed)
C-3	Pole-sapling to mature even-aged conifer-dominated forest with moderate to high density and high crown closure (near or at horizontal continuity). Crowns separated from the forest floor in mature stands.	39	5%
C-5	Low to moderate density, uneven-aged conifer-dominated forest, crown base heights mixed. Understory of discontinuous natural conifer ingress in openings and gaps, deciduous shrubs, and herbs.	293	38%
C-7	Low-density, uneven-aged conifer-dominated forest; crowns separated from the ground; understory of discontinuous grasses and (less-so) shrubs. Exposed bed rock and low surface fuel loading. Often located with southerly-facing slopes, and/or dry sites where water is a limiting factor. <i>Completed fuel treatments are attributed this fuel type.</i>	88	11%
M-1/2	Moderately well-stocked mixed stands of conifer and deciduous trees; low to moderate dead stem density and down woody fuels. Often transition to become more conifer dominated as pioneer deciduous species die out if disturbance is excluded.	202	26%
D-1/2	Deciduous stands/forest/shrubland. Hazard increases with the amount of deadfall and/or establishment of a flammable shrub layer.	22	3%
O-1a/b	Grassland fuels (‘a’ refers to matted grasses, ‘b’ refers to standing). Matted and standing grass that can cure; sparse or scattered shrubs, trees, and down woody debris. Cutblocks >2 seasons old that do not meet S-type descriptions, as well as young regenerating cutblocks that have not reached any horizontal continuity.	54	7%
Non-fuel	Areas with no available forest or grass fuels (e.g., roadways, gravel clearings, irrigated and/or mowed fields). These areas may (and often do) contain combustible materials, infrastructure, flammable landscaping, and homes.	68	9%
Water	<i>Rivers, ponds, lakes, etc.</i>	354	n/a
Private Land		439	n/a

²² Cross-over conditions refer to a point where air temperature drops below the relative humidity (e.g., 20°C/15% humidity), providing conditions for potentially severe fire behaviour.



Map 5. Updated fuel types in Kaslo's WUI.

4.1.3 WEATHER

Kaslo is located at ~590m elevation on the west shore of Kootenay Lake. The large lake is oriented north-south, with large mountain ranges running parallel on each side. Based on historical averages from 2000-2024,²³ fire season conditions are generally warm to hot (July and August daily temperature highs averaging 25.4°C) with some rainfall expected throughout (August averages the least rainfall with 33mm, July and September with the second least at 44mm and 43mm respectively, while June averages the most with 100mm). With climate change projections trending toward even hotter summers and more pronounced droughts.²⁴ Local BC Wildfire Service (BCWS) staff working actively on wildfires in the Central Kootenays during 2023 commented that in this region, weather (i.e., relative humidity and wind), slope, and aspect are far more important factors in fire growth than fuel types.²⁵

Historical weather data can provide information on the number and distribution of days when Kaslo's WUI and surrounding areas experience high fire danger conditions. 'High fire danger' is considered with a Canadian Forest Fire Danger Rating System (CFFDRS) Danger Class rating of 4 (High) or 5 (Extreme). Average danger class data for Kaslo is determined from the [nearest and most representative] Powder Creek (located on the east side of Kootenay Lake directly across from Kaslo, facing west, at 1020 m elevation). Averages for the 12-year period 2010-2022 are presented below in Figure 2. July, August, and September have the greatest number of High and Extreme fire danger days, with July averaging 16, August 23, and September 12. When combined, 55% of days in those three months exhibit High or Extreme fire danger. It is important to note that High and Extreme fire danger days are present throughout the entire fire season, from May to October, within Kaslo's WUI.

Hourly wind speed and direction are also recorded at BCWS weather stations. Data is publicly available in the form of average Initial Spread Index (ISI) roses.²⁶ The ISI is a numeric rating of the expected rate of fire spread that combines the effects of wind speed and fine fuel moisture (which is controlled by temperature and relative humidity). ISI roses can be used to help plan the location of fuel treatments on the landscape to protect values at risk based on the predominant wind direction and frequency of higher ISI values. Wildfire that occurs upwind of a value poses a more significant threat to that value than a wildfire which occurs downwind of it.

²³ <https://www.theweathernetwork.com/ca/historical/british-columbia/kaslo>

²⁴ Environment and Climate Change Canada for Kaslo.

²⁵ From verbal conversations between the Plan's developers and wildfire crews encountered during field work for the Plan's development.

²⁶ <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/vegetation-and-fuel-management/fire-fuel-management/fuel-management>

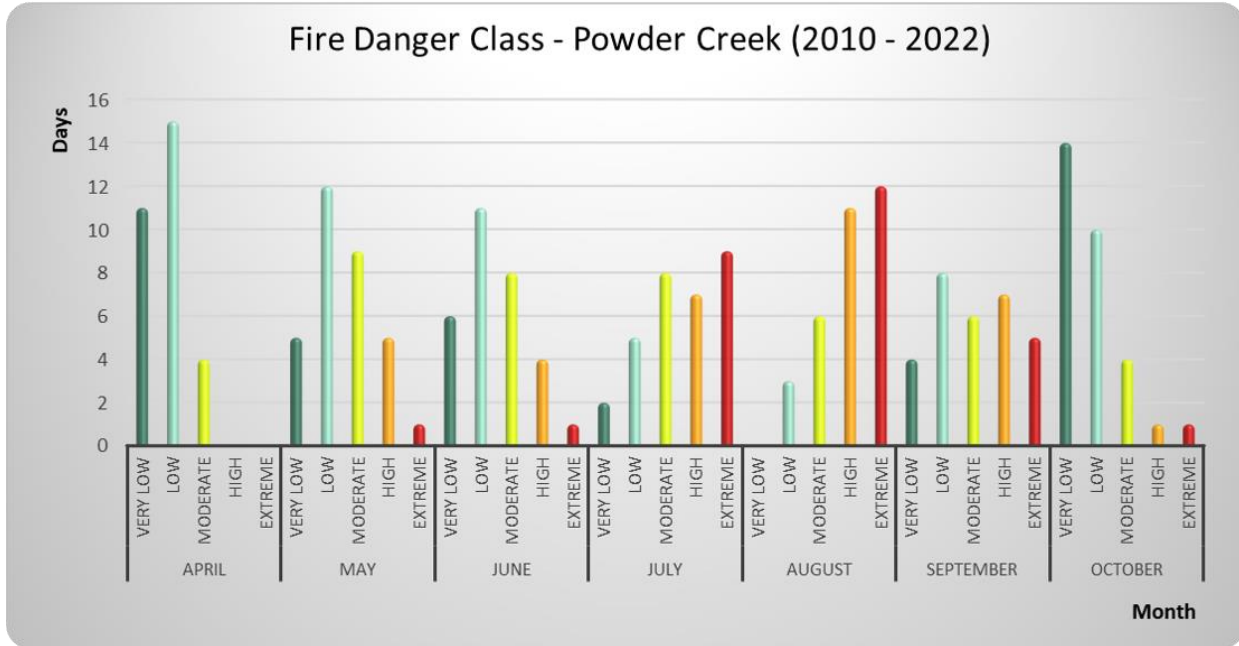


Figure 2: Average number of fire danger rating days by month for the Powder Creek fire weather station (2010-2022).

Wind and ISI data assessed from the Powder Creek fire weather station during the fire season is shown in Figure 3. It indicates that Kaslo primarily experiences winds following the main Kootenay Lake valley topographical feature (up-valley north and down-valley south). Importantly, the highest ISI values (and thus associated with higher rates of fire spread) occur from May through August, which includes the highest temperature and lowest precipitation summer months.

The local BCWS Wildfire Prevention Officer noted that high elevation spruce/balsam stands [outside of Kaslo’s WUI] tend to exhibit the most aggressive and volatile growth in the region. Middle elevation mixed stands of Douglas-fir, larch, and pine species [largely within the upper elevations of Kaslo’s WUI] can be volatile as well, however, typically less so than the higher spruce/balsam stands. Low elevation western red cedar/western hemlock stands [largely within the lower slopes and elevations of Kaslo’s WUI] exhibit the least volatility, unless certain fuel and weather conditions are met. Importantly, as fuel conditions dry out in the summer and combine with specific weather events (wind, low humidity, hotter temperatures), these fuel types can react with intensity and exhibit aggressive fire behavior. Echoing the sentiments of the firefighting ground crews encountered during Plan development field assessment work, winds are required to create volatility and fire growth in the fuel types in and surrounding Kaslo and are also required to push fire aggressively downslope towards the community.

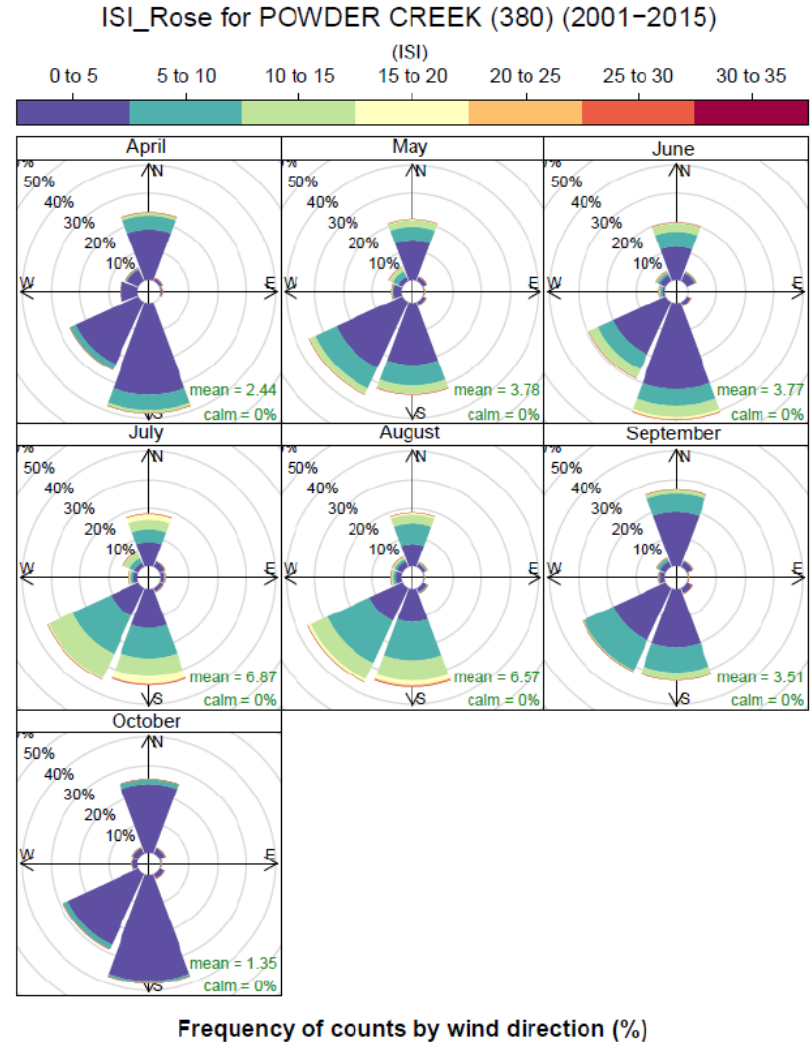
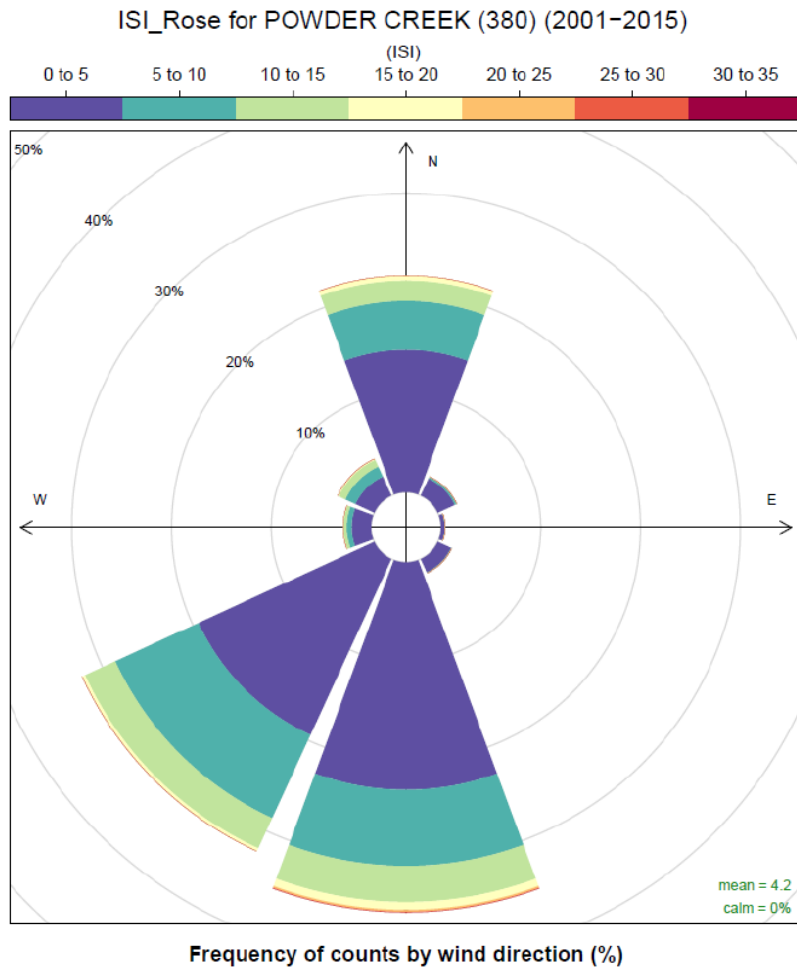


Figure 3. Daily and monthly average initial spread index rose for Powder Creek fire weather station for the fire season (April – October; 2001-2015)

4.2 WILDFIRE HISTORY

4.2.1 HISTORIC FIRE REGIME

Kaslo’s WUI can be categorized using the Biogeoclimatic Ecosystem Classification (BEC) system, which classifies the province into zones by vegetation, soils, and climate. Regional subzones are derived from relative precipitation and temperature. BEC zones and subzones have associated Natural Disturbance Types (NDTs). Natural ecosystems go through processes of establishment, aging, disturbance, and renewal – renewal can be initiated by large wildfires. These NDTs categorize the Province into zones based on the frequency and severity of pre-European disturbance events. It is important to note that this definition of "natural" disturbance includes aboriginal land management activities such as burning as they were conducted before European contact.²⁷ NDTs for Kaslo’s WUI are detailed in Table 13 and displayed on Map 6.

The majority of Kaslo’s WUI (86%; lower elevation areas) is classified as NDT 3 – ecosystems with frequent stand-initiating events.²⁸ These ecosystems are characterized by frequent wildfires that range from small spot fires to conflagrations covering tens of thousands of hectares. This results in a landscape mosaic of stands of different ages with individual stands being even-aged.²⁸ Larger fires often occurred, and could grow to enormous sizes if no topographical-limiting features were present. The mean return interval for fire in the ICH NDT3 was approximately 150 years.²⁸

The northern edge of Kaslo’s WUI (remaining 14% of the WUI area) is classified as NDT 2 – ecosystems with infrequent stand-initiating events.²⁸ Historically, this resulted in stands with uneven-aged tendencies and multi-storied forest canopies resulting when undisturbed for significant periods of time. Wildfires tended to be moderate in size (20 to 1000 ha) with areas of unburned forest resulting from sheltering terrain features, higher site moisture, or chance.²⁸ Larger fires did occur after periods of extended drought. The mean return interval for fire was approximately 200 years, allowing for long periods of post-wildfire regeneration.²⁸

It is important to consider that BEC and their associated NDT distributions will likely shift and/or change because of climate change.

Table 13. Natural Disturbance Types (NDTs) of Kaslo’s WUI.

Biogeoclimatic Zone	Natural Disturbance Type	Area (ha)	Percent (%)
ICHdw1: Interior Cedar -- Hemlock; Dry Warm; West Kootenay	NDT3	1344	86%
ICHmw2: Interior Cedar -- Hemlock; Moist Warm; Slokan	NDT2	216	14%

²⁷ https://www.env.gov.bc.ca/fia/documents/TERP_eco_rest_guidelines/defgoals/natdisturb.htm

²⁸ BC Biodiversity Guidebook. <https://www.for.gov.bc.ca/hfd/library/documents/bib19715.pdf>



4.2.2 HISTORICAL WILDFIRE OCCURENCES

Map 6 displays BCWS historical wildfire perimeters and ignition points (which records point ignitions that may or may not have developed into a wildfire with a recorded perimeter area) within five kilometres of Kaslo’s WUI. Since 1922, 12 wildfires have occurred within the area, five of which occurred after 1990 (with the remaining seven having occurred prior to 1940). The most recent occurred in 2022 just west of Kaslo and burned the second largest total area (1,924 hectares) of the 12 wildfires noted – this shows that wildfires in and surrounding Kaslo’s WUI have the ability to grow in size and threaten the community itself. For the five wildfires recorded since 1994, three were caused by lighting and two were caused by humans.

The BCWS fire ignition point data is available from 1950 onwards. Looking at the same five-kilometre area surrounding and including Kaslo’s WUI, 53 out of 185 (84%) recorded ignitions are from unknown causes. Removing those from the dataset, 94 out of 132 known ignitions (71%) have been from lighting, with half of those (49%) recorded from 2000 onwards. 29% of known ignitions are from human and associated human activity.

Figure 4 displays trends with fire ignitions since the 1950’s *within Kaslo’s WUI*. Opposite from the lighting dominated ignition trend of the five-kilometre buffer area, the overwhelming majority of known fire ignition point data within the WUI is attributed to human activity (72%; 13/18), all occurring from 1994 onwards. This highlights the need for continued FireSmart education by Kaslo regarding potential high-risk fire ignition human activities.

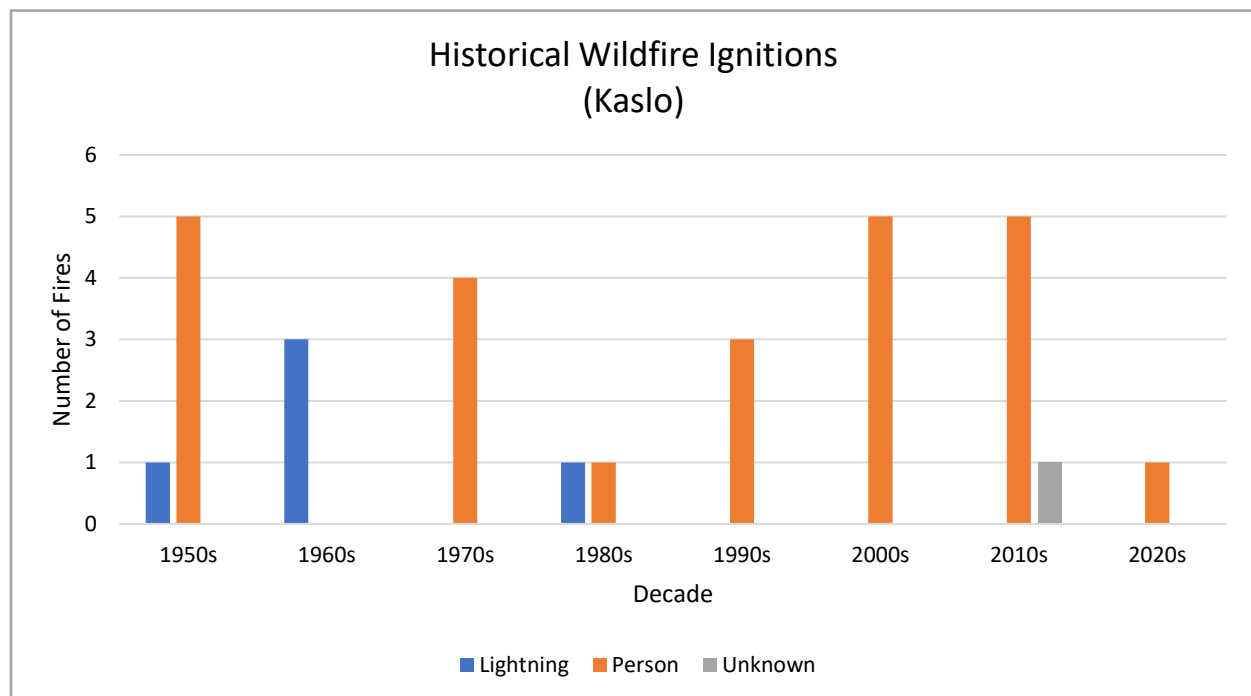
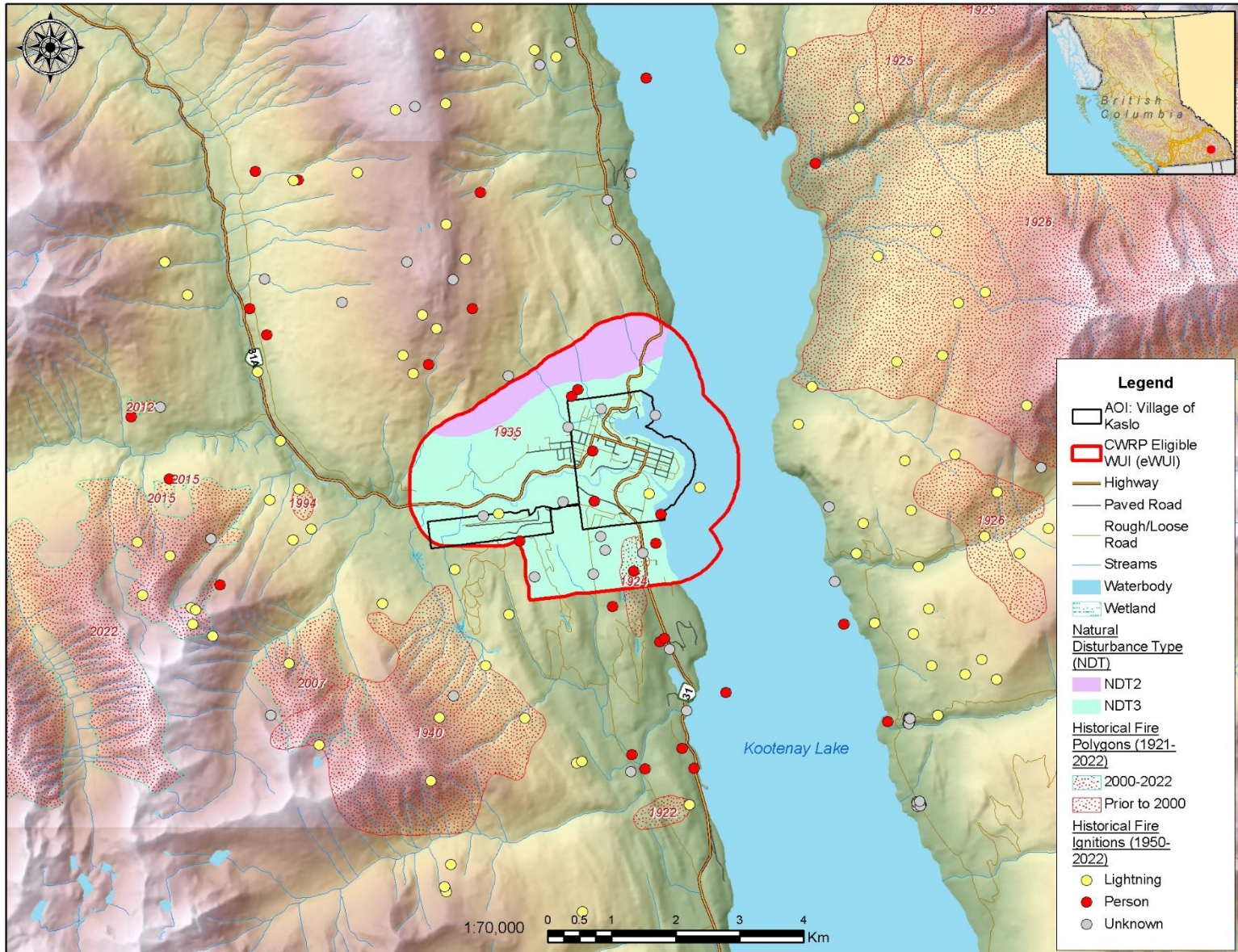


Figure 4: Summary of fire ignition data by cause within Kaslo’s WUI (1950-2022; Data from the BC Wildfire Service).



Map 6: Natural disturbance regimes and historical fire ignitions and occurrences for Kaslo's WUI and a five-kilometer area surrounding.

4.2.3 WILDFIRE RESPONSE

Kaslo VFD fire noted²⁹ that it responded to an average number of fire call outs over the last two years despite the hotter, drier weather that occurred during the summer seasons. Also, it identified the beach area parallel to Vimy Park at Kootenay Lake the most common nuisance fire location, contributing to two to three callouts per year. This demonstrates the importance of wildfire specific training and equipment and public fire education – wildfires can just as easily begin from a house fire or nuisance natural area fire igniting the adjacent forest and wildland fuels. See Section 5 for related recommendations.

4.3 LOCAL WILDFIRE RISK ASSESSMENT

There are two main components of this local risk assessment: the *wildfire behaviour threat class* (fuels, weather, and topography sub-components) and the *WUI risk class* (structural sub-component). The local wildfire threat assessment process includes several key steps as outlined in Appendix A: Local Wildfire Risk Process and summarized as follows:

- *Fuel type attribute assessment* – ground truthing/verification and updating as required to develop a local fuel type map (Appendix A-1: Fuel Typing Methodology).
- *Consideration of the proximity of fuel to the community* – recognizing that fuel closest to the community usually represents the highest hazard (Appendix A-4: Proximity of Fuel to the Community).
- *Analysis of predominant summer fire spread patterns* – using wind speed and wind direction during the peak burning period using ISI Rose(s) from BCWS weather station(s). Wind speed, wind direction, and fine fuel moisture condition influence wildfire trajectory and rate of spread.
- *Consideration of topography in relation to values* (Table 10 and Table 11) – slope percentage and slope position of the value are considered, where slope percentage influences the fire’s trajectory and rate of spread and slope position relates to the ability of a fire to gain momentum uphill.
- *Stratification of the WUI* – according to relative wildfire threat based on the above considerations, other local factors, and field assessment of priority wildfire risk areas.

Wildfire threat assessment field work in Kaslo’s WUI was completed in August of 2023. Field stops (e.g., qualitative FireSmart notes, fuel type updates/verification, photograph documentation) were made across the WUI (see Appendix A-2:), including 11 Wildfire Threat Assessment (WTA) threat plots (see Appendix B: Wildfire Threat Assessment – Worksheets and Photos). WTA plots were completed in interface (i.e., abrupt change from forest to residential development) and intermix (i.e., where forest and structures are intermingled) areas of the WUI to support wildfire risk analyses and development of priority treatment areas. Areas with limited number of WTA’s completed within the WUI can be largely attributed to accessibility constraints in that area of the WUI (e.g., access required through private property, steep slopes, no existing roads, etc.).

²⁹ Data provided to B.A. Blackwell & Associates from CFR via information gathering questionnaire

It is important to note that the local WTA analysis does not apply to private land parcels nor any areas outside of the eligible WUI for this CWRP. As well, the threat assessments quantify threat as it relates to forest fuels, but do not include the ignition potential of residential landscaping, structures, or other infrastructure. Structure fires and structure-to-structure spread in a wildfire scenario are largely attributable to hazardous conditions in the FireSmart Home Ignition Zone of a structure (i.e., the area within 30m of the principal building and/or its attachments).

4.3.1 WILDFIRE THREAT CLASS ANALYSIS

Classes of the wildfire threat class analysis are as follows:

- Very Low: Waterbodies with no forest or grassland fuels, posing no wildfire threat;
- Low: Developed and undeveloped land that will not support significant wildfire spread;
- Moderate: Developed and undeveloped land that will support surface fires that can be unthreatening to homes and structures;
- High: Landscapes or stands with continuous forested or grassland fuels that will support candling, intermittent crown fires, or continuous crown fires. These landscapes often contain steeper slopes, rough or broken terrain and/or south or west aspects. High polygons may include high indices of dead and downed conifers; and
- Extreme: Continuous forested land that will support intermittent or continuous crown fires.

The results of the wildfire threat class analysis are shown on Map 7 and detailed in Table 14 below. The local threat class analysis shows that, for the assessable area (i.e., not private land and excluding the WUI area overlapping Kootenay Lake), 36% of Kaslo’s WUI is classified as a high or extreme fire threat class and 42% is classified as a moderate threat class – almost all associated with a combination of previously discussed high-risk factors: areas with steeper slopes, dangerous fuel types, southerly aspects, and/or on the leading sides of dominant fires season winds (north and south). 21% of the WUI is classified as a low threat class – almost all located in Kaslo’s historic town centre (grass and deciduous dominated mixed fuel types) or areas of completed fuel treatments. Importantly, private land totals 28% of Kaslo’s WUI – this area was not allocated fire threat data. Conditions on private land can often result in the fire threat being much higher than in the forest adjacent if there is low compliance with FireSmart vegetation and structure principles – issues that were frequently observed throughout Kaslo during field work.

Table 14: Wildfire threat class summary for Kaslo’s eligible WUI.

Wildfire Threat			
Threat Class	Hectares	Percentage (%) of Assessable WUI Area	% of Assessable Public Land (water excluded)
Extreme	72	5%	9%
High	209	13%	27%
Moderate	323	21%	42%
Low	162	10%	21%
Very Low/No Threat (Water)	354	23%	-

Wildfire Threat			
Threat Class	Hectares	Percentage (%) of Assessable WUI Area	% of Assessable Public Land (water excluded)
No Data (Private Land)	439	28%	-

4.3.2 WUI RISK CLASS ANALYSIS

WUI risk classes are quantified when the Wildfire Threat (the above) is assessed as high or extreme, potentially causing unacceptable wildfire risk when near communities and developments. WUI risk classes are described below:

- **Low:** The high or extreme threat is sufficiently distant from developments, having no direct impact of the community and is located over 2 km from structures;
- **Moderate:** The high or extreme threat is sufficiently distant from developments, having no direct impact of the community and is located 500m to 2 km distance from structures;
- **High:** The high or extreme threat has potential to directly impact a community or development and is located 200m to 500m from structures; and
- **Extreme:** The high or extreme threat has potential to directly impact a community or development and is located within 200m from structures.

Table 15 below (and displayed on Map 7) summarizes the risk class ratings within the WUI. Of the 281 hectares assigned a High or Extreme wildfire threat class, 176 hectares (63%) have a high or extreme WUI risk. These areas can indicate priority areas/neighbourhoods for directing FireSmart and vegetative/fuel management efforts, if practicable.

It is important to note that reducing the risk (i.e., performing wildland fuel management) in any of the moderate to extreme WUI risk areas is unlikely to be a silver bullet in protecting neighbourhoods. In extreme wildfire scenarios, firebrands (embers) can travel many kilometers ahead of the active fire front, land in densities of up to 600/m², and ignite combustible building materials and landscaping vegetation. In combination with wildland fuel management, increasing the resilience of Kaslo and its interface neighbourhoods can only be efficiently achieved by performing residential-scale FireSmart activities on private land. The proposed fuel treatment units identified in Section 5.7 were selected for as the highest priority areas that are practicable to implement and present a high risk to the community.

Table 15: WUI risk class ratings within Kaslo's WUI.

Wildland Urban Interface Risk			
Risk Class	Hectares	Percentage (%) of Assessable WUI Area	% of Assessable Public Land (water excluded)
Extreme	56	4%	7%
High	120	8%	16%
N/A (Moderate, Low, Very Low Fire Behavior)	839	54%	-

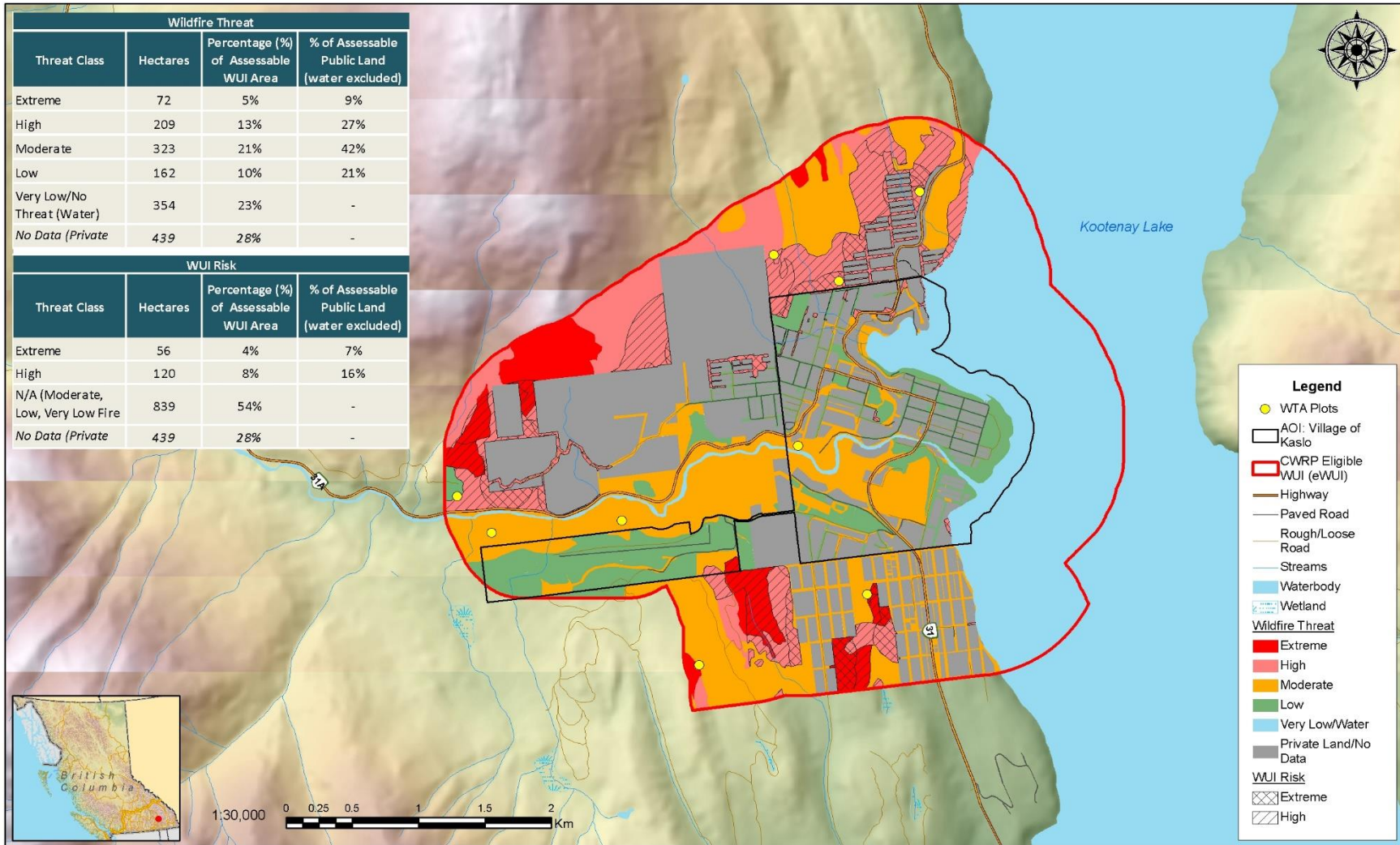
Wildland Urban Interface Risk			
Risk Class	Hectares	Percentage (%) of Assessable WUI Area	% of Assessable Public Land (water excluded)
No Data (Private Land)	439	28%	-

For detailed field data collection and spatial analysis methodology for the local threat assessment and classification, see Appendix A: Local Wildfire Risk Process.

The Province of BC produces a Provincial Strategic Threat Analysis (PSTA, updated in 2021) for all non-private land parcels in BC. This high-level assessment of relative wildfire threat throughout the province is largely based on data from the Vegetation Resource Inventory (VRI) that has not been ground truthed, fire occurrence patterns, potential fire intensity, and spotting potential.³⁰ The PSTA ranks threat on a scale of 1 (lowest) through 10 (extreme). Complementing the above local wildfire risk analyses, the PSTA is a high-level, geographic information system (GIS) raster analysis that is suitable for wildfire threat information across the land base, while appropriate land management activities need to be determined at the local level using site-specific stand-level information.

Additionally, the Province has developed a WUI Risk Class Framework to prioritize risk reduction initiatives, categorizing WUI polygons by a risk class of 1 (highest) through 5 (lowest). The application of relative risk does not imply “no risk” since the goal is to identify areas where there is higher risk. Kaslo’s WUI is categorized as being in a Risk Class of 1 – the highest possible risk class.

³⁰ MFLNRORD. (2017). Provincial Strategic Threat Analysis. Accessed from: https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/provincial_strategic_threat_analysis_2017_update.pdf



Map 7: Local wildfire threat assessment within Kaslo's WUI.

4.4 HAZARD, RISK, AND VULNERABILITY ASSESSMENT

The purpose of a Hazard, Risk and Vulnerability Assessment (HRVA) is to help a community make risk-based choices to address vulnerabilities, mitigate hazards, and prepare for responding to and recovering from hazard events. The HRVA process assesses sources of potential harm, their likelihood of occurring, the severity of their possible impacts, and who or what is particularly exposed or vulnerable to these impacts.³¹ An HRVA was not noted for Kaslo nor RDCK Electoral Area D, however, the Emergency Response and Recovery Plan for the Regional District of Central Kootenay includes a section on interface wildfire planning (3.10) with listed potential impacts. When an HRVA is completed or updated for or including Kaslo (or RDCK as a whole), the most recent CWRPs and their completed wildfire threat class analyses and recommendations should be reviewed and incorporated.

³¹ Government of BC. HRVA Example Report. https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/local-government/hrva/hrva_forms-step_8-anytown_bc-sample_hrva_report.pdf

SECTION 5: FIRESMART PRINCIPLES

FireSmart™ is the leading program in Canada aimed at empowering the public and increasing neighbourhood resilience through wildfire mitigation measures. It has been formally adopted by almost all Canadian provinces and territories, including British Columbia in 2000. The FireSmart program covers a wide breadth of preventative measures, which are founded in the seven FireSmart disciplines: Education, Legislation and Planning, Development Considerations, Interagency Cooperation, Cross-Training, and Vegetation Management. These seven disciplines and the guiding principles behind FireSmart can be applied at a number of spatial scales, and are not restricted to any type of land ownership, forest type or property type. Kaslo's FireSmart program has been managed by the municipality since 2020.

Since the 2016 CWPP was completed, many of its recommendations have been wholly or partially implemented (the recommendation table with Local Government comments and status is provided in Appendix D). Recommendations and activities completed and ongoing will be discussed in their relevant FireSmart section below; overall, Kaslo has made great progress on prescribing and completing fuel treatment units, engaging the community through education events and programs, completing FireSmart assessments of both homes and critical infrastructure, supporting FireSmart training, incorporating FireSmart into development planning, hiring a FireSmart coordinator, and developing the Kaslo FireSmart Committee.

Additionally, four neighbourhoods within Kaslo have been working on implementing FireSmart principles and objectives:

- Bay View: FireSmart Canada Neighbourhood Recognition achieved in 2021. Conduct spring and fall season neighbourhood cleanup events.
- Downtown One: Neighbourhood Hazard Assessment and Report completed June 2023. Next working to draft a neighbourhood plan, host a neighbourhood event, and apply for FireSmart Canada Neighbourhood Recognition status.
- Brennand Street: Neighbourhood Hazard Assessment and Report completed June 2023. Next working to draft a neighbourhood plan, host a neighbourhood event, and apply for FireSmart Canada Neighbourhood Recognition status.
- Arena Avenue: Initial neighbourhood Hazard Assessment and Report conducted in 2021, but the neighbourhood did not complete the necessary steps to gain FireSmart Canada Neighbourhood Recognition status. The neighbourhood expressed renewed interest in 2023, and had an updated Neighbourhood Report sent. Next working to draft a neighbourhood plan, host a neighbourhood event, and apply for FireSmart Canada Neighbourhood Recognition status.

It has been found that during extreme wildfire events, most home destruction has been a result of low-intensity surface fire flame exposures, usually ignited by embers (firebrands). Firebrands can be transported long distances ahead of the wildfire, across fire guards and fuel breaks, and accumulate in densities that can exceed 600 embers per square meter. Combustible materials found on the exterior of

and surrounding homes (the FireSmart Home Ignition Zone) combine to provide fire pathways allowing spot surface fires ignited by embers to spread and carry flames or smoldering fire into contact with structures.

Because ignitability of structures and landscaping vegetation is the main factor driving structure loss, the intensity and rate of spread of wildland fires beyond the community has not been found to necessarily correspond to loss potential. For example, FireSmart homes with low ignitability may survive high-intensity fires, whereas highly ignitable homes may be destroyed during lower intensity surface fire events.³² Increasing ignition resistance would reduce the number of homes simultaneously on fire; extreme wildfire conditions do not necessarily result in WUI fire disasters.³³ Initial assessments of homes/structures damaged versus those not from the recent 2023 Kelowna-area wildfires provides strong evidence supporting these key points.³⁴ It is for this reason that the key to reducing WUI fire structure loss is to reduce structure ignitability. Mitigation responsibility must be centered on structure owners, with support from Local Government. Risk communication, education on the range of available activities, and prioritization of activities should help homeowners to feel empowered to complete simple risk reduction activities on their property.

5.1 COMMUNITY OVERVIEW

During CWRP development, general FireSmart risk and resiliency factors for Kaslo were noted (Table 16). This incorporates field observations, the local risk assessment, information from meetings with Local Government, and background review.

Table 16: FireSmart vulnerability and resilience summary for Kaslo.

Vulnerability	Resilience
- Isolated location.	- Very active in FireSmart program at both the municipal and neighbourhood levels, with education and activities.
- Surrounded by moderate to steep sloped conifer dominated forests with >75% of the WUI classified as Moderate or higher Wildfire Threat.	- Incorporated FireSmart into legislation, planning and development.
- High and Extreme WUI Risk polygons identified.	- Fire hydrants.
- General lack of adherence to FireSmart building and landscaping principles at the individual property level.	- Completed fuel treatments in interface areas; prescribed and planned fuel treatments in interface areas.

³² Cohen, J. Preventing Disaster Home Ignitability in the Wildland-urban Interface. Journal of Forestry. p 15 - 21.

³³ Calkin, D., J. Cohen, M. Finney, M. Thompson. 2014. *How risk management can prevent future wildfire disasters in the wildland-urban interface*. Proc Natl Acad Sci U.S.A. Jan 14; 111(2): 746-751. Accessed online 1 June, 2016 at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3896199/>.

³⁴ Presentation by BCWS to the Wildland Fire and Fuels Community of Practice group via Forest Professionals of BC Webinar, November 2023.

The sections to follow provide information on each FireSmart discipline as it relates to Kaslo. An analysis of actions that have been implemented are noted, as well as any relevant gaps identified. Each section contains a table of recommended actions for Kaslo. Most actions are fundable through the CRI FireSmart Community Funding and Supports (FCFS) program. Each recommendation includes a rationale, lead agency, timeline, and estimated resources to complete.

5.2 EDUCATION

Public education and outreach play a critical role in helping a community prepare for and prevent a wildfire emergency. Awareness of wildfire risk is important, but this needs to be paired with an awareness of potential mitigation actions and available FireSmart programs for residents to implement on their properties and within the community. Participating in wildfire risk reduction and resiliency activities can also promote a sense of empowerment and shared responsibility at the home, street, neighbourhood, and municipal level. The education discipline often supports the successful implementation of many other FireSmart disciplines by building awareness and understanding within both residents and visitors.

Kaslo has been actively engaging the community through educational FireSmart events and programs since 2020. Completed and ongoing activities include:

- 2021
 - Community engagement through door-to-door knocks.
 - FireSmart Coordinator funding received.
 - Completed FireSmart Home Ignition Zone assessments.
- 2022
 - Continued focus on public engagement including meetings, field visits of completed fuel treatments, and FireSmart events led by the FireSmart Coordinator with Kaslo VFD attendance.
- 2023
 - Continued community engagement through FireSmart events (15), led by the FireSmart Coordinator.
 - Hired a FireSmart Youth Coordinator summer position.
 - Completed 31 FireSmart Home Ignition Zone Assessments.

As Kaslo's FireSmart program continues into 2024, the municipality and FireSmart Committee are planning to continue the strong FireSmart education emphasis through continued community engagement including information events, CWRP public engagement, community field tours of completed treatment units, and increasing digital communications including social media channels. Kaslo also plans to facilitate a Youth FireSmart Coordinator for a second summer, following the successes of this position in 2023. This position is important as it introduces FireSmart principles to Kaslo's youth, and allows them to participate in simple mitigation activities within the community; they are also more likely to bring the FireSmart message home and discuss it with family and friends. Youth FireSmart education can also be applied in the school setting. FireSmartBC has many materials, across various mediums, that can be used to engage children of all ages in FireSmart education.

Kaslo keeps an up-to-date FireSmart webpage that introduces FireSmart to residents and provides (with links) information on how residents can FireSmart their own homes and properties, initiate the FireSmart Neighbourhood Recognition Program for their neighbourhood, access FireSmart rebates and assessments, and more.³⁵ Additionally, Kaslo has fire weather signs posted outside the Kemball Building, and have them posted on the municipal website, shared through Facebook, and posted on bulletin boards.

To continue furthering FireSmart education initiatives, Table 17 below details recommended actions that Kaslo can pursue. Kaslo's Local Government and FireSmart Committee recognize that FireSmart conditions of private property (understanding that homes, landscaping vegetation, and all other manner of flammable and combustible materials are considered fuel in the WUI wildfire triangle), play an important role of a community's overall wildfire risk and has accordingly already placed a large emphasis on FireSmart education opportunities. Exploring new ones, recognizing that reaching new audiences is challenging, are already planned for 2024. However, not all will be successfully received by the public, but it is equally important to know what does not work as what does in getting the FireSmart message further into the community – then efforts can be refined and improved moving forwards. Also, it is important to recognize the demographics of the community and provide FireSmart education opportunities that can be accessed by all. With 35% of residents over the age of 65, social media and online messaging may not be as accessible to them as the younger residents. Continuing to provide a mix of educational mediums (in person events, social media campaigns, webpage information) may be what is required to spread FireSmart education as broadly as possible within the community.

³⁵ <https://kaslo.ca/p/firesmart>

Table 17: Education recommendation and action items

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
Education - Section 5.2							
1	High	Continue to apply for funding and employ a Kaslo FireSmart Coordinator/Mitigation Specialist. Additionally, if the FireSmart Youth Coordinator position continues to be a success, apply for funds to employ this position, as required.	To provide a continuous, local FireSmart program, delivered by local professionals with local knowledge and connections, to their community. Having a FireSmart Coordinator provides a lead person with dedicated time to coordinate, manage, and implement the program, especially as it grows. A FireSmart Youth Coordinator helps get the FireSmart message to Kaslo's youth, and they can take it home and discuss it with their friends.	Kaslo (RDCK)	Ongoing; Each CRI FCFS funding application	Kaslo's FireSmart program being managed by a local FireSmart Coordinator and Youth FireSmart Coordinator.	CRI FCFS up to cost maximums.
2	High	Continue to promote FireSmart to Kaslo residents at community events, public spaces, and through workshops using FireSmart branded material and printed manuals (Home and Landscaping) and/or a FireSmart Canada Community Preparedness Day. Show a united front by having local government, Kaslo VFD, and FireSmart coordinators at events together as much as possible.	Observed adherence and uptake of FireSmart principles on private property and many homes/structures in Kaslo is lacking. Landscaping (conifer hedges), firewood and combustible materials storage, and external building materials are the biggest issues. FireSmart BC resources help present a unified message. Print resources are popular and easy to distribute. Community FireSmart groups can apply for \$500 to fund their FireSmart Canada Community Preparedness Day events. If not done already, consider a FireSmart booth at the Kaslo Saturday Market.	Kaslo FireSmart Coordinator (RDCK; Kaslo VFD)	Annually	Quantity of resources distributed/number of times used at events.	CRI FCFS up to cost maximums.
3	High	Explore other information distribution mediums for getting the FireSmart message out to the community, such as a FireSmart social media campaign with updated FireSmart graphics and language (through various social media platforms like Facebook, Twitter, Instagram).	To promote FireSmart information to residents (and visitors). Include links to graphics, videos, pdf information/pamphlet downloads, etc.	Kaslo (RDCK)	Annually	An organized FireSmart social media campaign is delivered throughout RDCK.	CRI FCFS up to cost maximums.

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
4	High	Consider door-to-door knocks in identified high-risk interface neighbourhoods to discuss wildfire risk and FireSmart principles that they can apply to their home and property.	Kaslo had past success with door to door knocks to educate and interest residents in FireSmart. Having these done by Fire Chiefs, fire department personnel, and FireSmart Coordinators has also been successful in other communities.	Kaslo FireSmart Coordinator (Kaslo VFD)	2 years	All homes in these interface neighbourhoods have had at least one visit from the FireSmart Coordinator (with FireSmart information left at their door).	Kaslo VFD personnel time. CRI FCFS for FireSmart materials.
5	High	Kaslo municipal staff and the FireSmart Coordinator should seek out opportunities to collaborate with and educate local businesses, contractors, arborists, and landscapers on FireSmart.	An identified gap by Local Government in FireSmart programming. Could consider FireSmart pamphlets at Kaslo's gas station (for both residents and tourists), introducing arborists and landscapers to the FireSmart Landscaping Guide ³⁶ and FireSmart Plan Program. ³⁷	Kaslo FireSmart Coordinator/ Kaslo	2 years	Opportunities identified, developed, and implemented.	Staff time as required. CRI FCFS for FireSmart materials.
6	High	Continue to update Kaslo's FireSmart webpage with the most recent FireSmart graphics and language. Provide links to the current fire danger rating, or better yet, have that posted on the front of this page (making sure to keep it updated during the fire season).	To continue to provide to most recent and up to date FireSmart information, language, and principles to residents (and visitors).	Kaslo	Annually	Kaslo FireSmart webpage is showing current FireSmart information and graphics.	CRI FCFS up to cost maximums.

³⁶ chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://firesmartbc.ca/wp-content/uploads/2021/04/FireSmartBC_LandscapingGuide_Web_v2.pdf

³⁷ <https://firesmartbc.ca/landscaping-hub/plant-program/>

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
7	High	Continue to promote free FireSmart Home Ignition Zone assessments and/or Home Partners Program assessments to residents.	FireSmart Home Ignition zone and Home Partners Program assessments introduce residents to FireSmart, its principles, fire and wildfire risks associated with their home and property, and how they can be mitigated. These assessments are primarily an educational exercise, and can be funded completely through CRI FCFS. They are a requirement to qualify for the FireSmart rebate program (see Section 5.7).	Kaslo/RDCK	Ongoing; Each CRI FCFS funding application	FireSmart Home Ignition Zone assessments are being completed within Kaslo.	CRI FCFS up to cost maximums.
8	Moderate	Promote FireSmart in Kaslo schools using the FireSmart Education Kit and other resources. Consult ABCFP and BCWS to facilitate and recruit volunteer teachers and experts to help with in-person presentation.	Great success has been made through BC schools with FireSmart outreach. Engaging with the community's younger population may increase uptake with all residents. Opportunity to strengthen communication and collaboration with school staff and students, and homeschooling parents and students, and connect educators with these resources.	Kaslo / School District 8	Annually	One FireSmart lesson delivered each year (minimum).	CRI FCFS; e.g. FireSmart Magnetic Board for \$1,710.
9	Moderate	Make summaries of this Plan and associated maps publicly available through webpage, social media, and public FireSmart meetings.	To increase local knowledge of wildfire risk, wildfire threat, and risk reduction measures.	Kaslo (RDCK)	Once the report is adopted	CWRP is available for public access and viewing.	Staff time, as required.

5.3 LEGISLATION, PLANNING AND DEVELOPMENT CONSIDERATIONS

Legislation and planning regulation are effective tools for proactively reducing wildfire risk, although they can be less effective in small municipalities due to constraints leading to difficulties in enforcement. However, private property FireSmart Home Ignition Zone risk reduction is the most effective avenue towards homes and structures surviving a wildfire event. Section 2.2 provided a comprehensive look at local plans and bylaws that are currently in place and relevant to wildfire resilience in Kaslo. The most powerful influences that legislation and planning can have on local wildfire risk are through wildfire hazard Development Permit Areas (DPAs), to manage for risks associated with structure materials and landscaping, and open burning bylaws, to manage for risks associated with accidental fire ignition.

One of the priorities for recommendations within this Plan is to manage fire risk to structures within their Home Ignition Zones (i.e., within 30m of the structure and the structure itself). Kaslo's recently updated Official Community Plan (OCP) includes FireSmart principles throughout. Included in this, Kaslo established a Wildfire DPA to manage wildland-to-structure fire transfer (and vice versa), achieved through the application of FireSmart principles to exterior building materials and landscaping. However, as displayed on the DPA Map (OCP Section 20.0, Map C), it applies to only the north and south interface areas of the municipality. This leaves the majority of Kaslo at risk to ignitions from ember showers, as described in the opening paragraphs of this FireSmart Principles section. The BC Building Code, which to date manages room-to-room and structure-to-structure fire transmission, is currently being updated, with roll out planned for late-2024, and may include FireSmart standards. Kaslo should review and assess what FireSmart principles are included and compare them to the enacted Wildfire DPA – it is possible that the enacted DPA may need to be amended.

For consideration, to inform developments not included in the Wildfire DPA zones, Kaslo could include them under a Development Approval Information Area for wildfire within the OCP. When a building permit is submitted, information on the anticipated impact of a proposed activity or development on the community, including information regarding impacts on the natural environment of the area affected (this would include wildfire), are delivered to the property owner to be considered.³⁸ The information package should include all relevant FireSmart structure and landscaping Home Ignition Zone principles.

Kaslo's OCP also includes a Heritage & Commercial Core DPA. Local Government noted that this DPA's guidelines require updating for consistency with FireSmart principles.

Specific to bylaws, RDCK's Volunteer Fire Service Regulation Bylaw No. 2769, 2023 was recently implemented, however Kaslo's Fire Department bylaw (see Bylaw 1137) needs updating to align with RDCK's. Both are needed to allow for proper and consistent enforcement within Kaslo's WUI.

³⁸ <https://ltpm.ltsa.ca/484-development-approval-information>

Specific to plans and regulations, Kaslo has incorporated FireSmart principles into the 2021 Tree Planting Plan. However, there is also a Tree Planting Policy (2017) that does not align entirely with FireSmart principles – this Policy should be reviewed and amended, as required.

Part of development considerations is ensuring that all critical infrastructure (described in Section 3.3 and listed in Table 8) are constructed or brought up to a high FireSmart standard. Kaslo has been conducting critical infrastructure FireSmart Assessments on a priority basis for the past few years, and should continue to do so for those infrastructures that have not had one completed yet.³⁹ Importantly, Kaslo has begun implementing recommended structural and landscaping changes for some critical infrastructure (e.g., Kaslo City Hall, Seniors Hall). Retrofits and landscaping changes should continue for other critical infrastructure, as recommended, on a priority basis.

Additional development considerations are tied to emergency planning and response – if neighbourhoods are built in a way to allow for ease of access/egress, as well as access to the forest interface and water sources, people can evacuate more easily and fire responders can access and protect the neighbourhoods more easily. Kaslo should ensure that all new interface developments have access for evacuation and sufficient capacity for emergency vehicles.

Recommended changes to planning and development in Kaslo are detailed in Table 18.

³⁹ Completed FireSmart Assessments – 2020: Kaslo City Hall, seniors centre, day care, hospital, school, and other historic buildings and churches; 2021: facilities used for North Kootenay Lake Search and Rescue, communications infrastructure including utility poles, communication towers, bridges, pipeline valve stations, and other infrastructure identified through engagement with RDCK, Kaslo, Kaslo VFD and others; 2024 planned assessments include Water Treatment Plant, Sewer Treatment Plant, Public Works Yard, Hale Subdivision Pumphouse.

Table 18: Legislation, planning and development recommendation and action items

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
Legislation, Planning and Development - Section 5.3							
10	High	Upon the roll-out of the new BC Building Code in 2024, Kaslo should review and assess what FireSmart principles are included and compare them to the enacted Wildfire DPA – it is possible that the enacted DPA may need to be amended.	FireSmart construction and landscaping policies manage for wildland-to-structure fire transfer (and vice versa). Over time, resiliency will be built up at the interface and intermix areas.	Kaslo (Consultant)	Upon BC Building Code roll out	All new development complies with the policy.	CRI FCFS: up to \$10,700 available to apply to incremental staff hours or contract cost.
11	High	Kaslo should initiate a review and then update of the Heritage & Commercial Core DPA to incorporate FireSmart building materials, landscaping, and maintenance, as required.	Typically, heritage buildings are the least FireSmart and thus most vulnerable structures within a community.	Kaslo (Consultant)	3 years	Heritage & Commercial Core DPA has been reviewed and updated, as required.	CRI FCFS: up to \$10,700 available to apply to incremental staff hours or contract cost.
12	High	Update Kaslo’s Fire Department bylaw (see Bylaw 1137) so that it aligns with RDCK’s. Ensure powers are granted to the Fire Chief to allow them to enact, and enforce, a fire ban.	Both are needed to allow for proper and consistent enforcement within Kaslo’s WUI.	Kaslo (Consultant)	3 years	Bylaw 1137 has been reviewed and updated, as required.	CRI FCFS: up to \$10,700 available to apply to incremental staff hours or contract cost.
13	High	Kaslo should ensure that all new interface developments have access for evacuation and sufficient capacity for emergency vehicles.	Proper and safe egress/access (two routes is identified as the number one reduction to loss of life in an evacuation scenario) is paramount towards efficient evacuation and wildfire response.	Kaslo	Ongoing	all new interface developments have access for evacuation and sufficient capacity for emergency vehicles.	

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
14	High	Continue to conduct critical infrastructure FireSmart assessments for those that have not had one completed. Continue to implement recommended mitigation activities on a critical infrastructure priority sequence.	To reduce fire behavior and risks to critical infrastructure most important to fire and wildfire fighting and post-wildfire recovery.	Kaslo (RDCK)	Ongoing	High priority critical infrastructure are continuing to be assessed and have mitigation work completed as recommended.	CRI FCFS funding up to \$53,500 per municipal infrastructure (vegetation management included).
15	Moderate	Kaslo’s Tree Planting Policy does not align entirely with FireSmart principles – this Policy should be reviewed and amended, as required.	So Kaslo’s plans and policies reflect the most up to date FireSmart policies and align with each other.	Kaslo (Consultant)	3 years	Tree Planting Policy has been updated, as required.	CRI FCFS: up to \$10,700 available to apply to incremental staff hours or contract cost.
16	Moderate	Consider the development and implementation of an Interface Wildfire Hazard Development Application Information Area (AIA) that includes all rural and remote communities throughout the Electoral Area.	A wildfire AIA can be an effective option for local governments to encourage FireSmart principles in development and landscaping. Consider including information explaining and describing fire test standards of exterior building materials – as discussed and described in the NRC National Guide for Wildland-Urban Interface Fires, Section 3.3.	Kaslo (Consultant)	5 years	Wildfire AIA assessed for efficacy in Kaslo.	CRI FCFS: up to \$10,700 available to apply to incremental staff hours or contract cost.

5.4 INTERAGENCY COOPERATION

The goal of interagency cooperation is to approach wildfire resilience through a collaborative, multi-agency approach. This increases the ability of local governments to plan and respond to emergencies effectively, including facilitating training opportunities. Cooperation and communication are especially critical for Kaslo due to its isolation, partnership with the RDCK, and multiple land managers currently operating in its WUI. Landscape-level fire resilience cannot effectively be achieved without planning for resilience across jurisdictional boundaries. Engagement can be formal or informal and can take place through existing communication channels or stand-alone committees.

Kaslo has an existing FireSmart Committee, led by the FireSmart Coordinator, which currently includes members of the Kaslo VFD, the RDCK FireSmart Program, Village of Kaslo Public Works, BC Wildfire Service, Kaslo and District Community Forest Society, Kaslo Outdoor Recreation and Trails Society, and two Neighbourhood Champion representatives. Additionally, the FireSmart Coordinator should act as a liaison between established FireSmart committees within the surrounding area of Electoral Area D (e.g., Lardeau Valley FireSmart and Resiliency Committee, Woodbury FireSmart Committee), as well as relevant RDCK emergency preparedness committees. Collaborative opportunities may exist, and learnings can be shared as each committee works through their FireSmart programs.

When planning and implementing forest harvesting and fuel management treatments in the community and in adjacent forest tenures, a high-level tracking and communication of fuel treatments needs to occur. It is imperative that all land managers know what adjacent or overlapping jurisdictions have identified as fuel breaks, so that time and money is not wasted reassessing or re-prescribing an area. As Kaslo's eWUI is limited in area, and the surrounding communities and wildland directly affect Kaslo's wildfire risk profile, the Kaslo FireSmart Committee should develop a process for spatially tracking and managing proposed and completed fuel management/fuel break units in the greater Kaslo area that all members can access. Although RESULTS⁴⁰ is a powerful spatial tool to keep track of forest activities on the Provincial land base, it does not include activities on municipal and First Nations land. A separate spatial layer should be maintained by Ministry of Forests (MOF) as a public service using inputs from municipalities, First Nations, and forest licensees. Changes to the MOF Wildfire Risk Reduction program (which manages wildland fuel treatments on the Provincial land base) in the coming years may solve some of these problems.

The Kaslo and District Community Forest (KDCFS) and Woodlot 0494 have significant tenure within Kaslo's WUI. Forest activities can both increase and decrease wildfire risk in WUI areas and BCWS stated that Category 3 industry burning has led to fire starts and continues to be a concern every spring. Forest harvesting practices such as strategic cutblock placement, reducing post-harvest slash, providing loads of firewood to the public, and implementing fire management stocking standards as part of reforestation efforts can reduce wildfire behaviour for harvested areas within the WUI. KDCFS is proactive in wildfire risk reduction planning and mitigation efforts both within its WUI overlap area as well as outside it on the

⁴⁰ Government application that tracks silviculture information by managing the submission of openings, disturbances, silviculture activities and obligation declarations as required by the Forest and Range Practices Act.

greater landscape within its tenure, exemplified by the community forest implementing a landscape-level wildfire risk reduction plan. Potential synergies between that plan and this one should be reviewed and built upon.

Mutual aid agreements exist between BCWS and RDCK fire services. This is captured in the MEMORANDUM OF AGREEMENT for INTER-AGENCY OPERATIONAL PROCEDURES AND REIMBURSEMENT RATES between the Fire Chief's Association of BC and the BC Wildfire Service. The Kaslo VFD Fire Chief participates in an annual Zone 4 Fire Chiefs meeting that includes BCWS representatives to ensure wildfire emergency pre-organization is in place, policy changes are discussed, and opportunities to improve mutual aid for fire response are capitalized on.⁴¹

Discussed in Section 3.3, transmission lines can provide excellent fuel breaks and access for first responders in the event of a wildfire – if the vegetation on them is regularly managed and kept in a low-hazard state. They can also be the source of fire ignitions - trees and other vegetation intruding into power lines can cause fires in multiple ways. Kaslo VFD noted that there were two recent power line related fire ignitions in Mirror Lake (south of Kaslo); had they happened in summer, they could have caused significant wildfires as they were at the base of a forested slope. Highways can also provide excellent fuel breaks if the vegetation on them is regularly managed and kept in a low-hazard state. If not, they can act as wicks moving fire along them, or ignition sources for fires from burning cars, cigarette butts, etc. Additionally, highways are a main access/egress route during an emergency – these routes should be kept at as low risk of state as possible.

Table 19 details Interagency Cooperation recommendations for Kaslo.

⁴¹ Information gathered from BCWS questionnaire as part of the development of this Plan.

Table 19: Interagency cooperation recommendation and action items

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
Interagency Cooperation - Section 5.4							
17	High	Continue the established Kaslo FireSmart Committee to plan, implement, and coordinate local FireSmart initiatives, including fuel management treatments.	To provide a platform for information sharing across agencies and stakeholders, allowing for greater management of wildfire risk both within and surrounding Kaslo's WUI.	Kaslo FireSmart Committee	Ongoing	Committee meetings take place at least once annually.	At least 8 hours per meeting to prepare, participate and debrief. CRI FCFS up to \$2,000 per meeting.
18	High	Kaslo's FireSmart Coordinator should seek opportunities to liaison with other local FireSmart Committees, First Nations, and RDCK emergency planners. Seek to include members of Kaslo VFD and BCWS wherever possible. Additional collaborative opportunities could include ones with J.V. Humphries Elementary (see recommendation #8), Kaslo and Area Youth Centre, Kaslo Outdoor Recreation and Trails Society, Kaslo Mountain Bike Club, Kaslo and District Public Library (via the FireSmart BC Library Program ⁴²), and local businesses (e.g., nurseries/garden companies via the FireSmart Plant Program ⁴³).	To strengthen interagency relationships in the community, involve Kaslo's FireSmart Coordinator in RDCK Emergency Programs, and support further FireSmart education opportunities.	Kaslo FireSmart Coordinator (Stakeholders / RDCK)	Ongoing	FireSmart Coordinator is expanding local interagency cooperation.	Internal time/cost depending on level of effort.
19	High	Work with RDCK, MOF, BCWS to develop a fuel treatment/fuel break tracking system to spatially manage proposed and completed fuel management areas both within Kaslo's WUI and outside it at the regional level.	It is imperative that all land managers know what adjacent or overlapping jurisdictions have identified as fuel breaks, so that time and money is not wasted reassessing or re-prescribing an area.	Kaslo FireSmart Coordinator / RDCK / MOF / BCWS	As soon as possible	A regional GIS tracking system is established, or a provincial one is developed that all land managers can access.	Cost and time dependent upon level of effort required.

⁴² <https://firesmartbc.ca/resource/firesmart-bc-library-program/>

⁴³ <https://firesmartbc.ca/landscaping-hub/plant-program/>

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
20	High	Lobby forest licensee/managers (e.g., Woodlot 0494, Kaslo and District Community Forest) to be aware of where their tenure overlaps Kaslo’s WUI and to develop and implement (or continue implementing) forest planning, harvesting, slash management, and reforestation plans that reduce wildfire behaviour in these areas.	Cutblock placement can break up the forest continuity across the landscape – with proper slash and reforestation management, they can remain as areas of low wildfire behaviour for many years. However, if not managed properly, they can increase wildfire behaviour. Kaslo/RDCK elected officials and community members are, and have been, active in this already.	Kaslo / RDCK / MOF / Forest Licensees and Managers / Local Government elected officials/ Community members	Ongoing	Forest licensees/ managers are aware of their tenure overlaps with the WUI and are actively working towards forest management plans to reduce wildfire behaviour in those areas.	Kaslo and RDCK staff, elected officials, community members, and stakeholders time for discussions.
21	Moderate	Lobby and work with the electrical power providers in and influencing the community’s WUI, and MOTI for Provincial highways, to regularly maintain their right-of-way’s vegetation.	Transmission lines can provide excellent fuel breaks and access for first responders in the event of a wildfire – if the vegetation on them is regularly managed and kept in a low-hazard state. They can also be the source of fire ignitions - trees and other vegetation intruding into power lines can cause fires in multiple ways. Highways can also provide excellent fuel breaks if the vegetation on them is regularly managed and kept in a low-hazard state. If not, they can act as wicks moving fire along them, or ignition sources for fires from burning cars, cigarette butts, etc. Additionally, highways are a main access/egress route during an emergency – these routes should be kept at as low risk of state as possible.	Kaslo / RDCK (MOTI; Electrical Providers)	Yearly and ongoing	Right-of-way maintenance discussions are open and ongoing; right-of-ways are kept in low-risk states.	Kaslo and RDCK staff, elected officials, and stakeholders for discussions.

5.5 CROSS-TRAINING AND FIRE DEPARTMENT RESOURCES

All staff and agency partners who are expected to participate in the development and implementation of this plan, or participate in a wildfire response and recovery, should be appropriately trained. This includes municipal Emergency Management staff, other municipal staff that could play a role in an Emergency Operations Center (EOC), and Kaslo VFD, and FireSmart personnel. Training opportunities include:

- Basic Wildland Fire Suppression and Safety
- Incident Command System
- FireSmart 101
- FireSmart Local FireSmart Representative (LFR)
- FireSmart Community Champion
- FireSmart Home Partners Wildfire Mitigation Specialist (WMS)
- Post-wildfire reclamation and recovery
- Post-wildfire structure damage assessment
- BC Structure Protection Program (WSPP-115)

Regular in-person cross-training between agencies is imperative for familiarization with each other's equipment and to address any incompatibilities. Kaslo VFD noted that Prior to COVID, BCWS would come to the hall every 2 years for a classroom training session with the department.⁴⁴ Additionally, valuable training through experience can be acquired from being deployed to wildfires. Under the Fire Chiefs' Association of BC and BC Wildfire Service MEMORANDUM OF AGREEMENT for INTER-AGENCY OPERATIONAL PROCEDURES AND REIMBURSEMENT RATES, fire departments (including the Kaslo VFD) routinely work with BCWS in response to incidents within and outside of Fire Protection and Response Areas.⁴⁵

Kaslo VFD is currently comprised of paid-on-call members with one fire chief and 16 firefighters (which includes six new recruits currently undergoing training), and the Fire Chief noted the Department is understaffed and recruiting new staff is a significant constraint. As such, the Department focuses primarily on exterior and interior fire service levels as defined by the BC OFC Structural Firefighters Playbook. It practices weekly, and additionally as needed and possible with the volunteers' schedules. The Department is trying to do more mutual aid training with Balfour/Harrop VFD, but noted that scheduling is difficult as current training schedules are different. To help aid in staff recruitment, the Department is looking to start up its Junior Firefighter program again for youths aged 16-18.

The following list highlights wildland-specific training levels, FireSmart training, and equipment in Kaslo VFD:

⁴⁴ Information gathered from Kaslo VFD questionnaire as part of the development of this Plan.

⁴⁵ As was the case in 2022 when the Kaslo and Area Fire Department supported BCWS on the Briggs Creek Fire in Keen Creek.

Wildland Training

- SPP-WFF1: all persons (required)
- WSPP-115: required if wanting to go on SPU deployment
- Local FireSmart Representative (LFT): 3 persons

Wildland Equipment

- Rescue 491 command vehicle
- Portable pumps: 1 Wajax, 1 Honda Striker, 1 trash pump
- Hoses: approximately 40 x 50' 1.5", 40 x 50' econoline
- Sprinklers: 25 to 30
- Personal Protective Equipment: 15 sets
- Engine 492: 1500 US gallon portable pond
- Tender 491: 1000 gallon portable pond

Water is the most important resource for fighting wildland and structure fires. Kaslo's water supply and fire hydrant system (both discussed in Section 3.3.2) were noted as generally being sufficient. However, water availability in Kaslo during the fire season can become strained by local drought conditions resulting in water restrictions. A water supply water vulnerability assessment of the McDonald Creek watershed was completed by Fire and Flood Emergency Services Ltd. in 2023; however, Local Government recognizes that continuing analyses are required to supply Kaslo with a more detailed analysis of risk and recommendations. The analyses should consider additional back-up water sources and others that could supply additional standpipes at strategic locations for fire response.

Natural water sources are another valuable source of water that can be used for wildfire fighting. Kootenay Lake has water available year-round, and some local sources (ponds, lakes, etc.) were mapped as part of the 2021 FireSmart program. Kaslo VFD noted that the mapping of natural water sources needs improvement as they mostly rely on local knowledge. Developing GIS water source and access data allows it to be shared with BCWS quickly and easily in the event of a serious event. The data does not need to be made publicly available (which could also protect sources on private property). A local example of community-led water development for wildfire fighting was initiated in 2020 by the Argenta Emergency Preparedness Group (AEPG). They began a water mapping project (with assistance from a Selkirk College student), which received additional support in 2023 from Living Lakes. With a goal creating quick access to valuable information for fire response (local and BCWS), a focus has been on available water sources:

- Over 30 locations have been GPS'd where a fire pump could be quickly set up, including photos and access information and detailed information about each site.
- Existing standpipes with fire hose fittings were detailed in a similar fashion, noting water pressure and pipe sizes.

Table 20 lists recommendations for Kaslo and Kaslo VFD related to cross-training and fire department resources.

Table 20: Cross-training recommendation and action items

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
Cross Training & Fire Department Resources - Section 5.5							
Training							
22	High	Kaslo VFD and Kaslo municipal emergency staff, with support from RDCK, should conduct annual mutual aid training with MOF and BCWS using hydrants, standpipes, and natural water sources, <i>and including completion of a mock wildfire simulation</i> in coordination with BCWS and safety training specific to wildland fire and risks inherent with natural areas.	To increase efficiencies in wildfire response within Kaslo’s WUI. Regular in-person cross-training between BCWS is imperative for familiarization with each other’s equipment and to address any incompatibilities.	Kaslo / RDCK (Kaslo VFD, BCWS, MOF)	Annually	Mutual aid training and a mock wildfire simulation exercise are both conducted at least once every two years.	Staff time and cost depending on level of effort.
23	High	Support FireSmart specific training to Kaslo VFD and relevant municipal staff. Examples include: Incident Command Systems, FireSmart 101, Local FireSmart Representative (LFR), and FireSmart Home Partners Mitigation Specialists.	To continue building an understanding and knowledge of FireSmart principles within fire response personnel and the community. To certify fire response members so they can implement various FireSmart assessments within the community. Note: FireSmart Coordinator, FireSmart Youth Coordinator, and some Kaslo VFD members are trained LFR’s.	Kaslo / RDCK (Kaslo VFD)	Annually, as needed	Required staff/ personnel have needed training.	CRI FCFS: staff time and course cost (ICS-100 \$25 online).
24	High	RDCK should continue to provide wildfire specific training to Kaslo VFD. Examples include: WSPP-115, SPP-WFF1, Engine Boss (S-230), and Structural Protection Systems.	To build Kaslo VFD’s wildfire response knowledge and capabilities.	RDCK (Kaslo, Kaslo VFD)	Annually, as needed	Required personnel have needed training.	CRI FCFS: staff time and course costs.
26	Moderate	Kaslo’s FireSmart Coordinator (and/or other relevant staff member or Kaslo VFD Fire Chief) should attend (annually) the FireSmart BC Wildfire Resiliency and Training Summit.	The Summit explores the lessons learned from previous years, along with the latest research, technologies, best practices, and other information to help regions and communities prepare for the upcoming wildfire season.	Kaslo FireSmart Coordinator (Kaslo staff; Kaslo VFD)	Annually	A Kaslo representative is at the FireSmart Summit annually.	CRI FCFS: time and expenses up to \$2000 per person.
Water							

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
27	High	Complete additional fire flow / water vulnerability assessments for the Kaslo municipal water system and identify and map all alternative water sources (reservoirs, streams, lakes, etc.). Identify which areas may have insufficient or unreliable water supplies and provide recommendations to reduce vulnerability in Kaslo. Explore collaboration with other agencies including Columbia Basin Trust, Ministry of Environment, Ministry of Transportation and Infrastructure and Interior Health Authority.	To further identify constraints, provide recommendations, and implement solutions for increasing water supply to Kaslo VFD and BCWS fire and wildfire response personnel. Although there are hydrants within Kaslo, natural water sources may be closer to a fire. Shuttling or pumping water from lakes and rivers to fill bladders can be pre-planned, including tender access points, traffic control, permanent large-volume pumps, and piping.	RDCK GIS department/ Kaslo VFD / Kaslo FireSmart Coordinator (BCWS, MOF, Stakeholders)	5 years and ongoing	Assessments completed.	CRI FCFS Community Water Delivery Assessment funding available for incremental staff hours or contract cost. Potential funding through UBCM's Community Emergency Preparedness Fund.
28	High	[In coordination with Recommendation #27] Develop alternative, back-up water sources for fire protection, including determining the suitability of the MacDonald Creek water reservoir, and the establishment of standpipes as required.				Alternative water sources identified. Plans for development being discussed.	
29	High	[In coordination with Recommendations #27 and #28] Create digital data/maps of alternative water sources. The maps/data can be uploaded into response vehicles' CAD systems, shared with BCWS response personnel, as well as included in the pre-planning of emergency community water delivery systems connecting major natural water sources with interface neighbourhoods to facilitate deployment of a structural protection system. Include important details such as: estimated water volume and access point notes. Share this information to all mutual aid fire response partners, and update over time.				A fire suppression water source plan and map and digital data are produced and shared.	

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
30	Moderate	Kaslo VFD should seek (or continue to uphold, if accredited already) Superior Tanker Shuttle Service accreditation from Fire Underwriters Survey.	This accreditation certifies that the fire department can supply enough water to have some areas without fire hydrants within a certain distance of their structures qualify as having a fire hydrant within 300m of it (this can also potentially lower insurance rates for property owners within Kaslo (and surrounding fire response areas). Note: this does not increase the overall water supply already available under automatic and mutual aid agreements.	Kaslo VFD / RDCK	5 years	Superior Tanker Shuttle Service accreditation achieved by Kaslo VFD.	Fire department staff time as required (and RDCK budget for equipment upgrades and purchases, if needed).
Equipment							
31	High	In coordination with Recommendation #22, Kaslo VFD should conduct regular inspections by BCWS of their wildland firefighting equipment. Any gaps should be addressed, as required.	Kaslo VFD noted that their wildland equipment has never been inspected by BCWS. To ensure proper equipment is available to respond to interface wildfire events, and that equipment is compatible with BCWS's. CRI FCFS funding is available for incremental equipment purchases.	Kaslo VFD / RDCK / BCWS	Annually	Annual inspection of wildland firefighting equipment from BCWS; gaps filled as practicable.	Fire department and RDCK staff time; CRI FCFS equipment funding up to cost maximums.

5.6 EMERGENCY PLANNING

Local government and community preparations for a wildfire emergency are very important. Plans, mutual aid agreements, resources, training, and emergency communications systems make for effective wildfire response and recovery from a wildfire event. Kaslo participates in the RDCK's emergency management program, but Local Government noted that the division of responsibility between the RDCK and municipality is not always clear. This is an important gap that should be addressed. Also, Kaslo VFD has an automatic aid agreement for structure fires in the Kaslo fire protection area with the Balfour/Harrop VFD, and they both provide mutual fire response to the Ainsworth and Woodbury Village areas. Kaslo VFD noted that mutual aid is used about once every three to four years.

Clear, consistent, concise, and quick communication during an emergency event and evacuation are integral to the prevention of loss of life. The RDCK has upgraded to a new notification system for emergency alerts and water advisories powered by "Voyent Alert!". Downloadable as an app to a smart phone, the user can receive a detailed map of the affected area. The system also supports text messaging, emails, or landline calls. Kaslo should promote this notification to residents as much as possible.

Additionally, it was noted during field assessments and echoed in meetings with local government and first responders that there is a pervasive lack of visible, reflective addresses for properties within Kaslo (e.g., lowest block of D Avenue). Addresses are one of the most common forms of providing first responders directions of where to respond to. This issue should be made aware to the public with examples and options of proper signage. Kaslo is acting on this with an on-going signage program.

A pre-incident plan is a compilation of essential fire management information needed to save valuable time during fire suppression operations. During a busy wildfire season, Provincial resources are often stretched thin, and any information that local governments can provide to BCWS crews is helpful. A pre-incident plan should be developed and tested using tabletop simulations (or even better, in-person on the ground exercises), and if necessary, revised prior to every fire season. BCWS should be involved in this process to ensure that any mapping done as part of the pre-incident plan or Fire Management Planning process is not unnecessarily duplicated. As part plan development, the completion of emergency planning zones for interface neighbourhoods should be included, using WUI Risk and Wildfire Threat analyses from the most recent/updated CWRP. Also, practice implementing emergency response and evacuation plans is the only way to ensure their effectiveness and to identify pinch-points/errors to be resolved. Kaslo performed a mock evacuation in 2015 or 2016 in concert with Kaslo VFD, Emergency Support Services, BC ambulance, and RCMP, where a small area of downtown was physically evacuated. Kaslo VFD has noted it would be valuable to do another again.

Figure 5 contains a checklist of discussion points and considerations during pre-incident plan development, which could be done in coordination with RDCK.



Figure 5. A pre-incident planning checklist that can be used to help develop a pre-incident wildfire suppression plan and associated maps.

Kaslo, in coordination with RDCK, could also consider developing local daily action guidelines based on expected wildfire conditions. Table 21 below provides a template that can be tailored specifically to Kaslo/RDCK, outlining actions staff can take as fire danger levels change throughout the fire season.

Table 21: Example of a Wildfire Response Preparedness Condition Guide⁴⁶

FIRE DANGER LEVEL	ACTION GUIDELINES
LOW	<ul style="list-style-type: none"> All staff on normal shifts.
MODERATE	<ul style="list-style-type: none"> All staff on normal shifts. Information gathering and dissemination through Wildfire Resiliency Committees.
HIGH	<ul style="list-style-type: none"> All staff on normal shifts. Regional fire situation evaluated. Daily fire behavior advisory issued. Wildland fire-trained Municipal staff and EOC staff notified of Fire Danger Level. Establish weekly communications with Wildfire Resiliency Committees.
EXTREME	<ul style="list-style-type: none"> Daily fire behavior advisory issued. Regional fire situation evaluated. EOC staff considered for stand-by. Wildfire Incident Command Team members considered for stand-by/extended shifts. Designated staff: water tender and heavy machinery operators, arborists may be considered for stand-by/extended shifts. Consider initiating Natural Area closures to align with regional situation. Provide regular updates to media / Municipal staff on fire situation. Update public websites and Kaslo social media as new information changes. Continue weekly communications with Wildfire Resiliency Committees.
FIRE(S) ONGOING	<ul style="list-style-type: none"> All conditions apply as for 'Extreme' (regardless of actual fire danger rating). Mobilize EOC support if evacuation is possible, or fire event requires additional support. Mobilize Wildfire Incident Command Team under the direction of the Fire Chief/BCWS. Implement Evacuation Alerts and Orders based on fire behavior prediction and under the direction of the Fire Chief/BCWS.

Emergency planning also includes post-wildfire recovery. As discussed in Section 3.3.1, having secondary power sources for critical infrastructure is important to reduce community vulnerability in the event of an emergency that cuts power for days, or even weeks. Kaslo’s water treatment plant, sewage treatment plant, the Kemball Building, Fire Hall, Hospital, and School all have back up diesel generators, and Kaslo has plans to assess and purchase more, as practicable. An identified constraint for when the generators are in use during a wildfire event would be keeping them running to maintain potable water. However, Kaslo’s main water intake’s filtration system can be bypassed – if trained personnel are available to do so in time. If operating on backup water intake without power, a generator is required. Additional post-wildfire recovery considerations include completing detailed hazard assessments and response plans for stabilization and rehabilitation of burn areas, especially in watersheds that are vulnerable to post-wildfire

⁴⁶ From FireSmart Community Funding and Supports 2022 CWRP Supplemental Instruction Guide

debris flows and floods and steep slopes above structures and values (such as in the north area of Kaslo's WUI).

Roof top and gutter-mounted sprinklers are a useful tool that can be easily stored and then set up, as needed, by individual homeowners (if they have the required water availability). BCWS can also link their water systems to them to support their firefighting efforts. Three main mounting types exist: temporary mounted sprinklers (fully removable), permanently mounted sprinklers, and permanent sprinkler mounts that sprinklers can then be attached/removed from. There are benefits and disadvantages to all, especially as structures can differ significantly from one another. Local Government and community organizations can spearhead the acquisition and planning of sprinklers and structure protection units (SPUs) themselves, moving the planning and organization off the individual homeowner and increasing community wildfire resiliency. Additionally, there can be cost savings in bulk orders. This was accomplished recently (2022/23) by the Lardeau Fire Prevention Association with support from Columbia Basin Trust. The Association has developed a Structure Sprinkler Protection Program with an operational SPU that can deploy sprinkler protection to each of the over 60 properties within the Community. However and importantly, water availability assessments and delivery planning (which can be done at the neighbourhood level) should be completed first to ensure efficacy and practicability.

RDCK has two Type 2 sprinkler protection units (SPUs) which are regional assets, and firefighters from all 16 RDCK supported fire departments that can be deployed as needed. One SPU is (generally) stationed at the Kaslo VFD hall. It should be noted that under the interagency agreement, when the SPUs are needed, they are requested by the local authority for use within a fire protection area and by BCWS for use outside of the fire protection area. Regardless of the requestor, they are sourced by BCWS. The cost of deployment is reimbursed by the Province. BCWS may or may not opt to use local SPUs to be deployed to a fire.

Recommendations and action items that Kaslo can implement to continue productive and effective emergency planning are detailed below in Table 22.

Table 22: Emergency preparedness recommendation and action items

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
<i>Emergency Planning - Section 5.6</i>							
32	High	If not done so already, in coordination with RDCK (and potentially BCWS), develop and action a Wildfire Response Preparedness Condition Guide (Table 21) and a Pre-Incident Planning Checklist (Figure 5). Tailor these to Kaslo's and RDCK's specific structures.	To guide risk management primarily during times of High and Extreme wildfire danger rating levels.	Kaslo / RDCK (BCWS)	5 years	A Wildfire Response Preparedness Condition Guide has been developed.	CRI FCFS Emergency Planning funds available.
33	High	Plan and conduct tabletop and real-world emergency response and evacuation drills, incorporating a wildfire emergency. If developed, use the developed Wildfire Response Preparedness Condition Guide and Pre-Incident Planning Checklist. Identify errors and pinch-points, and develop solutions.	Kaslo VFD noted that it has been almost 10 years since the last real-world drill was completed. Doing another would prepare both staff, residents, and stakeholders for an emergency and evacuation.	Kaslo (Wildfire response and emergency agencies and stakeholders)	3 years	A tabletop drill has been completed. Aim for alternating years of tabletop and real-world.	CRI FCFS Emergency Planning funds available.
34	High	[In conjunction with Recommendation #32] Clarify the division of responsibility between the RDCK and Kaslo in wildfire and emergency planning and response.	So efficient wildfire and emergency planning can be completed and actioned when needed.	Kaslo / RDCK	5 Years	Division of responsibility between the RDCK and Kaslo is clarified.	Internal staff time, as required.

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
35	High	[In conjunction with Recommendation #32, and utilizing information from Recommendations #27-29] Pre-plan emergency community water delivery systems to connect major natural water sources with interface communities/structures to facilitate deployment of a structural protection system.	Natural water bodies and streams/creeks can be used to draw water from in the event of a wildfire. Shuttling or pumping water from lakes and rivers to fill bladders may be planned, including access points, permanent large-volume pumps, permanent cisterns/reservoirs, and piping.	Kaslo / RDCK	After completion of Recommendations #27-29.	Assess community water delivery for each neighbourhood. Develop and test neighbourhood specific plans.	CRI: Assessment of Community Water Delivery Ability - incremental staff hours or contract cost.
36	High	Kaslo should continue to promote the Voyent Alert! System to residents and visitors.	Clear, consistent, concise, and quick communication during an emergency event and evacuation are integral to the prevention of loss of life. A lack of this was identified as an issue during recent WUI fire disasters, such as that in Lahaina, Maui, USA and Fort McMurray, Alberta.	Kaslo (FireSmart Coordinator)	Ongoing	Continued update of the Voyent Alert! System (can track downloads from app providers).	Kaslo for promotion.
37	High	Schedule regular updates of this Community Wildfire Resiliency Plan: target every 5 years.	A current and acceptable CWRP is required for funding under the CRI FCFS program. Update the wildfire threat for areas with completed fuel treatments and identify additional areas for treatment.	Kaslo	5 years – 2028 update	Kaslo always has a current and acceptable CWRP.	~\$32,000; CRI FCFS funding
38	Moderate	Continue to identify critical infrastructure that require back-up power and then facilitate the purchase and installing of back-up power sources, on a priority basis.	To facilitate recovery from a wildfire (and other) disaster.	Kaslo	Ongoing	Kaslo is installing back-up power to critical infrastructure, as practicable.	Potential funding through UBCM's Community Emergency Preparedness Fund.

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric for Success	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
39	Moderate	Utilizing information from completed fire flow / water vulnerability assessments (Recommendation #27), and the results of Recommendations #28 and #29, explore if a roof-top sprinkler program for residential properties is possible. If so, investigate bulk orders from wildfire protection or irrigation companies or commercial gutter-mount kits. Consider sprinkler kits as an incentive to neighbourhoods for FireSmart participation.	Pre-installed rooftop sprinklers reduce the time and resources needed to set up a structural protection system in a community threatened by wildfire. Sprinkler installation could be paired with a free FireSmart Assessment.	Kaslo (RDCK)	After completion of Recommendations #27-29.	Practicability of a roof-top sprinkler program for residential properties is determined.	Bulk sprinklers \$40 - \$100 each; gutter mount kits ~\$100-200 for one home.
40	Moderate	Complete more detailed hazard assessments and developing response plans for stabilization and rehabilitation of burn areas in watersheds or steep slope areas that are vulnerable to post-wildfire debris flows and floods.	To facilitate recovery from a wildfire (and other) disaster.	Kaslo (RDCK, MOF, MOE)	5 years	Post-wildfire slope stabilization plan funds for development have been identified and applied for.	Potential funding through UBCM's Community Emergency Preparedness Fund.

5.7 VEGETATION MANAGEMENT AND OTHER FIRESMART ACTIVITIES

As discussed in Section 4.1, fuel is the only aspect of the fire behavior triangle that can be realistically modified to reduce wildfire threat. Fuel or vegetation management reduces potential wildfire intensity and ember, flame, and radiant heat exposure to people, structures, and other values through manipulation of both natural and cultivated vegetation within or adjacent to a community. A well-planned vegetation management strategy can greatly increase first responder safety, fire suppression effectiveness, and reduce damage to property and to values.

Vegetation management can largely be accomplished through two different activities:

1. **Residential-scale FireSmart landscaping:** The removal, reduction, or conversion of flammable [landscaping] plants to create more fire-resistant areas in the FireSmart Immediate, Intermediate, and Extended Zones (i.e., the area within 30m from a structure).



Figure 6: FireSmart Home Ignition Zone

2. **Fuel management treatments:** The manipulation or reduction of living or dead forest and grassland fuels to reduce the rate of spread and head fire intensity and enhance likelihood of successful suppression.

Fuel Management Units

Fuel management treatments may function as fuel breaks (linear features, at least 1 km in length) or polygon treatments for discrete areas. The intent of establishing fuel treatments is to modify fire behaviour and should be designed to keep surface fires on the ground to avoid the establishment of more

dangerous and uncontrollable crown fires. Fuel treatments can also provide anchor points to fire-fighting crews for suppression activities,⁴⁷ yet the application of appropriate suppression tactics in a timely manner with sufficient resources is essential for fuel treatments to be effective – fuel treatments adjacent to a home or property should not be considered a “fire break”. Thus, to increase the efficacy of fuel treatments, FireSmart standards should be applied on nearby private properties to structures and vegetation to reduce the risk of structure ignition. Fuel treatment units will also require periodic maintenance (e.g., brushing, prescribed burning, surface fuel cleanup) to retain their effectiveness.

Implementing fuel management treatments often requires the successful collaboration of various land managers, as these treatment areas can span across multiple types of land ownership. Often, this is required for the fuel treatment to effectively connect areas of low hazard, or to be a cohesively effective area. A significant amount of public land within Kaslo’s WUI is Crown Provincial land managed by (KDCFS) and Woodlot 0494. Fuel management projects in community forests are currently funded and administered through the Forest Enhancement Society of BC (FESBC), while those on Crown land are funded and administered through the CRI FCFS or BCWS Crown Land Wildfire Risk Reduction (CLWRR) program, depending on certain parameters.

Fuel treatment units can provide excellent opportunities for collaboration and relationship building with local First Nations. Engaging First Nations’ knowledge keepers to both learn about, and the possibility of incorporating, cultural burning into vegetation management and risk reduction plans should be strongly considered by those involved in the prescription development and implementation of Fuel Treatment Units proposed within this plan and already existing from other plans.

Three newly identified Fuel Treatment Units (PTU) are proposed as part of this Plan (Table 24; Map 8). They are in areas with identified High and Extreme Wildfire Threat and associated WUI Risk polygons. Additionally, they will complement the many already completed fuel treatments, planned fuel treatments, and areas under or planned to be under fuel treatment prescription through previous CRI FCFS grants/projects (listed in Table 25; also shown on Map 8) within Kaslo’s WUI and municipal boundary. Priority level for prescription and treatment (High, Moderate, Low) of proposed PTUs is given to each and is based upon a combination of site-level risks that include wildfire behaviour threat, strategic location, proximity to structures and critical infrastructure, and location relative to dominant fire-season wind directions. Importantly, increasing the wildfire resilience of Kaslo can only be efficiently achieved by performing residential-scale FireSmart activities on private land.

Residential-scale FireSmart Landscaping

A major barrier to implementing FireSmart vegetation management on private property is if there is no easy disposal process for the created vegetative debris. This can be further exacerbated when the demographics of the community are older (such as with Kaslo – 40% of residents are over the age of 65) and/or costs are prohibitive. Kaslo provides municipal yard waste pick-up twice a year. Additionally, the Kaslo Landfill (operated by RDCK) accepts yard and garden waste for payment – however, there is no

⁴⁷ BC Wildfire Service. (2022). [2022 Fuel Management Prescription Guidance](#).

charge during the months of May and October.⁴⁸ The FCFS program can make funds available for residential yard waste disposal. In 2022, Kaslo received funds to do so, developed a plan, and completed about 50% that was budgeted for.

Other Residential-scale FireSmart Activities

➤ ***FireSmart Canada Neighbourhood Recognition Program***

The FireSmart Canada Neighbourhood Recognition Program (FCNRP) is a unique approach to collaboratively reduce a neighbourhood's risk to wildfire through education and events. It is run nationally through FireSmart Canada and facilitated locally by the RDCK. It is a grassroots, volunteer run program that is assisted by RDCK Wildfire Mitigation Specialists. It is a small-scale approach for neighbourhoods consisting of 5-50 homes, with the intent to implement achievable FireSmart goals (mitigation projects can be small and simple, or complex and extensive, ranging from individual owners doing around home clean-ups, to community hand treatments on common and private land near critical infrastructure). Neighbourhoods within Kaslo that are or are working towards this recognition were previously identified in the Section 5.1; Kaslo's FireSmart Coordinator and Committee should continue to support their work towards this status while also identifying new neighbourhood champions to take up the program for additional neighbourhoods.

➤ ***FireSmart Home Partners Program***

The FireSmart Home Partners Program (HPP) is a collaboration between FireSmart BC, local governments, Indigenous communities, the private sector, and residents in BC. It was designed to engage residents in voluntary wildfire mitigation activities by offering a professional home assessment with property-specific recommendations – these assessments are completed by professionals with structure and wildfire mitigation risk reduction training and are more detailed and specific than FireSmart Home Ignition Zone assessments (which are primarily an education tool). Kaslo, in collaboration with RDCK, has been offering the HPP since 2020. In 2023, 31 assessments were completed.

➤ ***FireSmart Rebate Program***

To aid in residential-scale vegetation management and structure improvements, this program allows for residents that have had a completed FireSmart assessment (Home Ignition Zone or Home Partners Program) receive a rebate (using recorded expenses) for work completed to lower risk identified in their assessment. Kaslo has offered this program 2022 with a combined 20 rebates submitted in the last two years. Starting in the 2024 CRI FCFS program, the eligible amount of rebate per property is now \$5000. Kaslo, in conjunction with RDCK, has implemented the rebate program in previous years, and should continue to do so.

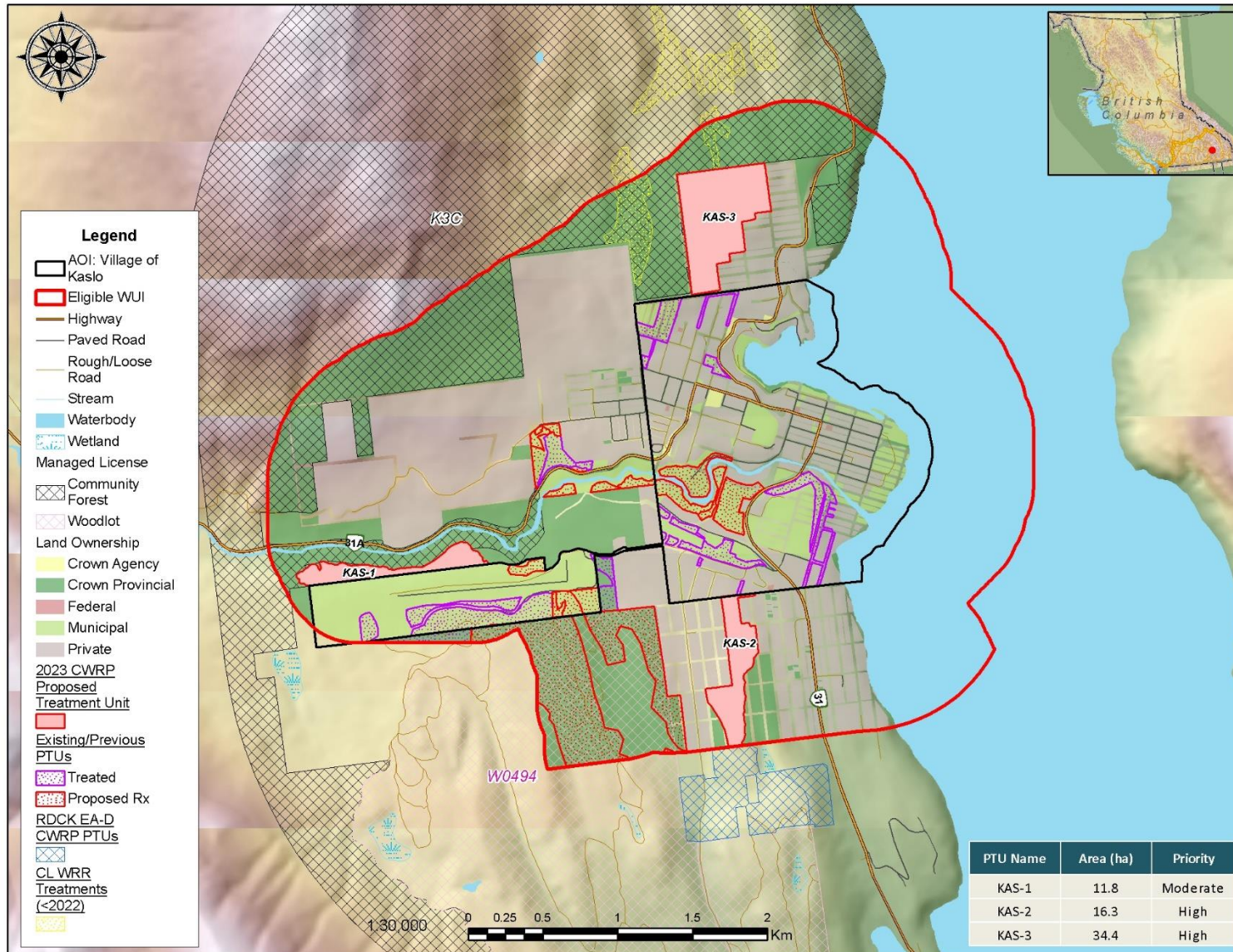
Associated vegetation management recommendations and action items are listed in Table 23.

⁴⁸ <https://www.rdck.ca/EN/main/services/waste-recycling/household-hazardous-waste-round-up/yard-garden-waste-free-tipping.html>

Table 23: Vegetation management action items

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric Success for	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)			
Vegetation Management - Section 5.7							
Fuel Management Treatments							
41	High	Develop fuel management prescriptions for the identified Potential Fuel Treatment Units (PTUs), starting with those identified as High priority. Treatment priority of all prescribed/proposed PTUs (as shown on Map 8 and detailed in Table 24 and Table 25) is recommended to be done from a values-out sequence (i.e., starting with those closest to/ within Kaslo’s developed areas, then moving outwards).	To reduce wildfire threat and risk to Kaslo. Also, to provide FireSmart vegetation management examples to the public that can be implemented on their own properties. See “Rationale” column in Table 24 for more detailed treatment rationales.	Kaslo FireSmart Coordinator / BCWS / applicable forest licensees	Ongoing	Prescriptions and treatments are continuing to be completed on a priority basis.	CRI FCFS funding available for prescription and treatments; ~\$425/hectare for a ~20 ha prescription.
42	High	Engage (or request that those involved in the prescription development and implementation of Fuel Treatment Units proposed within this plan and already existing from other plans do so) local First Nations to both learn about, and the possibility of incorporating, cultural burning into vegetation management and risk reduction plans.	Fuel treatment units can provide excellent opportunities for collaboration and relationship building with local First Nations.	Kaslo FireSmart Coordinator (Prescription development contractors)	Immediately	Local First Nations are being consulted about cultural burning opportunities.	CRI FCFS funding available as part of prescription development and treatment implementation.
43	High	Monitor and develop maintenance prescriptions/treatments for already completed fuel treatment areas. A consolidated monitoring schedule of all completed treatment units should be considered.	To maintain the efficacy of completed treatments within Kaslo’s WUI.	Kaslo FireSmart Coordinator (BCWS / contractor)	Ongoing	Completed treatments are being monitored.	CRI FCFS funding available as part of prescription development and treatment implementation.
Residential FireSmart							

Item	Priority	Recommendation	Rationale	Lead	Timeframe	Metric Success	for	Funding Source / Est. Cost (\$) / Person Hours
				(Involved)				
44	High	In coordination with RDCK, continue offering Home Partners Program assessments and a local FireSmart rebate program to property. Kaslo and RDCK should advertise that the amount eligible for rebate has increased to \$5000 (for the CRI FCFS 2024 application program).	FireSmart home assessments encourage action in the FireSmart Home Ignition Zone of a community. The rebate program provides a means/incentive for recommendations to be actioned. Focus on removal of conifer hedges and upgrading exterior structure materials.	RDCK / Kaslo (FireSmart Coordinator)	Annually	Number of properties participating annually.		50% of costs per property up to \$5,000, plus 2 hours administration time per property (CRI FCFS).
45	High	In coordination with RDCK, continue providing/supporting options for the disposal of yard waste. Currently, this includes having tipping fees waived (May and October) for yard waste at RDCK transfer stations.	Yard waste burning restrictions limit options for debris disposal. Free debris disposal may be used as an incentive to participate in other FireSmart activities, like assessments or workshops.	RDCK / Kaslo	Annually	Free or low-cost yard waste disposal options continue.		CRI FCFS funding is available for tipping fee coverage.
46	High	Consider implementing a community chipper program. Education of FireSmart yard and landscaping principles, including chipping specifications, should be incorporated into the program. Note: a chipper program was developed and implemented in 2022 with some success. Identify key learnings from that program, and build upon them.	To reduce fire and wildfire hazards on private property within the WUI, especially those long distances from RDCK landfills/transfer stations, and to promote FireSmart vegetation management knowledge and education. The intent is for landscaping/yard vegetation to be included, not farm or agriculture vegetation. This could assist with more uptake of residential FireSmart landscaping principles as the disposal method is brought to the resident, especially for those older and less mobile.	Kaslo FireSmart Coordinator	Annual (pre-fire season is best)	Number of properties who elect to have debris disposed.		CRI FCFS funding; ~\$100-150 per chipper crew hour.
47	High	Continue to support and promote the FireSmart Canada Neighbourhood Recognition Program (FCNRP) to neighbourhoods within Kaslo. Identify community champions to spearhead organization for those neighbourhoods not already organized, and support those neighbourhoods that have been recognized in the past to continue working towards being so.	FireSmart efforts at the neighbourhood level reduce community-scale wildfire risk easily and substantially. The program supports a small-scale approach for neighbourhoods consisting of 5-50 homes, with the intent to implement achievable FireSmart goals.	Kaslo FireSmart Coordinator	Ongoing	Increase in number of recognized neighbourhoods.		FireSmart Canada \$500 grant per neighbourhood, annually.



Map 8: Overview map of Proposed Treatment Units (PTUs), completed and prescribed treatment units (under CL WRR and CRI FCFS funding), and RDCK Electoral Area D CWRP PTUs within and adjacent to Kaslo's WUI.

Table 24: Summary of Proposed Fuel Treatment Units

PTU Name	Priority	Total Area (ha)	Overlapping Values / Treatment Constraints	Wildfire Behaviour Threat			Treatment Rationale
				Extreme & High	Mod	Low	
KAS-1	Moderate	11.8	Entirely on Crown Provincial land outside of Kaslo's municipal boundary (within RDCK Electoral Area D). Partial overlaps with the KDCFS. Abuts municipal land and the airport on its south end. Kaslo Transfer Station is located near its west end, but outside the treatment area. Full overlap with UWR partial harvest polygon.	0.0	11.8	0.0	Treat to reduce wildfire threat within the WUI adjacent to both critical infrastructure and potentially hazardous values and fire ignition points (airport and the Kaslo Transfer Station). Composed of largely C-5 fuel type, characterised by a densely stocked overstory with moderate crown base heights, comprised largely of western hemlock (Hw), western red cedar (Cw), and a lesser component of Douglas-fir (Fd) and western white pine (Pw). The resulting treatment regime should focus on a non-commercial thinning and pile and burning of ladder and surface fuels. This site has the stand characteristics (densely stocked overstory) and moderate slopes which may permit a commercial thinning treatment, if machine access and log removal can be arranged via Kaslo West Road. <i>WTA: KAS-6 (Moderate); KAS-7 (Moderate)</i>
KAS-2	High	16.3	Entirely on Crown Provincial land outside of Kaslo's municipal boundary (within RDCK Electoral Area D). Within 100m of a license POD. Full overlap with UWR partial harvest polygon. Abuts private property on its north, east, and west sides.	9.6	6.7	0.0	Treat to reduce wildfire threat within the WUI on the leading wind side with the highest ISI values, and adjacent to residential values in Kaslo. Composed of largely C-5 fuel type with a densely stocked overstory of Cw, Hw, Fd, paper birch (Ep) and a densely stocked understory of Hw and Cw. The PTU has low to moderate surface fuels and gentle to moderate slopes with limited access features. As a result, the treatment regime lends itself towards a non-commercial thin, pruning retained trees, and pile and burning ladder and surface fuels. <i>WTA: KAS-20 (Moderate)</i>
KAS-3	High	34.4	Entirely on Crown Provincial land outside of Kaslo's municipal boundary (within RDCK Electoral Area D). Full overlap with UWR partial harvest polygons. Abuts private property on its east and south sides. Areas with moderate to steep slopes.	18.4	16.0	0.0	Treat to reduce wildfire threat within the WUI and on steep slopes above residential values in Kaslo. Composed of largely C-7 fuel type with C-5 intermixed where slopes are lower angle (5-25%). These C-5 sites have denser understory conifer stems with pockets of shade tolerant species (Cw, Hw), but are largely dominated by Fd and Ep. Sloped, steeper areas are drier and exhibit C-7 characteristics with an Fd dominant overstory and a mixed wood understory (largely Fd leading). The high crown base heights, high fuel strata gap, and low density of understory stems result in a moderate WTA rating. The resulting treatment regime should focus on surface fuel reduction, thin from below, non-commercial thin, prune, and pile and burn of surface fuels and treatment debris, with intensive hazard tree removal. The stand has pockets of dead standing Fd due to root rot centers, and with the limited CWD on site, the treatment may seek to fell some dead standing trees, recruiting CWD, and dispersing crown fuels. <i>WTA: KAS-20 (Moderate); KAS-4 (Moderate)</i>

Table 25: Previously planned, treated, or under prescription fuel treatment units within Kaslo's WUI.

Treatment Unit & Subunits/Polygons	Status	Area (ha)	Comments
TU 23 Polygons A, B, C, J, K, L, M	Treated (2020, 2021, 2022)	14.1	Municipal Land
TU 23 Polygons D, E, F, G, H, I, N, O, P, Q	Under Prescription (2022)	25.7	Municipal Land
TU 16 Polygon A	Under Prescription	0.9	Municipal Land
TU 16 Polygon B	Treated (2022)	3.7	Municipal Land
TU 16 n/a	Under Prescription (2022)	3.0	Municipal Land; Steep Slopes; Riparian Constraints
TU 12 n/a	Treated (2022)	5.5	Municipal Land
CRI 2018 PTU	Treated	24.0	Municipal Land, with some Crown Provincial
CRI 2018 PTU	Under Prescription	58.8	Crown Provincial land; within W0494

SECTION 6: APPENDICES

6.1 APPENDIX A: LOCAL WILDFIRE RISK PROCESS

Wildfire Threat Assessment plot worksheets are provided in Appendix B: Wildfire Threat Assessment – Worksheets and Photos, plot locations are summarized in Appendix A-2: , and the field data collection and spatial analysis methodology is detailed in Appendix B-2 and B-3.

6.1.1 APPENDIX A-1: FUEL TYPING METHODOLOGY AND LIMITATIONS

The Canadian Forest Fire Behaviour Prediction (FBP) System outlines five major fuel groups and sixteen fuel types based on characteristic fire behaviour under defined conditions.⁴⁹ Fuel typing is recognized as a blend of art and science. Although a subjective process, the most appropriate fuel type was assigned based on research, experience, and practical knowledge; this system has been used within BC, with continual improvement and refinement, for 20 years.⁵⁰ It should be noted that there are significant limitations with the fuel typing system which should be recognized. Major limitations include: a fuel typing system designed to describe fuels which sometimes do not occur within the WUI, fuel types which cannot accurately capture the natural variability within a polygon, and limitations in the data used to create initial fuel types.⁵⁰ There are several implications of these limitations, which include: fuel typing further from the developed areas of the study has a lower confidence, generally; and, fuel typing should be used as a starting point for more detailed assessments and as an indicator of overall wildfire risk, not as an operational, or site-level, assessment. Forested ecosystems are dynamic and change over time: fuels accumulate, stands fill in with regeneration, and forest health outbreaks occur. Regular monitoring of fuel types and wildfire risk assessment should occur every 5 – 10 years to determine the need for threat assessment updates and the timing for their implementation.

Table 26 summarizes the fuel types observed in Kaslo’s WUI by general fire behaviour (crown fire and spotting potential). These fuel types were used to guide the threat assessment.

Table 26. Fuel Type Categories and Crown Fire Spot Potential encountered within the WUI.

Fuel Type	FBP / CFDDRS Description	WUI Description	Wildfire Behaviour Under High Wildfire Danger Level	Fuel Type – Crown Fire / Spotting Potential
C-3	Mature Jack or Lodgepole Pine	<i>Pole-sapling to mature even-aged conifer-dominated forest with moderate to high density and high crown closure (near or at horizontal continuity). Crowns separated from the forest floor in mature stands.</i>	Surface and crown fire, low to very high fire intensity and rate of spread.	High

⁴⁹ Forestry Canada Fire Danger Group. 1992. Development and Structure of the Canadian Forest Fire Behavior Prediction System: Information Report ST-X-3.

⁵⁰ Perrakis, D.B., Eade G., and Hicks, D. 2018. Natural Resources Canada. Canadian Forest Service. *British Columbia Wildfire Fuel Typing and Fuel Type Layer Description* 2018 Version.

Fuel Type	FBP / CFDDRS Description	WUI Description	Wildfire Behaviour Under High Wildfire Danger Level	Fuel Type – Crown Fire / Spotting Potential
C-5	Red and White Pine	<i>Low to moderate density, uneven-aged conifer-dominated forest, crown base heights mixed. Understory of discontinuous natural conifer ingress in openings and gaps, deciduous shrubs, and herbs.</i>	Moderate potential for active crown fire in wind-driven conditions. Under drought conditions, fuel consumption and fire intensity can be higher due to dead woody fuels.	Moderate
C-7	Ponderosa pine and Douglas-fir	<i>Low-density, uneven-aged conifer-dominated forest, crowns separated from the ground, understory of discontinuous grasses and shrubs. Exposed bed rock and low surface fuel loading. Areas with completed fuel treatments.</i>	Surface fire spread, torching of individual trees, rarely crowning (usually limited to slopes > 30%), moderate to high intensity and rate of spread.	Moderate Low (completed fuel treatment areas)
O-1a/b	Grass	<i>Matted and standing grass that can cure; sparse or scattered shrubs, trees, and down woody debris. Cutblocks >2 seasons old that do not meet S-type descriptions, as well as young regenerating cutblocks that have not reached any horizontal continuity.</i>	Rapidly spreading, high-intensity surface fire when cured.	Low
M-1/2	Boreal mixedwood (leafless and green)	<i>Moderately well-stocked mixed stands of conifers and deciduous species (including western larch), low to moderate dead, down woody fuels.</i>	Surface fire spread, torching of individual trees and intermittent crowning, (depending on slope and percent conifer).	<26% conifer (Very Low); 26-49% Conifer (Low); >50% Conifer (Moderate)
D-1/2	Aspen or birch (leafless and green)	<i>Deciduous stands.</i>	Always a surface fire, low to moderate rate of spread and fire intensity.	Low
N	N/A	<i>Non-fuel: irrigated/mowed agricultural fields, urban or developed areas void or nearly void of vegetation and forests.</i>	N/A	N/A
W	N/A	<i>Water</i>	N/A	N/A

6.1.2 APPENDIX A-2: WILDFIRE THREAT ASSESSMENT PLOTS

Table 27 displays a summary of all Wildfire Threat Assessment (WTA) plots completed during CWRP field work. The most recent 2020 WTA threat plot worksheets and methodology were used.⁵¹ The plot forms and photos will be submitted as a separate document. The following ratings are applied to applicable point ranges:

- Wildfire Behaviour Threat Score (Southern Interior Mountains)
 - 0 – 47 Low
 - 48 – 65 Moderate
 - 66 – 79 High
 - 80 + Extreme

Table 27. Summary of WUI Threat Assessment Worksheets (2020).

WTA Plot	Geographic Location	Wildfire Threat Rating
WTA 1	Located in KAS-3, north of Kaslo, north of Washington Street, west of Boundary Avenue.	36, LOW
CWRP 1	West of Zwicky Road, North of Highway 31A, adjacent to gravel pit	56, MODERATE
CWRP 2	North flank of Kaslo River located within the River Trail network adjacent to the Family Bike Park. Accessed via 5 th Street which forms Railroad Avenue	31, LOW
CWRP 3	North of Kaslo, West of Highway 31	56, MODERATE
WTA5	Located in KAS-2, south of Kaslo, east of Kaslo South Road, west of Highway 31	34, LOW
WTA6	Located in KAS-1, West of Kaslo Aerodrome	51, MODERATE
WTA7	Located in KAS-1, West of Kaslo, just north of Kaslo Aerodrome and Kaslo West Road.	44, MODERATE
WTA8	Located in the southwest corner of the Kaslo WUI, accessed via True Blue FSR	54, MODERATE
WTA9	Located in KAS-2, south of Kaslo east of Kaslo South Road	44, MODERATE
WTA10	Located in KAS-3 north of Kaslo, accessed via Branch 7 FSR	37, MODERATE

⁵¹ MFLNRORD.2020 Wildfire Threat Assessment Guide and Worksheets

6.1.3 APPENDIX A-3: FIRE RISK THREAT ASSESSMENT METHODOLOGY

As part of the CWRP process, spatial data submissions are required to meet the defined standards in the Program and Application Guide. Proponents completing a CWRP can obtain open-source BC Wildfire datasets, including Provincial Strategic Threat Analysis (PSTA) datasets from the British Columbia Data Catalogue. Wildfire spatial datasets obtained through the BC Open Data Catalogue used in the development of the CWRP include, but are not limited to:

- PSTA Spotting Impact
- PSTA Fire Density
- PSTA Fire Threat Rating
- PSTA Lighting Fire Density
- PSTA Human Fire Density
- Head Fire Intensity
- WUI Human Interface Buffer (1436m buffer from structure point data)
- Wildland Urban Interface Risk Class
- Current Fire Polygons
- Current Fire Locations
- Historical Fire Perimeters
- Historical Fire Incident Locations
- Historical Fire Burn Severity

As part of the program, proponents completing a CWRP are provided with a supplementary PSTA dataset from BC Wildfire Services. This dataset includes:

- Fuel Type
- Structures
- Structure Density
- Eligible WUI (1 km buffer of structure density classes >6).

The required components for the spatial data submission are detailed in the Program and Application Guide Spatial Appendix – these include:

- AOI
- Proposed Treatment
- WUI (1 km buffer of structure density classes >6)

The provided PSTA data does not transfer directly into the geodatabase for submission, and several PSTA feature classes require extensive updating or correction. In addition, the Fire Threat determined in the PSTA is fundamentally different than the localized Fire Threat feature class that is included in the Local Fire Risk map required for project submission. The Fire Threat in the PSTA is based on provincial scale inputs - fire density; spotting impact; and head fire intensity, while the spatial submission Fire Threat is based on the components of the Wildland Urban Interface Threat Assessment Worksheet. For the scope of this project, completion of WUI Threat Assessment plots on the entire AOI is not possible, and therefore an analytical model has been built to assume Fire Threat based on spatially explicit variables that correspond to the WUI Threat Assessment worksheet.

Field Data Collection

The primary goals of field data collection are to confirm or correct the provincial fuel type, complete WUI Threat Assessment Plots, and assess other features of interest to the development of the CWRP. This is accomplished by traversing as much of the AOI and surrounding Eligible WUI as possible (within time, budget and access constraints). Threat Assessment plots are completed on the 2020 form, and as per the Wildland Urban Interface Threat Assessment Guide.

For clarity, the final threat ratings for the AOI were determined through the completion of the following methodological steps:

1. Update fuel-typing using orthophotography provided by the client and field verification.
2. Update structural data using critical infrastructure information provided by the client, field visits to confirm structure additions or deletions, BC Assessment, and orthophotography.
3. Complete field work to ground-truth fuel typing and threat ratings (completed 8 WUI threat plots on a variety of fuel types, aspects, and slopes and an additional 250 field stops with qualitative notes, fuel type verification, and/or photographs).
4. Threat assessment analysis using field data collected and rating results of WUI threat plots – see next section.

Spatial Analysis

The field data is used to correct the fuel type polygon attributes provided in the PSTA. This corrected fuel type layer is then used as part of the spatial analysis process. The other components are developed using spatial data (BEC zone, fire history zone) or spatial analysis (aspect, slope). A scoring system was developed to categorize resultant polygons as having relatively low, moderate, high or extreme Fire Threat, or Low, Moderate, High or Extreme WUI Threat. Table 28 below summarizes the components and scores to determine the Fire Behaviour Threat.

Table 28: Components of Fire Threat Analysis

Attribute	Indicator	Score
Fuel Type	C-1	35
	C-2	
	C-3	
	C-4	
	M-3/4, >50% dead fir	25
	C-6	
	M-1/2, >75% conifer	20
	C-7	
	M-3/4, <50% dead fir	15
	M-1/2, 50-75% conifer	
	M-1/2, 25-50% conifer	
	C-5	10
	O-1a/b	
	S-1	
	S-2	
	S-3	5
M-1/2, <25% conifer		

	D-1/2	0
	W	0
	N	0
Weather - BEC Zone	AT, irrigated	1
	CWH, CDF, MH	3
	ICH, SBS, ESSF	7
	IDF, MS, SBPS, CWHsds1 & ds2, BWBS, SWB	10
	PP, BG	15
Historical Fire Occurrence Zone	G5, R1, R2, G6, V5, R9, V9, V3, R5, R8, V7	1
	G3, G8, R3, R4, V6, G1, G9, V8	5
	G7, C5, G4, C4, V1, C1, N6	8
	K1, K5, K3, C2, C3, N5, K6, N4, K7, N2	10
	N7, K4	15
Slope	<16	1
	16-29 (max N slopes)	5
	30-44	10
	45-54	12
	>55	15
Aspect (>15% slope)	North	0
	East	5
	<16% slope, all aspect	10
	West	12
	South	15

WUI Risk Classes and their associated summed scores

Very Low	0
Low	0-35
Moderate	35-55
High	55-65
Extreme	>65

These attributes are summed to produce polygons with a final WUI Risk Score. To determine the Fire Threat score, only the distance to structures is used. Buffer distance classes are determined; <200m, 200m-500m and >500m) but only for polygons that had a 'high' or 'extreme' Fire Threat score from previous assessment. In order to determine WUI Risk; those aforementioned polygons within 200m are rated as 'extreme', within 500m are rated as 'high', within 2km are 'moderate', and distances over that are rated 'low'.

Limitations

There are obvious limitations in this method, most notably that not all components of the threat assessment worksheet are scalable to a GIS model, generalizing the Fire Behaviour Threat score. The WUI Risk Score is greatly simplified, as determining the position of structures on a slope, the type of development and the relative position are difficult in an automated GIS process. Structures are considered, but there is no consideration for structure type (also not included on threat assessment worksheet). This method uses the best available information to produce accurate and useable threat assessment across the study area in a format which is required by the UBCM FCFS program.

6.1.4 APPENDIX A-4: PROXIMITY OF FUEL TO THE COMMUNITY

Home and Critical Infrastructure Ignition Zones

Multiple studies have shown that the principal factors regarding home and structure loss to wildfire are the structure's characteristics and immediate surroundings. The area that determines the ignition potential of a structure to wildfire is referred to as (for residences) the Home Ignition Zone (HIZ) or (for critical infrastructure) the Critical Infrastructure Ignition Zone (CIIZ).^{52,53} Both the HIZ and CIIZ include the structure itself and three concentric, progressively wider Priority Zones out to 30 m from the structure (Figure 7 below). More details on priority zones can be found in the FireSmart Manual.⁵⁴



⁵² Reinhardt, E., R. Keane, D. Calkin, J. Cohen. 2008. Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States. *Forest Ecology and Management* 256:1997 - 2006.

⁵³ Cohen, J. Preventing Disaster Home Ignitability in the Wildland-urban Interface. *Journal of Forestry*. p 15 - 21.

⁵⁴ <https://firesmartcanada.ca/> and <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/firesmart>

Critical Infrastructure Ignition Zone



Figure 7: FireSmart Home and Critical Infrastructure Ignition Zone (HIZ, CIIZ)

It has been found that during extreme wildfire events, most home destruction has been a result of low-intensity surface fire flame exposures, usually ignited by embers (firebrands). Firebrands can be transported long distances ahead of the wildfire, across fire guards and fuel breaks, and accumulate within the HIZ/CIIZ in densities that can exceed 600 embers per square meter. Combustible materials found within the HIZ/CIIZ combine to provide fire pathways allowing spot surface fires ignited by embers to spread and carry flames or smoldering fire into contact with structures.

Because ignitability of the HIZ/CIIZ is the main factor driving structure loss, the intensity and rate of spread of wildland fires beyond the community has not been found to necessarily correspond to loss potential. For example, FireSmart homes with low ignitability may survive high-intensity fires, whereas highly ignitable homes may be destroyed during lower intensity surface fire events.⁵³ Increasing ignition resistance would reduce the number of homes simultaneously on fire; extreme wildfire conditions do not necessarily result in WUI fire disasters.⁵⁵ It is for this reason that the key to reducing WUI fire structure loss is to reduce structure ignitability. Mitigation responsibility must be centered on structure owners. Risk communication, education on the range of available activities, and prioritization of activities should help homeowners to feel empowered to complete simple risk reduction activities on their property.

⁵⁵ Calkin, D., J. Cohen, M. Finney, M. Thompson. 2014. *How risk management can prevent future wildfire disasters in the wildland-urban interface*. Proc Natl Acad Sci U.S.A. Jan 14; 111(2): 746-751. Accessed online 1 June, 2016 at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3896199/>.

Table 29. Proximity to the Interface.

Proximity to the Interface	Descriptor*	Explanation
WUI 100 HIZ/CIIZ and Community Zones	(0-100 m)	This Zone is always located adjacent to the value at risk. Treatment would modify the wildfire behaviour near or adjacent to the value. Treatment effectiveness would be increased when the value is FireSmart.
WUI 500 Community and Landscape Zones	(100-500m)	Treatment would affect wildfire behaviour approaching a value, as well as the wildfire's ability to impact the value with short- to medium- range spotting; should also provide suppression opportunities near a value.
WUI 2000 Landscape Zone	(500-1000 m)	Treatment would be effective in limiting long - range spotting but short-range spotting may fall short of the value and cause a new ignition that could affect a value.
Landscape Zone	>1000 m	This should form part of a landscape assessment and is generally not part of the zoning process. Treatment is relatively ineffective for threat mitigation to a value, unless used to form a part of a larger fuel break / treatment.

*Distances are based on spotting distances of high and moderate fuel type spotting potential and threshold to break crown fire potential (100m). These distances can be varied with appropriate rationale, to address areas with low or extreme fuel hazards.

6.2 APPENDIX B: WILDFIRE THREAT ASSESSMENT – WORKSHEETS AND PHOTOS

Provided separately as PDF package.

6.3 APPENDIX C: MAPS

Provided separately as PDF package.

6.4 APPENDIX D: 2016 REGIONAL DISTRICT OF CENTRAL KOOTENAY (RDCK) AREA D AND KASLO COMMUNITY WILDFIRE PROTECTION PLAN UPDATE

Table 30 below is a summary of the recommendations from the 2016 Regional District of Central Kootenay (RDCK) Area D and Kaslo Community Wildfire Protection Plan Update. These were reviewed and commented on by Local Government. Some comments have been edited for clarity.

Table 30: 2016 RDCK Area D and Kaslo CWPP Update recommendations and status.

Item	2016 CWPP Recommendation	2024 Follow-Up Discussion	CWRP
Communication and Education			
Objective: To improve public understanding of fire risk and personal responsibility by increasing resident awareness of the wildfire threat in their community and to establish a sense of homeowner responsibility.			
1.	Establish / expand a school education program to engage youth in wildfire management. Consult ABCFP and BCWS (the zone) to facilitate and recruit volunteer teachers and experts to help with curriculum development and to be delivered in elementary and/or secondary schools. Educational programming can be done in conjunction with currently running programs on fire extinguisher training.	FireSmart BC has developed education materials. Opportunity to strengthen communication and collaboration with JVH staff and students, and homeschooling parents and students and connect educators with these resources.	
2.	Make summaries of this report and associated maps publicly available through webpage, social media, and public FireSmart meetings. Add fire threat spatial data to the interactive web-mapping tool to allow residents to find their property and the associated threat of wildfire.	Still a relevant objective. More website content is a current goal.	
3.	Participate in the National Wildfire Community Preparedness day, typically in May each year.	Ongoing.	
4.	Expand door-to-door FireSmart assessment and/or Home Partner Program within the Area D and Kaslo interface in order to educate residents and to quantify the level of risk in the interface.	Still relevant, many early adopters have been captured so visibility and accessibility in the community is important.	
Objective: To enhance the awareness of elected officials and stakeholders regarding the resources required to reduce fire risk.			
5.	Develop regional development permit standards and align local government bylaws.	Ongoing; example is the VoK wildfire DPA.	
6.	Provide a group voice to the Building and Safety Standards Branch and other provincial entities.	Better handled by a broader organization like FireSmart BC.	

7.	Develop a coordinated approach to fuel management and hazard reduction within and adjacent to the Area D and Kaslo Study Area by coordinating with stakeholders including conservation organizations, communities, forest licensees, Ministry of Transportation and Infrastructure and utility companies, to aid in the establishment of FireSmart activities and large, landscape-level fuel breaks or compliment current or proposed fuel treatment areas.	Ongoing.
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Structure Protection and Planning

Objective: Enhance protection of critical infrastructure from wildfire

8.	Complete a fire flow / water vulnerability assessment for each water system and identify and map all alternative water sources (reservoirs, streams, lakes, etc.). Identify which areas may have insufficient or unreliable water supplies and provide recommendations to reduce vulnerability in Area D and Kaslo. Explore collaboration with other agencies including Columbia Basin Trust, Ministry of Environment, Ministry of Transportation and Infrastructure and Interior Health Authority.	Ongoing and requires collaboration from multiple perspectives. Especially in relation to McDonald Creek reservoir. Keep in CWRP to support future funding applications.
9.	Complete a vulnerability assessment of all critical infrastructure (not only RDCK and Village of Kaslo critical infrastructure) including water infrastructure in interface areas with FireSmart recommendations.	I believe that there is more to do.
10.	Develop alternative, back-up water sources for fire protection, including determining the suitability of the MacDonald Creek water reservoir, and the establishment of standpipes as required.	Still an important priority. 2023 preliminary report of minimal value.
11.	Complete a detailed review of back-up power source options for all critical infrastructure and upgrade as required.	Some progress, but more to do.
12.	Complete more detailed hazard assessments and developing, in collaboration with other available government funding, response plans for stabilization and rehabilitation of burn areas in watersheds that are vulnerable to post-wildfire debris flows and floods.	Ongoing.

Objective: Encourage private homeowners to voluntarily adopt FireSmart principles on their properties.

13.	Support homeowners with professionals to provide the Home Partners Program or WUI Site and Structure Hazard Assessments for interface homes and provide information to homeowners on specific steps that they can take to reduce fire hazards on their property. Homeowners should not be charged for these assessments.	Ongoing.
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Local Government Policy

Objective: To reduce wildfire hazard on private land and increase FireSmart compliance.

14.	Complete OCP review and implement and / or strengthen zoning to expand reach of the existing.	
15.	Develop Wildfire Hazard Development Permit (DP) Areas for major retrofits/ renovations or new builds (building permits), collecting bonds to be returned upon evidence of completing development and landscaping according to wildfire hazard assessment. Review District of North Vancouver and Kelowna DP processes, with particular attention to implementation, enforcement, affordability and associated liabilities. Explore proactive incentives, such as tax reductions and reduced building permit fees.	Wildfire DPA has been established, but the focus is on education, not strict compliance.
16.	Obtain legal advice regarding the Building Act, specifically regarding the temporarily unrestricted matters and local government authority to set exterior building materials requirements. Use local government authority to mandate FireSmart construction materials beyond BC Building Code in wildfire hazard development permit area, as allowed.	VoK may have limited knowledge and capacity to engage in Building Code issues. Also limited appetite for enforcement at present.
17.	Develop a landscaping standard to be applied in interface / DP areas. The standard should list flammable non-compliant vegetation, non-flammable drought and pest resistant alternatives, and tips on landscape design to reduce maintenance, watering requirements, and reduce wildfire hazard. Include meeting landscaping standard as a requirement of Development Permit. Review District of North Vancouver and Kelowna DP processes, with particular attention to implementation, enforcement, affordability and associated liabilities. Explore proactive incentives, such as tax reductions and reduced building permit fees.	Ongoing: FireSmart BC landscaping guide. Other avenues of dispersing this information include public engagement and education, collaboration with local businesses, youth, school groups, and FCNRP.
18.	Proactively enforce wildfire covenants requiring owners to maintain their properties hazard free on all properties in Development Permit areas. Enforcement will serve to minimize fuel risks on problematic private properties that have allowed hazardous accumulation of fuels and provide improved protection to adjacent lands.	VoK is not using covenants at this point. Exploring compliance/enforcement of Wildfire DPA rules could be listed in CWRP.
19.	Develop a landscaping standard to be applied in interface / DP areas to ensure that developers leave building set backs on private land so that there is a minimum of 10 m distance between buildings and forest interface.	Landscaping is included in the Wildfire DPA.

20.	Consider developing an outdoor burning bylaw specifying requirements for and limitations to outdoor burning and, in conjunction with the Fire Chief, implement the bylaw at times of high fire danger when provincial bans are not in place. The bylaw should consider effective and efficient enforcement measures and powers.	See bylaw 1213.
21.	Work with the Building and Safety Standards Branch to provide input into the Building Code revisions that would apply within the interface to prevent the spread of wildfire.	[no comment]

Emergency Response and Planning

Objective: To improve structural and wildfire equipment and training available to RDCK Fire and Rescue.

22.	Conduct annual mutual aid training with MFLNRORD and BCWS including completion of a mock wildfire simulation in coordination with BCWS and safety training specific to wildland fire and risks inherent with natural areas. As part of the training, conduct annual reviews to ensure PPE and wildland equipment resources are complete, in working order, and the crews are well versed in their set-up and use. Wildfire training should be in compliance with Office of the Fire Commissioner standards.	Still relevant.
23.	Ensure RDCK Wildfire Mitigation Coordinator act as liaison between the RDCK Collaborative Planning Group and the Emergency Preparedness Committee for Area D and Kaslo. Coordination and information sharing are crucial to the development of a community well prepared for wildfire.	Involve Village of Kaslo FireSmart Coordinator in RDCK Emergency Programs.
24.	Review and clarify SPU request procedures with RDCK fire Chiefs and ensure robust SPP115 training for fire fighters.	This is dictated by RDCK Fire Service; not relevant to VoK CWRP.
25.	Develop Regional Service to fund additional SPUs and maintain existing SPUs.	Assess need for additional SPUs including identifying water sources, activation protocols, and community education around the limitations of this tool with VoK water supply/infrastructure.
26.	Explore opportunities to collaborate with BCWS and within RDCK fire service to coordinate discount volumes of hose for interface fires, reducing costs and logistics to local fire departments	RDCK, not VoK.
27.	Explore opportunities to ensure a duty officer is in place in each Fire Protection Area to provide coverage for periods of high or extreme hazard.	RDCK, not VoK.

28.	Conduct fire preplan assessment for key interface areas in Kaslo and Area D. Other jurisdictions have completed assessments that prioritize fire department-specific variables, such as distance to hydrants, response time from nearest fire station, etc. to produce local risk ratings.	Some work has been done; more required.
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Emergency Response Evacuation and Access

Objective: To improve access and egress to neighbourhoods at risk and natural areas within RDCK.

29.	Develop a Total Access Plan to create, map and inventory trail and road network in natural areas for suppression planning, identification of areas with insufficient access and to aid in strategic planning. Fire threat mapping from this CWPP should be included. The plan should be updated every five years, or more regularly, as needed to incorporate additions or changes.	Please keep this in CWRP.
30.	Require that all new interface developments have access for evacuation and sufficient capacity for emergency vehicles.	Please keep in CWRP.
31.	Facilitate completion of emergency planning zones for interface neighbourhoods with limited access	See 30; also ongoing.

Fuel Management

Objective: Reduce wildfire threat on public lands through fuel management.

32.	Proceed with detailed assessment, prescription development and treatment of hazardous fuel units identified in this CWPP. Collaboration with licensees may facilitate larger projects.	Continue.
33.	Prioritize Areas of Interest across Electoral Areas with updated CWPPs to ensure effective and objective treatment	Remove.

Objective: Maintain treated areas under an acceptable level of wildfire fire threat (moderate).

34.	As treatments are implemented, complete monitoring within 10 years of treatment (subject to site conditions) and maintenance every 15-20 years (subject to prescription and site conditions) on previously treated areas. Treated areas should be assessed by a Registered Professional Forester, specific to actions required in order to maintain treated areas in a moderate or lower hazard.	Ongoing.
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