Cariboo Regional District

ELECTORAL AREA F

Community Wildfire Resiliency Plan 2025

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This CWRP has been prepared for the Cariboo Regional District – Electoral Area F

PREPARATION
SERVICE PROVIDER: Forsite Consultants Ltd.
PRIMARY SIGNING FORESTER: Lauren Shinnimin, RPF# 5154
SECONDARY AUTHOR: Austin Frie, FIT #292 (SK)
DATE SIGNED
November 28, 2025
I certify that the work described herein fulfills the standards expected of a registrant of the Forest Professionals British Columbia and that I did personally supervise the work.
REGISTERED PROFESSIONAL FORESTER SIGNATURE & SEAL

FORSITE
Forest Management Specialists

Submission Page

Submitted to:

Irene Israel

Irene Israel
Manager of Emergency Program Services
Cariboo Regional District

November 28, 2025

Date

Leanne Rivet

Leanne Rivet
Emergency Program Coordinator
Cariboo Regional District

November 28, 2025

Date

Acknowledgments

This Community Wildfire Resiliency Plan (CWRP) is one of six CWRPs developed for the electoral areas located within the South and Central Cariboo regions. The Cariboo Regional District encompasses twelve electoral areas in total and CWRPs for the remaining 6 electoral areas within the north and west are planned to be completed in 2026. The CRD respectfully acknowledges that this project is taking place on the unceded traditional territories of the Secwépemc, Southern Dakelh, and Tsilhqot'in Nations, specifically the territories of T'exelc (Williams Lake First Nation), Tsq̓éscen̓' First Nation, Xatśūll First Nation, Esk'etemc First Nation, Stswecem'c Xget'tem First Nation, and ?Esdilagh First Nation. We gratefully acknowledge and appreciate their contributions to the development of this plan.

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CRD Staff Contributors

- **Leanne Rivet**, Emergency Program Coordinator
- **Alyson Campbell**, Emergency Program Coordinator
- **Irene Israel**, Manager of Emergency Program Services
- **Stephanie Masun,** Manager of Intergovernmental Relations
- **Travis Flanagan**, CRD FireSmart Coordinator
- **Roger Hollander**, Regional Fire Chief
- **Darron Campbell,** Manager of Community Services
- **Tera Grady**, Manager of Solid Waste
- **Nigel Whitehead**, Manager of Planning Services
- **Kelly McDonald**, Manager of Utilities

Forsite Fire Team

- **Lauren Shinnimin, RPF**, Landscape and Community Wildfire Resiliency Lead
- **Austin Frie, FTT**, Wildfire Management Specialist
- **Lorena Tillotson,** Wildfire Risk Reduction Planner, Local Liaison
- **Carmen Massey,** Planner – Indigenous Engagement
- **Richelle Parada,** GIS

Other Contributors

- **Tom Foley,** Wildfire Prevention Officer, Cariboo Fire Centre, BCWS
- **Daniel Merth,** Land and Resource Specialist, Cariboo-Chilcotin Natural Resource District, MOF
- **Cate Cautley-Davis,** 100 Mile House District, MOF
- **Peter Holub,** Wildfire Prevention Officer, Cariboo Fire Centre, BCWS
- **Dave Dickson,** Emergency Support Services Director, Williams Lake & CRD
- **Tami Archie**, Emergency Operations Director, Tsq̓éscen̓ First Nation
- **Don Dixon**, Former Natural Resources Manager (Ret.), Tsq̓éscen̓ First Nation
- **Gregg Archie**, Interim Natural Resources Manager, Referrals Coordinator and Fire Chief, Tsq̓éscen̓ First Nation
- **Ted Traer,** Emergency Coordinator, ?Esdilagh First Nation

- **Merle Sinclair**, Maintenance, ?Esdilagh First Nation
- **Nicole Johnston**, FireSmart Coordinator, ?Esdilagh First Nation
- **Francis Johnson**, Hereditary Chief and Forest Manager, Esk'etemc First Nation
- **Fred Robbins**, Elected Chief, Esk'etemc First Nation
- **Trevor Chelsea**, Emergency Program Coordinator, Esk'etemc First Nation
- **Ashley Camille**, Crisis and Emergency Response Coordinator, Stswecem'c Xgat'tem First Nation
- **John Liscomb**, Forester, Stswecem'c Xgat'tem First Nation
- **Clayton Harry**, Stewardship Manager, Stswecem'c Xgat'tem First Nation
- **Adam Colpitts**, Stewardship Coordinator and Referrals Coordinator, Stswecem'c Xgat'tem First Nation
- **Roxanne Popp**, FireSmart Coordinator, Xatśūll First Nation
- **Emily Sonntag**, Land and Natural Resource Director, Xatśūll First Nation
- **Dennis Elliott**, Director of Capital Infrastructure, Xatśūll First Nation
- **Darrin Sargent**, Referrals Coordinator, Xatśūll First Nation
- **Marnie Sellars**, Housing Manager, Xatśūll First Nation
- **Paul McCarthy**, Emergency Program Coordinator, Williams Lake First Nation
- **Ariel Billyboy**, Emergency Program Support, Williams Lake First Nation

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Executive Summary

Across British Columbia, Wildfire is a natural disturbance agent on the landscape that helps created and maintain heathy forest ecosystems and ecosystem functions[1]. With warming temperatures, changing precipitation regimes due to climate change, and increasing human development and activity in or near forests, British Columbia is experiencing a sustained increase in wildfire behaviour and events, particularly in the wildland urban interface[2]. The notable wildfire seasons of 2017, 2018, 2021, and 2023, and 2024 highlight the potential impacts wildfire activity can have on communities.

The 2017 wildfire season was particularly impactful for the Cariboo Regional District. During the 77 days from July 6th until September 20th, the Cariboo Regional District Emergency Operations Centre issued 149 alerts and order changes impacting 35,616 residents with 48% of the region's population having to evacuate. Sixty homes and 167 other structures were lost due to the fires. In response, an After-Action Report was developed to highlight and improve on successes and failures. The development of this Community Wildfire Resiliency Plan for Electoral Area F, and the implementation of the recommended actions aim to strengthen the resiliency to negative wildfire impacts across the region and bolster FireSmart practices.

The purpose of this CWRP for the Cariboo Regional District (CRD), Electoral Area F is to:

i. identify and assess wildfire hazards within and around Electoral Area F,
ii. assess potential risks and impacts to the community and infrastructure from wildfires, and
iii. provide effective and feasible mitigation strategies to reduce identified hazards and risk.

This CWRP is structured around the seven FireSmart disciplines, providing a comprehensive framework for addressing wildfire mitigation and risk reduction. The seven FireSmart disciplines are:

1. Education
2. Legislation and Planning
3. Development Considerations
4. Interagency Cooperation
5. Cross-training
6. Emergency Planning
7. Vegetation Management

Electoral Area F ranges across an expansive area of 976,100 hectares. This electoral area lies directly east of Williams Lake and shares its eastern border with both the Thompson-Nicola Regional District and the Regional District of Fraser-Fort George. The electoral area is characterized by heavily forested terrain with communities scattered throughout. Remote communities in Electoral Area F include Horsefly, Likely, Big Lake, Miocene, Black Creek, and Keithley Creek. Closer to Highway 97 are the communities of 150 Mile House, 141 Mile House, and Dugan Lake.

[1] British Columbia Wildfire Service. (n.d). Prevention. Retrieved September 4, 2025, from https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/prescribed-burning
[2] British Columbia Wildfire Service. (n.d). Prevention. Retrieved July 17, 2024, from https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention

The development of this CWRP included a multi-phase approach including analysis of background data, public engagement, engagement with Indigenous Governments, local wildfire threat assessment through collection of field data, and development of a risk mitigation strategy based on the unique attributes of Electoral Area F.

Table 1: Cariboo Regional District Electoral Area F CWRP Risk Assessment and Action Plan Summary summarizes the recommended action items for Electoral Area F within the CRD as identified by the CWRP development process. Implementing these measures will require coordinated efforts by the Cariboo Regional District in partnership with other governments, agencies and stakeholders, including but not limited to, Indigenous Governments, provincial government agencies, adjacent municipal governments and partners, and community members/private landowners.

Summary of Identified Risks and Action Plan

Table 1: Cariboo Regional District Electoral Area F CWRP Risk Assessment and Action Plan Summary

Risk Assessment
The purpose of a risk assessment is to identify the specific risks to a community and its assets. An ongoing review of the risk assessment should occur annually.
This CWRP highlights identified risks and recommended actions to enhance wildfire resiliency within the Cariboo Regional District, and specifically, the communities within Electoral Area F. It is important to read and understand this CWRP's identified risks and recommended action items. The risks listed below were identified based on background research, field work data collection, conversations with internal staff within the CRD Emergency Program Services department and other CRD departments, external partners including BC Wildfire Service and the Ministry of Forests, and feedback received from public and Indigenous Government engagement. The identified risks below are listed in no particular order: I. Electoral Area F is a geographically large electoral area containing numerous relatively isolated communities surrounded by heavily forested landscape including Horsefly, Likely, Big Lake, Miocene, Black Creek, and Keithley Creek. For many of these communities, evacuation routes are limited, long, and forested, making them easily compromised in a wildfire event. This underpins the critical need for isolated communities to build wildfire resiliency and be prepared for wildfire events. II. Over 50% of the area within the Wildland Urban Interface in Electoral Area F is occupied by private land, with many large rural private land parcels. This limits opportunities for meaningful fuel management treatments on provincial crown land adjacent to homes and structures and puts further importance on private landowners to implement FireSmart activities on the properties and homes. III. Portions of Electoral Area F, including fringe areas around Williams Lake, 150 Mile House, and Miocene are covered under an established CRD Volunteer Fire Department fire protection area. Additional communities within the Electoral Area may be covered by other departments such as Likely, Big Lake and Horsefly. The remainder of the Electoral Area is not officially covered under a Regional District fire protection area, leaving many rural residents relying on independent volunteer fire brigades and potentially vulnerable during structural fires or emergency response situations. IV. The North Lakeside community near Williams Lake falls under the Williams Lake Fringe Area Official Community Plan (OCP), and 150 Mile House area falls under the 150 Mile House OCP. These OCPs contain policies and objectives pertaining to zoning and development for Hazardous Conditions, including wildfire. Mapped areas of wildfire probability are delineated in both OCPs created in 2013 and 2010, respectively, and can be considered outdated. In addition, none of the OCPs officially designate Development Permit Areas for wildfire hazard, and the OCPs only require a Wildfire Hazard Assessment prepared by a registered professional forester for subdivisions of land where the number of new parcels is greater than four. The remainder of Electoral Area F does not fall under a completed OCP; instead, land use and developments are regulated via the Central Cariboo Area Rural Land Use Bylaw (RLUB). The RLUB currently does not contain policies or regulations pertaining to wildfire hazard, and no requirements for implementation of FireSmart principles during development. As a result, newly built structures and future development could be at risk from wildfires if the are not built to FireSmart standards. V. To date, a provincial landscape-level Wildland Urban Interface Wildfire Risk Reduction (WUI WRR) Plan has only been completed for the North Lakeside and Sugarcane areas of Electoral Area F. This leaves the remainder of

Risk Assessment
the large electoral area without any landscape-level wildfire risk reduction planning completed for public lands. Additionally, there are a large number of area-based forestry tenures within the electoral area, including First Nations Woodland Licenses, Community Forests, and Woodlots. Strategic and collaborative planning with First Nations, forest tenure holders, and the Ministry of Forests is critical to ensure effective wildfire risk reduction activities are planned and implemented around communities.
VI. Many communities within Electoral Area F lack reliable cell service. This can pose a significant barrier to receiving timely emergency notifications. Strategic emergency communication planning would be beneficial and should consider alternate methods of fast and concise emergency notification and response protocols.
VII. Limited egress communities pose a concern for evacuation safety during a wildfire event. Comprehensive emergency and evacuation planning that more thoroughly considered evacuation options and included an inventory of private roads and potential egress routes would be highly beneficial for the region.

Note: The below action items and associated timelines, priority rankings, and metrics for success are RECOMMENDATIONS ONLY based on findings and information gathered during the development of this CWRP. The CRD reserves the right to choose to implement action items as they see fit in whatever order and timeframe they deem is appropriate and achievable. Recommended timeframes have been developed within a 5-year timeline to align with the general lifespan of the CWRP but in reality, may take longer to implement. Many of the recommended action items within this CWRP and associated Action Plan are fundable under the provincial Community Resiliency Investment (CRI) program during the time of development. However, eligible activities under the program are subject to change annually.

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
Education						
1. Read and understand this CWRP's identified risks and recommended actions.	Emergency Program Coordinator and staff, FireSmart Coordinator	Very High	Immediate	A completed and comprehensive CWRP	Clear understanding of actions required over the next 5 years to further enhance community wildfire resiliency by CRD staff	The CWRP acts as the roadmap for developing and enhancing wildfire resiliency within communities. It is designed to last approximately 5 years, upon which reassessment of status and progress is required
2. Develop a FireSmart public communication plan/strategy to effectively plan and monitor annual FireSmart educational strategies and activities for the entirety of the CRD.	FireSmart Coordinator, Communications staff	Very High	Immediate and ongoing	Communications and planning resources	Development of an annual communications plan that clearly outlines FireSmart education objectives and targets tailored for each CRD Electoral Area and its residents.	A public communications plan/strategy can help clarify and set goals, objectives, and measurable targets. It also allows for successful tracking and adaptive management to improve activities that do not meet objectives or targets.
3. Continue to employ a full-time FireSmart Coordinator. This position runs all aspects of the FireSmart program and	Protective Services	Very High	Ongoing	An annual salary for the position and appropriate training and orientation. This	Successfully retain at least one individual in the FireSmart position who is enthusiastic about promoting FireSmart.	A FireSmart Coordinator will be required to receive CRI funding beginning in 2024. Funding is currently available under the CRI

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generally is in charge of actioning many aspects of this CWRP.				can be covered through grant funding		program to support a salary for a FireSmart Coordinator, Local FireSmart Representative, Wildfire Mitigation Specialist, or Wildfire Forest Professional
4. Continue to organize and hold a variety of FireSmart events throughout the CRD. Event types include by are not limited to a Wildfire Community Preparedness Day, Farm and Ranch Wildfire Preparedness Workshop, Neighbourhood Champion workshop, or Fire Hall open house.	FireSmart Coordinator	Very High	Annually, ideally between the months of May and October	Communication and public outreach resources such as social media, webpage postings, posters, etc. Resources to run the event such as tent, food, staff/volunteers, FireSmart promotional materials.	Hold a minimum of one type of FireSmart event per year **in each Electoral Area**.	Funding is currently available through the CRI program to organize, host or support FireSmart events.
5. Continue to encourage and promote residents to have a Local FireSmart Representative (LFR) complete a FireSmart Home Ignition Zone (HIZ) Assessment or Farm and Ranch Assessment for their home/property. Based on the	FireSmart Coordinator	Very High	Ongoing	FireSmart Coordinator, Local FireSmart Representative, Neighbourhood Champion, or other qualified staff to complete the Home Ignition Assessment	Residents within the CRD continue to request FireSmart HIZ Assessments be completed for their home/property. Set reasonable targets for number of completed assessments based on interest in previous years.	The most successful component of the CRD's FireSmart Education Program to date has been requests by residents for completion of a FireSmart HIZ Assessment. Overall, interactions during the FireSmart HIZ Assessments have been positive learning opportunities for residents. Residents are also offered the option to have a follow up FireSmart

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outcome of the Assessments, encourage property owners to implement as many mitigation activities as possible.						Assessment completed after they have implemented recommendations; however, no follow up assessments have been requested to date. Therefore, the status of implementation of FireSmart activities on private properties is unknown. Funding is currently available through the CRI program to have LFRs complete FireSmart HIZ Assessments, as well as Farm and Ranch Assessments for property owners.
6. Promote and encourage all agricultural/ farm/ranch landowners to develop a **Farm/Ranch Wildfire Preparedness Plan** for their properties. These Wildfire Plans will allow farmers/ranchers to be better prepared to take effective action during wildfires, identify risk reduction priorities to complete such as	FireSmart Coordinator, Emergency Program Coordinator	Very High	Immediate and ongoing	Communication and education resources	Utilize various communication avenues to educate farm/ranch landowners about the benefit of the Preparedness Plans	A large portion of CRD residents are rural ranch/farm owners. Resources relating to the Farm & Ranch Wildfire Preparedness Plan are currently available on the CRD website. The BC Climate Change Adaptation Program has developed a guide and fillable workbook to assist landowners/producers with completing the Farm/Ranch Wildfire Plans. Both are available for

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removing fuels or setting up sprinklers, and share important information with those involved in wildfire response, such as the BCWS.						download on the FireSmart BC website[3]
7. Develop and offer a local FireSmart Rebate Program to residential property or homeowners that complete eligible FireSmart activities from their FireSmart HIZ Assessment. This provides incentive and assists with the financial barriers of implementing FireSmart activities on private land.	FireSmart Coordinator	Very High	Within 5 years (2030)	Program development and communication resources	Residents are aware of the FireSmart Rebate program and are actively taking part in implementing eligible FireSmart activities and applying for rebates upon completion	Funding is currently available through the CRI program to support rebate programs. As of 2025, rebates are limited to 50% of the total cost of the eligible activities identified in the CRI Program Guide and up to $5,000 per property. Rebate programs can be highly effective in aiding with the financial costs of FireSmart activities.
8. Continue to waive tipping fees for residential, FireSmart generated wood waste. Consider organizing Community Chipper Days/ Community Waste Disposal/ Bin Days for residents, particularly those that may	FireSmart Coordinator, Manager of Solid Waste	High	Annually	Chipper waste management staff or contractors	Maintain opportunity for free dop off of residential FireSmart generated wood waste at all CRD refuse sites within each Electoral Area. Removal of hazardous debris, vegetation, invasive	Continue to provide free drop off (no tipping fees) of residential, FireSmart generated wood waste at CRD refuse sites. This service is available for wood waste generated from private residences only, within the CRD and will not include wood

[3] Farm/Ranch Wildfire Plan Guide and Workbook. https://firesmartbc.ca/resource/farm-ranch-wildfire-preparedness-an-introduction/

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have difficulty accessing the landfill (e.g. vulnerable populations). This will encourage and aid residents with removal of hazardous vegetation and debris around their homes.					plants and other flammable materials around homes is completed on an annual basis.	waste from provincial lands or areas identified for treatment within this CWRP. Explore opportunities to offer community "bin days" (or a similar type of program) to assist residents, particularly those lacking physical capacity, with removal of high-risk vegetation and debris from their properties, around homes and other structures. Funding is available through the CRI program to provide off-site vegetative debris disposal for residential properties who have undertaken their own residential-scale FireSmart vegetation management, including: • Provide a dumpster, chipper or other collection method. • Waive tipping fees.
9. Inform communities of upcoming FireSmart events and other fire/emergency management related updates via a variety of	FireSmart Coordinator, CRD	High	Ongoing	Communication resources	FireSmart resources are available in multiple locations and platforms to reach a wide variety of residents. FireSmart	Public outreach and information sharing needs to occur on a variety of platforms to capture residents of all demographics.

CRD Electoral Area F CWRP Action Plan						
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communication platforms including social media groups, the CRD website, posters, community and school newsletters, etc.	Communications Staff				events are well advertised and attended.	
10. Promote and encourage neighbourhoods to work together to implement FireSmart activities at a neighbourhood level and apply for the FireSmart Canada's Neighbourhood Recognition Program. Once recognized, annually renew for FireSmart Recognition is required.	FireSmart Coordinator	Moderate	Within 5 years (2030), then Annually	A certified Local FireSmart Representative or Neighbourhood Champion to complete Neighbourhood Wildfire Hazard Assessments	Work to recruit Neighbourhood FireSmart Champions in isolated communities to lead and organize FireSmart initiatives. At least one community/ neighbourhood achieves FireSmart Neighbourhood Recognition by the end of 2028	Application to be filled out and required actions for recognition must be completed[4]. Funding is available through the CRI program to complete Neighbourhood Wildfire Hazard Assessments and FireSmart Neighbourhood Plans.
11. Work with School Division 27 to incorporate the FireSmart BC Education Program[5] at local schools. This includes promotional materials for contests, banners, and	FireSmart Coordinator	Moderate	Within 4 years (2029)	FireSmart BC Curriculum, support from School Division 27 and local schools	The FireSmart BC Education Program is adopted into schools where deemed appropriate.	Efforts have been made by the CRD FireSmart Coordinator to increase engagement and interest among youth and working age class residents. This includes creating fun and interactive displays for the FireSmart booth, handing out

[4] https://www.firesmartcanada.ca/programs-and-education/neighbourhood-recognition-program/

[5] FireSmart BC Education Program. https://firesmartbc.ca/resource/firesmart-bc-education-program/?gad_source=1&gclid=Cj0KCQjw0ruyBhDuARIsANSZ3wqyvKf7RzmwlB7Q-oStEzKbaj0zD4cTqXm2cxLyL3P5pSncPXJkAeoaAgCnEALw_wcB

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targeted education events at schools to promote the education program curriculum.						children's FireSmart promotional items, attending the Children's Festival, and implementing a FireSmart library program. The CRD should continue to support the FireSmart BC Library Program and complement it with the FireSmart BC Education Program. Funding is currently available through CRI to support schools with the FireSmart BC Education Program.
12. Distribute Educational Materials to the public to support the development of prescribed fire and cultural burning programs	FireSmart Coordinator, Regional Fire Chief	Low	Within 5 years (2030)	BCWS support and educational resources, First Nations involvement, Program development and communication resources	Develop and distribute educational resources to residents describing the benefits of returning fire to the landscape	Portions of Electoral Area F around the fringes of Williams Lake and Sugar Cane are within a Natural Disturbance Type (NDT) 4 zone, characterized by frequent stand-maintaining events. In addition, the NDT 4 areas are all comprised of Interior Douglas-fir Biogeoclimatic zones where the stand-maintaining event is most often fire and coincides with a large portion of the WUI. Given the high dependency of fire to maintain these ecosystems, it is important to build educational capacity to describe how controlled fires can help reduce the frequency out-of-control wildfires and restore and maintain natural habitats and

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						cultural practices, with the ultimate goal of developing prescribed fire and cultural burning programs. Funding is currently available through the CRI program for targeted public education to support implementation of fuel management activities, including cultural burning and prescribed fire.
Legislation and Planning						
13. Ensure that going forward, planning and development throughout the CRD considers wildfire risk in all aspects. This includes ensuring all local emergency and development plans and bylaws are developed, updated, or amended to align with wildfire risk reduction and FireSmart principles.	Manager of Planning Services	Very High	Immediate and ongoing	Communication resources, internal staff capacity, FireSmart and wildfire risk reduction guidance	All CRD plans and policies incorporate wildfire risk at multiple levels and bylaws are developed/amended to reflect higher-level goals and objectives	Remote and limited road access communities in Electoral Area F are of high concern for emergency evacuation in the event of a wildfire. Wildfire hazard planning and development requirements are not consistently applied across all rural communities within the CRD.
14. Amend the Williams Lake Fringe Area OCP and 150 Mile House OCP sections pertaining to wildfire policies	Manager of Planning Services, Regional Fire	High	Within 5 years (2030)	Communication resources, internal staff capacity, FireSmart and wildfire	The Williams Lake Fringe Area and 150 Mile House OCPs are updated/ amended to better reflect	Wildfire policies and objectives are currently part of the Williams Lake Fringe Area and 150 Mile House OCPs. However, the wildfire hazard

CRD Electoral Area F CWRP Action Plan						
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and objectives and consider including: I. Establishing and writing into Bylaw, Wildfire Development Permit Areas that may require development permit approval based on FireSmart guidelines. Consider writing into bylaw to integrate wildfire hazard mitigation into regulatory planning processes II. Update Wildfire Probability Mapping in the Williams Lake Fringe Area (Schedule F) and 150 Mile House (schedule E) OCPs to reflect the most up-to-date Wildfire Hazard mapping III. Include wildfire assessment and FireSmart requirements	Chief, FireSmart Coordinator			risk reduction guidance, expertise required for mapping wildfire hazard	current wildfire hazard and land ownership, and FireSmart requirements for various types of development are strengthened.	and land ownership mapping for wildfire probability are out of date, and wildfire hazard assessment reporting requirements within the WUI only apply to multi-building development greater than or equal to 4 parcels. Additionally, although the framework for a Wildfire Development Permit Area is in place within the OCPs, it has not been legally established through bylaw. With DPAs you can require wildfire risk assessments, regulate building exterior design, landscaping/vegetation management, and regulate wildfire hazard through permit conditions or covenants—while avoiding conflicts with the *BC Building Act*. Funding is currently available through the CRI program to amend Official Community Plans, Comprehensive Community Plans and/or land use, engineering and public works bylaws to incorporate FireSmart principles.

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for subdivisions < four parcels and single building development within the WUI.						
15. To assist the CRD in covering Wildfire Hazard DPA administrative permitting costs, update Development Procedures and Fees Bylaw 5458 to: i. include 'wildfire hazard' as item (e) in Section 4; and part of the list in Section 8(c); ii. set fees for the processing and approval of wildfire hazard assessment and post-development inspection reports; and iii. stipulate the amount of holdback monies held by the CRD to be released upon compliance	Manager of Planning Services; planning staff	High	2 years (2027)	Staff time for internal meetings, preparation of the bylaw update, and presentation to Board of Directors for approval	The Manager of Planning Services deems that updated Development Procedures and Fees Bylaw 5458 accurately reflects CRD costs related to processing development and building permit application	To account for the realistic costs shouldered by the CRD to manage the effective implementation and ongoing management of a wildfire hazard development permit area to mitigate the impact of wildfire as a natural hazardous condition

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Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
Development Considerations						
16. Complete FireSmart Critical Infrastructure Assessments on all CRD owned Critical Infrastructure (CI) within Electoral Area F, such as the 150 Mile Fire Hall, Miocene Fire Hall, transfer stations/landfills, and water/sewer systems.	FireSmart Coordinator	Very High	Immediately	Qualified LFR or similar to complete the FireSmart Assessments	FireSmart CI Assessments have been completed on highest priority CI by 2027	Funding is currently available through the CRI program to complete FireSmart assessments for publicly owned buildings, critical infrastructure, culturally significant sites and/or green spaces.
17. Once a FireSmart Critical Infrastructure Assessment has been completed, implement FireSmart recommendations and mitigation activities resulting from the completed Assessments with the goal of reducing hazard scores as much as feasibly possible.	FireSmart Coordinator, Manager of applicable department for CI	High	Within 5 years (2030)	Labour, machinery, construction materials	FireSmart recommendations have been implemented for a minimum of two CI located within Electoral Area F by 2030.	Funding is currently available through the CRI program to complete mitigation activities on assessed structures, including building materials and labour.
18. Consider amending the *Central Cariboo Area Rural Land Use Bylaw No. 3503* to include land use and development objectives, policies, and/or regulations	Manager of Planning Services	High	Within 5 years (2030)	Communication resources, internal staff capacity, FireSmart and wildfire risk reduction guidance, expertise	The RLUB is amended to incorporate appropriate objectives, policies, regulations or provisions pertaining to land use and	The Central Cariboo Area Rural Land Use Bylaw No. 3503 (RLUB) provides objectives, policies, regulations and provisions respecting land use and development in the areas of Electoral Area D, E, and F **not**

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pertaining to wildfire hazard for various types of development. Examples include: i. FireSmart performance-based exterior "finish/design" and/or landscaping requirements for residential building development in rural and/or settlement areas, such as exterior materials, sprinkler protection systems, etc. ii. Development setback provisions and regulations pertaining to forested areas in rural and/or settlement areas.				required for mapping wildfire hazard	development and the wildfire environment	covered under the 150 Mile Area and Williams Lake Fringe Area OCPs. The current RLUB does not contain objectives, policies or regulations relating to wildfire hazard in land use or development planning for rural areas. Funding is currently available through the CRI program to establish Development Permit Areas for Wildfire Hazard and incorporate FireSmart principles.
19. Revise the Development Permit application and approval process to ensure the following: i. Bolster language within the Development Approval Information	Manager of Planning Services	High	Within 5 years (2030)	Internal staff capacity	The Development Permit application and approval process is amended to ensure that wildfire is being considered into all types of planning and	Funding is currently available through CRI Program to amend requirements for zoning and development permits, including referral processes for new developments to ensure multiple

CRD Electoral Area F CWRP Action Plan						
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ii. Bylaw 5008 pertaining to wildfire hazard assessment reports. clearly stipulate guidelines or requirements for development approval such as creating FireSmart development guidelines, or creating a terms of reference to ensure standards for wildfire hazard assessment reports required for new development.					development throughout the CRD.	departments, including the fire department and/or emergency management personnel, are included.
Interagency Cooperation						
20. Continued active participation in the Williams Lake & Area Community Wildfire Roundtable to work towards effective and efficient emergency planning, vegetation/fuel management, and communication protocols	Manager of Emergency Program Services, Emergency Program Coordinator,	Very High	Ongoing	Communication and organizational resources, meeting space	Hold a minimum of one meeting per year with all primary and secondary members involved	Funding is available through the CRI program to support participation in and organization of interagency meetings

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
surrounding the Williams Lake area. The established Roundtable acts as the Community FireSmart and Wildfire Resiliency Collaborative that is required to receive ongoing CRI funding for FireSmart and wildfire risk reduction activities.	FireSmart Coordinator					
21. Participate in an integrated fuel management / prescribed fire planning table in collaboration with representatives from the Ministry of Forests Cariboo-Chilcotin District, BC Wildfire Service Cariboo Fire Centre, local First Nations, municipal governments (Williams Lake, Quesnel, 100 Mile House), BC Parks, and local forest licensees (First Nations Woodland License, Community Forest, and	CRD FireSmart Coordinator	Very High	Immediate and ongoing	Communication and organizational resources, meeting space.	Collaborative efforts are made to discuss and support the integration of fuel management planning across jurisdictional boundaries. This could include the development of a 5- year plan for fuel management through a variety of funding sources throughout the Cariboo.	The proposed fuel management units within this CWRP are located on provincial crown land, including Community Forest, First Nations Woodland License, and Woodlot tenures. Collaboration with other land managers is integral to effective implementation of fuel treatments on identified public forested areas. Funding is currently available through the CRI Program to support meeting costs.

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
Woodlot License tenure holders).						
22. Provide Indigenous cultural safety and humility training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.	Manager of Intergovernmental Relations	Very High	Immediate and ongoing	Communication and organizational resources, meeting space.	Develop training and educational materials in collaboration with First Nations that identify cultural sensitivities and considerations for effective and respectful emergency management coordination and distribute training materials and/or deliver presentations to staff.	Funding is currently available through the CRI Program to support Indigenous cultural safety and humility training to emergency management personnel
23. Send staff from the CRD Emergency Program Services, Protective Services, or other relevant local government departments to attend the annual *Wildfire Resiliency and Training Summit*.	Manager of Emergency Program Services, Manager of Protective Services	Moderate	Annually	CRI funding for attendance and disbursements. Eg: Transportation and travel costs	A minimum of two CRD staff attend the Wildfire Resiliency and Training Summit each year	Funding is currently available through the CRI program to send up to 4 staff per eligible applicant. Eligible costs include conference fee and travel (including accommodations and per diems). Staff wages and costs related to back-filling positions are not eligible for funding.

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
Cross-Training						
24. Provide cross-training opportunities to CRD Emergency Program Services and Protective Services staff, and other applicable personnel to further build capacity and redundancy within and between departments. Examples of cross training courses include: I. Local FireSmart Representative (LFR) training II. FireSmart BC Farm and Ranch training (required in order to conduct Farm and Ranch Assessments) III. EMRG-100 - Introduction to Emergency Management in Canada IV. ICS-100 - Incident Command System	Manager of Emergency Program Services, Manager of Protective Services	High	As required based on needs of staff	CRI Funding and enrollment in training courses	Redundancy of all critical skills relating to FireSmart and Emergency Management within the CRD Emergency Program and Protective Services and other applicable departments	Funding for cross-training courses for Emergency Management staff is currently available through the CRI program

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
25. Provide ongoing cross-training opportunities for local firefighters in the CRD Volunteer Fire Departments, including the Wildwood VFD. Examples of wildfire suppression training courses include: I. S-100 – Basic fire suppression and Safety II. S-185 – Fire entrapment avoidance and safety III. ICS-100 – Incident Command System introduction IV. SPP-WFF1 Wildland Firefighter Level 1 (includes S-100, S-185, ICS-100) V. WSPP-115 - Wildland Structure Protection Program (training for structure protection unit crews)	Regional Fire Chief	Moderate	Annually	Facility to hold the training, potentially some basic suppression equipment and facility to hold training	Successfully hold at least one wildfire suppression training course for local structural firefighters. This could include firefighters from multiple Fire Departments across Electoral Areas.	Funding for cross-training courses for fire fighters is currently available through CRI program

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
26. Identify if there are any established volunteer fire fighters within the CRD who have a strong interest in training to become prescribed fire practitioners. Courses and training have become available for skilled fire practitioners to expand their skills and knowledge towards becoming conversant in the use of prescribed fire for ecological restoration and wildfire prevention.	Regional Fire Chief	Low	Immediately and ongoing	Skilled practitioners, approval from the local BC Wildfire Service Wildfire Prevention Officer or Prevention Specialist	Skilled practitioners, such as volunteer fire fighters, show interest in working towards developing prescribed burning skills and knowledge.	Prescribed fire is the planned and intentional use of fire on a specific land area. It is one of the most ecologically appropriate means for achieving a range of objectives including reducing the potential for large, intense wildfires. The BC Wildfire Service's Prescribed Fire program recognizes the need to build capacity and increase the number of skilled practitioners to undertake prescribed burning.
Emergency Planning						
27. Update the CRD Emergency Plan to reflect updated emergency legislation, area demographics, and emergency planning from neighbouring First Nations and local governments.	Manager of Emergency Program Services	Very High	Within 5 years (2030)	Communication resources, internal staff capacity, emergency management guidance	An updated comprehensive emergency management plan for the CRD is completed by 2030 .	The CRD is currently waiting for the finalization of the new *Emergency and Disaster Management Act* (EDMA) regulations before completing necessary updates to their Emergency Plan. The CRD has taken steps to further engage with First Nations regarding emergency planning.

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
28. Ensure strong emergency communication strategies are developed and maintained between the CRD and local First Nations, Tsq̓éscen̓, ?Esdilagh, Xatśūll, Esk'etemc, and Williams Lake First Nations within Electoral Area F. This includes maintaining living databases of appropriate contacts within each Nation. Nations should be contacted regarding emergency wildfire events occurring on their traditional territory. This will ensure the applicable Nation is informed and involved in emergency planning and response as it relates to their members, lands, and values.	Manager of Emergency Program Services, Manager of Intergovernmental Relations	Very High	Immediate and ongoing	Communication resources and relationship building, internal capacity to maintain contact databases	Strong communication and working relationships are built and maintained between the CRD and First Nations within the Cariboo Region to ensure human life and safety, and values on the landscape are protected.	During interviews with local Indigenous Government staff, Nations expressed the importance of being notified immediately during wildfire events and involved in decision making regarding emergency response on their territory.
29. During emergency planning, consider the number of residents throughout Electoral Area F that may be more vulnerable or at higher	Manager of Emergency Program Services	Very High	Immediate and ongoing	Census data	Vulnerable persons are considered during emergency planning	Consideration of persons with vulnerabilities during emergency planning can help inform targeted wildfire mitigation and emergency planning activities needed to assist

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
risk during an emergency evacuation event due to factors such as: i. Unreliable cell phone coverage or internet bandwidth resulting in delayed or unsuccessful communication, ii. Residents who are elderly, have limited mobility, or may require additional support during an evacuation.						more vulnerable populations. Funding is available under the CRI program to undertake eligible residential mitigation work for seniors, elders, people with limited mobility or vulnerable populations.
30. Apply for UBCM's *Public Notification and Evacuation Route Planning*[6] funding stream and assess areas throughout the Cariboo Region that are particularly vulnerable due to isolation, limited evacuation routes, etc. Develop a comprehensive evacuation plan that thoroughly considers	Manager of Emergency Program Services	Very High	Within 5 years (2030)	UBCM funding, internal staff capacity, mapping and spatial data analysis	Evacuation route planning completed for Electoral Area F communities	Public engagement within Electoral Area F revealed that evacuation safety was a primary concern for many residents in remote communities. They expressed the desire for clearly delineated evacuation route options. The intent of this UBCM funding stream is to support eligible applicants to develop Evacuation Route Plans and/or Public Notification Plans that

[6] Public Notification and Evacuation Route Planning. UBCM.

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
evacuation options and includes an inventory of private roads and all potential egress routes.						provide information for First Nations, local governments, and community members in the event of an emergency.
31. Promote and encourage all Electoral Area F residents to subscribe to the CRD's emergency public notification system, VoyentAlert! Emergency notifications can be delivered via email or phone. These notifications are critical to ensuring residents are receiving the same important information regarding emergencies impacting their area.	Manager of Emergency Program Services, FireSmart Coordinator	High	Immediate and ongoing	Communication resources	Develop a subscription tracking system with the goal to increase VoyentAlert! subscription rates by 10% annually.	The current subscription rate for VoyentAlert! within the Cariboo region (this includes municipalities, as well as First Nations reserves) is approximately 40% of the population.
32. Organize and/or participate in cross-jurisdictional meetings, tabletop exercises, or mock scenarios specifically focused on wildfire preparedness in the South Cariboo Region. This should occur in collaboration with emergency management staff from local	Manager of Emergency Program Services	High	Annually	Communication and planning resources, facility and funds to hold meeting/exercise	A minimum of one cross-jurisdictional meeting/tabletop exercise/mock scenario is held per year	Participation and involvement in cross-jurisdictional emergency tabletop exercises was expressed by multiple First Nations during engagement. Funding to hold wildfire preparedness meetings/exercises is currently available through the CRI program.

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
First Nations and neighbouring municipal governments.						
33. Assess and inventory FireSmart Structure Protection equipment located within the 150 Mile House and Miocene Fire Departments. It is recommended that Fire Departments have functioning Structure Protection Trailers, where feasible. Apply for funding to purchase any missing equipment to complete a fully stocked Structure Protection Unit.	Regional Fire Chief	Moderate	Complete inventory assessment by fall 2026. Equipment need purchases should be fulfilled as soon as possible	Suitable space to store the trailer and equipment, trained response crew to employ Structure Protection Equipment/Trailer	The Miocene Fire Department owns one full Structure Protection Trailer within 5 years.	Funding is currently available through the CRI program to purchase FireSmart Structure Protection equipment. The equipment is funded in four phases for a complete Structure Protection Trailer. Additionally, training is available for structural fire fighters for utilization of Structure Protection Equipment/Trailers.
34. Continue with the Operational Community Liaison Program through the CRD's Emergency Operations Centre.	Manager of Emergency Program Services	Moderate	Ongoing	Public communications, community members interested in acting as OCLs	Community members as informed about the OCL Program and interested in becoming Liaisons. This is particularly important for communities not covered under a Fire Protection Area.	The Operational Community Liaison (OCL) Program ensures clear and efficient communication between the Emergency Operations Centre and the local communities during emergencies. OCLs will help the EOC understand local needs and conditions. The OCL acts as a bridge between the community and the EOC, offering vital support, local

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
						knowledge, and understanding of community conditions to enhance decision-making, and emergency response and recovery efforts.
Vegetation Management						
35. Encourage residents to remove/reduce flammable vegetation in the Immediate, Intermediate, and Extended zones on their properties. Promote the use of the *FireSmart BC Landscaping Guide* to inform vegetation management best practices and replace flammable vegetation with more fire-resistant landscaping.	FireSmart Coordinator	Very High	Immediate and ongoing	Communication and educational resources	Residents begin to show interest in FireSmart landscaping and actively removing flammable vegetation nearest to homes and structures on their property.	Utilize the funding available through the CRI program for the FireSmart Rebate Program and provide off-site vegetative debris disposal for property owners who have undertaken their own vegetation management in the Home Ignition Zone.
36. Apply for funding to develop fuel management prescriptions for forested areas identified on provincial crown land within the eligible WUIs. It is recommended to start with Priority 1 proposed	FireSmart Coordinator	High	Annually, ongoing	A Registered Professional Forester is required to write all fuel management prescriptions	A minimum of 3-4 fuel management prescriptions are developed for an identified fuel treatment area within the Regional District each year. **This target is Regional District wide**	Funding is available through the CRI program for fuel management prescription development

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
fuel treatment areas as identified within this CWRP. **NOTE: This must occur in collaboration with the Ministry of Forests, First Nations, and other applicable land managers (such as the Likely Xatśūll Community Forest).** Fuel treatment areas should be planned as part of the integrated fuel management / prescribed fire planning table.						
37. Apply for funding to undertake fuel management treatment operations on provincial crown land within the eligible WUIs based on completed fuel management prescription units. **NOTE: This must occur in collaboration with the Ministry of Forests First Nations, and other applicable land managers (such as the Likely Xatśūll Community**	FireSmart Coordinator	High	Every 1-2 years, ongoing	Contractors must be acquired to complete treatment operations	After the fuel management prescription phase is completed, at least 2-3 fuel management treatments are operationally completed for an identified area in the Regional District every 1-2 years. **This target is Regional District wide**	Funding is available through the CRI program for fuel management treatment operations/ Implementation

CRD Electoral Area F CWRP Action Plan						
Action	**Lead(s)**	**Priority**	**Timeframe**	**Resources Required**	**Metric for Success**	**Rationale/Notes**
Forest). Fuel treatment units should be implemented as part of the integrated fuel management / prescribed fire planning table.						
38. Develop a roster of local contractors, crews, or individuals qualified to complete vegetation management on private properties. This includes tree removal, pruning, etc. Make the roster available to residents on the CRD website or by other means suitable for the community.	FireSmart Coordinator	High	Immediate and ongoing	Locally available arborists, contractors.	A roster of local contractors is developed, maintained, and made available to the public.	Public engagement within Electoral Area F revealed that many residents are in support of and interested in managing vegetation on their properties to FireSmart standards but are physically unable to complete the work themselves. A list of known, qualified contractors would be informative and useful for implementing FireSmart vegetation management on private property.

Contents

List of Figures

List of Tables

Frequently Used Acronyms

AOI	Area of Interest
AOP	Annual Operating Plan
BCBC	British Columbia Building Code
BC	British Columbia
BCWS	British Columbia Wildfire Service
BEC	Biogeoclimatic Ecosystem Classification
CFFDRS	Canadian Forest Fire Danger Rating System
CFRC	Community FireSmart Resiliency Collaborative
CI	Critical infrastructure
CLWRR	Crown Land Wildfire Risk Reduction
CIFFC	Canadian Interagency Forest Fire Centre
CRI	Community Resiliency Investment
CWRP	Community Wildfire Resiliency Plans
DP	Development Permit
DPA	Development Permit Area
EMCR	Emergency Management and Climate Readiness
EMP	Emergency Management Plan
EPA	Emergency Program Act
FBP	Fire Behaviour Prediction System
FCFS	FireSmart Community Funding and Supports
FESBC	Forest Enhancement Society of British Columbia
FMP	Fire Management Plan
FNESS	First Nations Emergency Services Society
FRPA	Forest & Range Practices Act
GIS	Geographic Information Systems
FSCCRP	FireSmart Canada Community Recognition Program
HIZ	Home Ignition Zone
HVRA	Hazard, Risk, and Vulnerability Analysis
LRMP	Land and Resource Management Plan

MOF	Ministry of Forests
MOTT	Ministry of Transportation and Transit
PSOE	Provincial State of Emergency
PSTA	Provincial Strategic Threat Assessment
OCP	Official Community Plan
OFC	Office of the Fire Commissioner
RSWAP	Resource Sharing Wildfire Allocation Protocol
SARA	Species at Risk Act
SOLE	State of Local Emergency
SPU	Structure Protection Units
UBCM	Union of British Columbia Municipalities
VAR	Values at Risk
WRR	Wildfire Risk Reduction
WUI	Wildland-Urban Interface

1.0 Introduction

Wildfire is a natural disturbance agent on the landscape, but with warming temperatures and changing precipitation regimes due to climate change, British Columbia is experiencing a sustained increase in wildfire behaviour and events, particularly in the wildland urban interface.[7] The notable wildfire seasons of 2017, 2018, 2021, and 2023, and 2024 highlight the potential impacts wildfire activity can have on communities. Specific to the area of interest (Electoral Area F), the Central Cariboo Complex, including the Wildwood and Spoking Lake fires in 2017 burned over 31,000 hectares in the Williams Lake, 150 Mile House, Miocene and Big Lake areas. The fire resulted in numerous evacuation alerts and orders across the entire western portion of the electoral area.

In response to these events, a Community Wildfire Resiliency Plan (CWRP) has been developed for each of the electoral areas within Central and South zones of the Cariboo Regional District (CRD), including electoral areas D, E, F, G, H and L. Developed by Forsite Consultants Ltd. (Forsite), this plan provides a comprehensive and holistic approach to wildfire risk reduction and resilience for Electoral Area F.

The CWRP addresses the seven FireSmart Disciplines of FireSmart Canada and applies them to the various aspects of wildfire risk reduction and management. The seven FireSmart disciplines/principles include:

1. Education
2. Legislation and Planning
3. Development Considerations
4. Interagency Cooperation
5. Cross-training
6. Emergency Planning
7. Vegetation Management

1.1 Plan Goals

The purpose of the CRD Electoral Area F CWRP is to identify and assess wildfire hazards within and around the communities of Electoral Area F including Likely, Horsefly, Big Lake, North Lakeside and 150 Mile House; assess potential risks and impacts to these communities and infrastructure from wildfires; and provide effective and feasible mitigation strategies to reduce identified hazards and risks. In accordance with the 2024 Community Wildfire Resiliency Plan Instruction Guide, this plan will aim to:

1. enhance capacity and understanding of wildfire risk throughout the CRD and specifically within Electoral Area F,
2. promote collaboration within the CRD and across administrative boundaries,
3. address diverse community needs, and
4. develop actionable and accountable recommendations for effectively reducing wildfire risk.[8]

[7] British Columbia Wildfire Service. (n.d). Prevention. Retrieved July 17, 2024, from https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention

[8] Community Wildfire Resiliency Plan Instruction Guide 2023. British Columbia FireSmart.

1.2 Plan Development Summary

Forsite Consultants Ltd. (Forsite) was retained in 2025 to develop a Community Wildfire Resiliency Plan (CWRP) for six electoral areas within the Cariboo Regional District. These include Electoral Areas D, E, F, G, H, and L. The development of this CWRP for Electoral Area F included the following components:

1. **Gathering and analysis of background information:** A thorough review of existing relevant plans and compilation of spatial data to help inform this CWRP.
2. **Identification of human and natural values-at-risk:** Development of a values-at-risk spatial database for Electoral Area F through information provided by the Cariboo Regional District, partner and stakeholder engagement, public engagement meetings and surveys, and Indigenous Government interviews and community meetings.
3. **Public Engagement:** In-person open house meetings were held in each of the six Electoral Areas for this project throughout the Regional District to elicit local input and feedback into the development process of this plan. Feedback and input were utilized to inform recommended action items.
4. **Indigenous Government Engagement:** Forsite, alongside CRD staff, completed in-person meetings with Indigenous Governments and technical staff from First Nations with traditional territories overlapping the southeast Cariboo project area. This included the ?Esdilagh First Nation, Xatśūll First Nation, Tsq̓éscenˈ First Nation, Stswecem'c Xget'tem First Nation, Esk'etemc First Nation, Williams Lake (T'execl) First Nation, and Tŝilhqot'in National Government These meetings were a collaborative effort between the CRD staff, representatives from each of the Indigenous Governments, and Forsite. The purpose of the meetings was to:
    a. Raise awareness of the CWRP planning process,
    b. Create familiarity with FireSmart principles and the language used in resiliency planning,
    c. Build relationships between CRD staff and local Indigenous Governments.
    d. Identify opportunities for future collaboration on wildfire management and other emergency response activities.
    e. Foster mutual understanding and collaboration to support the safety and resilience of the communities.
    f. Ensure that Indigenous interests and perspectives are considered in the CWRP process and future emergency planning.

    Each Nation is currently at their own stage of wildfire resiliency planning and provided valuable information regarding the status of their preparation, planning and response capacity, as well as concerns and opportunities for collaboration with the CRD during wildfire events. Information and themes heard from the meetings with Indigenous Governments were incorporated into the CRD's CWRPs where applicable and utilized to inform recommended action items.
5. **Assessment of local wildfire hazard and risk:** On the ground wildfire threat assessments were completed in forested areas on provincial crown land within the Wildland Urban Interface, adjacent to homes and other values. The results of these assessments were utilized to identify and delineate recommended areas for fuel management treatments.
6. **Development of a risk mitigation strategy with actionable recommendations:** The data and information collected in the above phases provided the necessary content to develop an actionable CWRP that is tailored

to the rural communities within CRD Electoral Area F. The action table provides a comprehensive list of recommendations for the CRD to implement and increase the wildfire resiliency of those communities.

This plan is intended for use by the CRD staff and its partners to guide efforts in wildfire risk reduction and resilience. Comprehensive data collection and engagement with various CRD staff, First Nations, key partners, and the public, ensure a tailored approach specific to Electoral Area F and its communities and values.

1.3 Community Resiliency Investment Program

The Community Resiliency Investment (CRI) Program was announced by the provincial government in 2018 with the goal of providing support and guidance to BC communities to reduce the risk and impacts of wildfire. For municipalities and regional districts, the program is administered by the Union of BC Municipalities (UBCM) on behalf of the Ministry of Forests. The CRI program provides funding to local governments and First Nations to undertake FireSmart planning and activities within their community that help build and support overall wildfire resiliency.

As of 2025, the CRI program requires each community to have an up-to-date **Community Wildfire Resiliency Plan**, a **FireSmart Coordinator position**, and participate in a **Community FireSmart Resiliency Collaborative** in order to be eligible to receive additional funding to undertake other FireSmart activities. This CWRP is designed to meet the requirements and expectations of the CRI program at the time of development; recommendations within the Action Plan are intentionally organized to facilitate future CRI funding applications. However, it is important to note that government funding programs are subject to government budget availabilities and allotment. As such, the CRI program and eligible activities are subject to change annually.

Additionally, the information and recommendations in this report were developed to assist communities in understanding local wildfire risk and provide steps to enhance wildfire resiliency. Local governments reserve the right to utilize funding and implement action items in a manner that best suits the needs of their communities

2.0 Relationship to Other Plans

Numerous plans offer valuable insights to inform the CWRP, providing essential background information and guiding its development. The plans listed in Table 2 were consulted during the CWRP development process to ensure alignment with existing community and land objectives.

Table 2: Key Plans and Relationship to CWRP

Key Plans and Relationships to CWRP		
Plan Type	**Description**	**Relationship to CWRP**
Cariboo Regional District Community Wildfire Protection Plan 2019 Update	The 2019 Cariboo Regional District CWPP CWPP describes local vegetation and analyses local wildfire threat on and directly adjacent to Cariboo Regional District lands. The plan focuses primarily on FireSmart efforts within the community.	The CWPP is the predecessor to the CWRP. This CWRP will build upon the findings and analyses of the previous CWPP and provide actionable recommendations to further enhance wildfire resiliency in the Bella Coola Valley.
Williams Lake Fringe Area Official Community Plan (Bylaw No. 4782)	This official Community Plan (OCP) provides a general statement of the policies of the Cariboo Regional District about the form and character of land uses and servicing requirements in the plan area. The plan policies will guide decisions to be made by the CRD Board of Directors when considering applications for various types of development.	Relevant to this CWRP through the following Key sections: • 4.3.21 Fire hazard consideration for tree retention and expansion • 4.3.49-57 Wildfire • 6.2.8 Encourage residential development that respects the WUI • 7.2.12 Encourage development that minimizes wildfire impact • 8.2.8 Encourage commercial development that respects the WUI • 9.2.5 Encourage planning of industrial building sites use materials that respect the WUI • 11.3.22 Encourage FireSmart principles to existing and new development • 12.3.1 Emergency access requirements for new development • 15.3.4 Coordination with provincial ministries • Schedule F - Wildfire Probability Map.
150 Mile House Area Official Community	This Official Community Plan provides a general statement of the policies of the Cariboo Regional District about the form	Relevant to this CWRP through the following Key sections:

Key Plans and Relationships to CWRP		
Plan Type	**Description**	**Relationship to CWRP**
Plan (Bylaw No. 4660)	and character of land uses and servicing requirements in the plan area. The plan policies will guide decisions to be made by the CRD Board of Directors when considering applications for various types of development.	• 3..3.12-23 Wildfire • 3.3.25 Fire hazard consideration for tree retention and expansion • 9.3.27 Encourage FireSmart principles to existing and new development • 12.3.1 Coordination with Provincial ministries • Schedule E – Wildfire Probability Map
Williams Lake and Area Interface Fire Plan (2005)	The Williams Lake and Area Interface Fire Plan is a collaboratively developed plan that aims to minimize the impacts of fire in the urban–rural interface surrounding Williams Lake, British Columbia.	22 Interface Recommendations apply to the entire interface area and are described and listed in Sections 3–5. Specific, smaller areas of the interface area were assigned a total of 67 actions within Interface Fire Planning Units and are listed as IFPU Actions in Appendix C.
2025 Business Plans – Fire Departments	A plant to identify overall operational and financial capacities, goals, and significant issues & trends of each volunteer fire department within the CRD.	Electoral Area F includes the following firehalls: • 150 Mile Fire Protection (1327) • Miocene Fire Protection (1332)
Cariboo Regional District Emergency Plan (2006)	The purpose of the Cariboo Regional District Emergency Plan is to provide guidance to Board members and staff before, during and after an emergency.	The emergency plan is an all- hazards plan that identifies the authorities, roles and responsibilities among staff and partners within the CRD during and emergency event which includes wildfires, interface fires and evacuations. Section 3. Hazard Risk and Vulnerability Analysis identifies wildland and interface fires as the highest risk category to the CRD.
2025 Business Plan **Emergency Program Service** **All Electoral Areas (1385)**	The Cariboo Regional District Emergency Program Service was created as a result of provincial legislation requiring that Regional Districts develop an emergency management organization and prepare an emergency plan for their jurisdiction. This document outlines the 2025 Business Plan Goals, Rationales & Strategies, significant issues and trends, as well as past years performance.	Goals one through five, as well as the identified significant issues & trends of his plan align with the development and implementation of this CWRP to improve overall emergency response within the CRD, especially as they align with FireSmart strategies and wildfire resiliency.

Key Plans and Relationships to CWRP		
Plan Type	**Description**	**Relationship to CWRP**
2025 CRD Emergency Response & Contingency Plan Lexington Water System	The Objective CRD Emergency Response and Contingency Plan (ERCP) is to provide staff and regulatory agencies with a guideline for handling water utility related emergencies that may impact the Lexington Water System.	Maintaining water system management control during potentially impactful events, such as wildfire is essential to ensure the health and safety of community residents as well as the surrounding environment.
Solid Waste Management Plan	High-level long-term management guide to manage solid waste within the CRD, in accordance with the pollution prevention hierarchy.	Sections within this plan include wood waste management strategies and challenges, including from FireSmart activities and wildfire-related wood debris including: • 2.2.3 Economy • 2.2.5 Climate Adaptation and Mitigation • 2.4.9 Challenges and Opportunities
Cariboo-Chilcotin Land Use Plan (1994)	The Cariboo-Chilcotin Land Use Plan (CCLUP) is a high-level regional plan that provides a framework for land use, conservation, economic development, and sustainable resource use on crown land. The land base is divided into different resource development zones with objectives to guide land use. Additionally, implementation of the CCLUP involved the completion of seven Sustainable Resource Management Plans (SRMPs) covering the entire Cariboo region, Biodiversity Conservation Strategy, Mule Deer Winter Range Strategy, Caribou Management Strategy, and Grasslands Strategy.	Objectives and strategies for land and resource use at a landscape scale impact structure and continuity of vegetation and fuels on the landscape. Stand structure relating to natural disturbances are considered under the following sections of the CCLPU: Fish and Wildlife and Biodiversity Conservation Strategies
Horsefly Sustainable Resource Management Plan (2005)	This SRMP provides important spatial reference and explains objectives required to implement the CCLUP. The SRMP is directed by the 90-Day Implementation Process Final Report, which provided detailed area-based resource targets and strategies for timber, range, mining, fish, wildlife, biodiversity conservation, water	Sustainable resource management in the CRD relies on the presence and management of disturbances that alter and enhance the landscape, such as natural wildfire, as well as the implementation of prescribed and cultural fire in a sustainable manner. Relevant section that inform fire management, use and vegetation management include: • 4. First Nations

Key Plans and Relationships to CWRP		
Plan Type	**Description**	**Relationship to CWRP**
	management, tourism, recreation, agriculture and wildcraft/agro-forestry.	• 6.2 Forest Health • 6.3 No-Harvest Areas • 6.5.3 Wildlife Tree Retention • 6.5.6 Coarse Woody Debris
Biodiversity Conservation Strategy (1996)	The biodiversity conservation strategy was prepared as part of the CCLUP implementation process. The strategy established Landscape Units, biodiversity emphasis options, and forest seral targets for the Cariboo-Chilcotin region.	Biodiversity objectives and strategies impact the structure and continuity of vegetation and fuels at the stand level and landscape level. Relevant objectives/strategies pertaining to stand type and structure include: • Distribution of forest seral stages, • Patch size distribution
Mule Deer Winter Range Strategy (2006)	The CCLUP Integration Report mandated the development of mule deer winter range plans and objectives. The Mule Deer Winter Range Strategy in the CCLUP area guides forest harvest planning to restore and maintain mule deer winter range habitat suitability. The strategy provides practical direction for planning and practices at both the landscape and stand levels to integrate mule deer habitat values with timber development. It also provides the framework for the development of spatially defined legal Orders for which winter range management measures apply.	Objectives and strategies for managing mule deer winter range habitat impact the structure and continuity of vegetation and fuels at the stand level and landscape level. Relevant objectives/strategies pertaining to stand structure include: • Stand age structure, • Tree species composition, • Size and distribution of harvest openings.
Mountain Caribou Strategy (2000)	Mountain caribou are a red-listed species in BC. The CCLUP Integration Report mandated the completion of a caribou strategy which includes an identification of 'modified harvest' and 'no harvest' areas for caribou. The strategy presents targets for mountain caribou. It also provides the framework for the development of spatially defined legal Orders for which wildlife habitat measures for caribou apply.	Legal requirements for species at risk habitat impact the structure and continuity of vegetation and fuels at the stand level and landscape level. In particular, spatially defined "No Harvest" areas could impact active management of vegetation and fuels on the landscape.

Key Plans and Relationships to CWRP		
Plan Type	**Description**	**Relationship to CWRP**
Cariboo-Chilcotin Grasslands Strategy - Forest Encroachment onto Grasslands and Establishment of a Grassland Benchmark Area (2001)	The grasslands strategy establishes and maintains a grassland benchmark area within which forest encroachment will be controlled, to protect values for both livestock grazing and biodiversity.	A principal factor of forest encroachment into grasslands is the reduced frequency of grassland fires over the last century from the effects of colonization on indigenous peoples and practices. The strategy recognizes the use of prescribed fire as a method to control tree encroachment and maintain or restore grassland ecosystems.

In addition to existing plans, community bylaws were reviewed for their relevance to the CWRP, as outlined in Table 3.

Table 3. Key Bylaws and Relationship to CWRP

Key Bylaws and Relationships to CWRP		
Plan Type	**Description**	**Relationship to CWRP**
CRD Central Cariboo Area Rural Land Use Bylaw No. 3503	A rural land use bylaw for the Central Cariboo Rural Planning Area, Parts of Electoral Areas D, E and F	The purpose of this rural land use bylaw is to provide a statement of the objectives, policies, regulations and provisions of the Cariboo Regional District Board of Directors respecting present and proposed land use and development in the Central Cariboo Rural Planning Area. Opportunity exists to incorporate considerations for wildfire and FireSmart practices as this bylaw currently makes no mention of either.
CRD Building Bylaw No. 4997	A bylaw of the Cariboo Regional District, in the Province of British Columbia, to regulate the construction, alteration, repair, moving or demolition of buildings and structures.	Local Building Bylaws must adhere to the BC Building Code.
Development Approval Information Bylaw No. 5008	A bylaw to establish regulations for requiring Development Approval Information.	Relevant sections include: • S.19 – Wildland Urban Interface Which pertains to a report identifying susceptibility of wildfire relating to development of community services or public facilities.

Key Bylaws and Relationships to CWRP		
Plan Type	**Description**	**Relationship to CWRP**
CRD Fire Departments Bylaw No. 5014	A bylaw of the Cariboo Regional District to provide for the operation of Fire Departments.	Identifies local fire departments operational responsibilities, rights and level of training.
Water Services Management Bylaw No. 5506	A bylaw respecting the management of the water systems within the Cariboo Regional District.	Identifies restrictions, and responsibilities regarding CRD owned and operated water systems, including usage for fire protection services.
Untidy and Unsightly Premises Bylaw No. 4628	A bylaw to regulate untidy and unsightly premises.	Identifies the legal requirement for property owners to maintain tidy and sightly properties and manage accumulation of filth, discarded materials or rubbish or unsightly materials of any kind.
CRD Emergency Program Regulatory Bylaw No. 4595	A bylaw to regulate the Cariboo Regional District Emergency Management Organization as a service of the Cariboo Regional District.	Identifies the positions, roles, responsibilities, power and liability of the Emergency Planning Program Committee.
Cariboo Regional District Williams Lake Fringe and 150 Mile House Area Zoning Bylaw No. 3502	A zoning bylaw for the Williams Lake Fringe and 150 Mile House Planning Area, Parts of Electoral Areas D, E and F	Land use planning tools such as zoning bylaws can influence the layout and placement of homes built in wildfire-prone areas.

3.0 Community Description

The Cariboo Regional District Electoral Area F ranges across an expansive area of 976,100 hectares. This electoral area lies directly east of Williams Lake and shares its eastern border with both the Thompson-Nicola Regional District and the Regional District of Fraser-Fort George. The largest communities in Electoral Area F are Horsefly, Likely, Big Lake Ranch, and Miocene. Smaller communities include Hydraulic, Black Creek, Keithley Creek. Closer to Highway 97, the communities of 150 Mile House, 141 Mile House, and Dugan Lake are also in Area F.

Electoral Area F encompasses a relatively large area in the far eastern portion of the CRD with a largely sparse but growing population. The region lies east of Williams Lake, spanning varied terrain—from lake-rich horsefly valleys to former gold-rush towns like Likely. Like much of the CRD, Electoral Area F provides a range of outdoor recreational opportunities from lake activities such as swimming, fishing and paddling sports to camping, hiking and trail riding, supported by cabin rental, outfitting camps and recreation sites. Additional Key features of the region include the historic Quesnel Forks townsite and the Likely airstrip. This all contributes to seasonally fluctuating populations within the region.

3.1 Area of Interest

The Community Resilience Investment (CRI) program provides guidance for defining the AOI, which varies depending on the type of local government (e.g., municipality versus a regional district) and structure density. For regional districts the boundary of an electoral area can be the boundary of the AOI. The AOI for this CWRP has therefore been established as the boundary of Electoral Area “F”. In total, the AOI covers approximately 976,000 hectares (Figure 1).

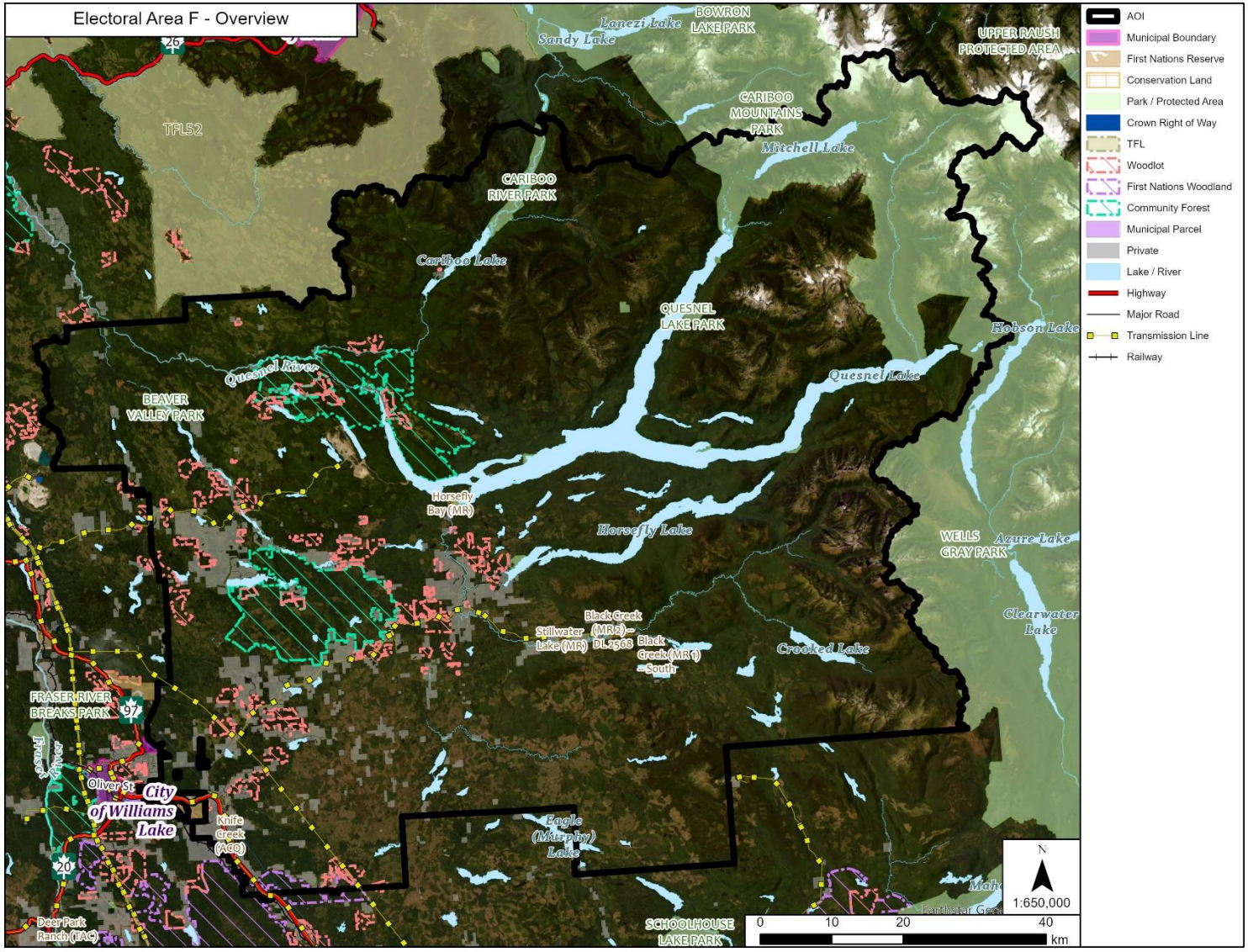


Figure 1: Electoral Area F Area of Interest (AOI) and land jurisdiction.

3.2 Wildland-Urban Interface

The Wildland Urban Interface (WUI) denotes the zone where flammable vegetation interfaces with homes, structures, and critical infrastructure. Wildfires occurring in the WUI present distinctive challenges for stakeholders and local authorities. Such wildfires are often perceived primarily as threats to human lives rather than natural components of the ecosystem. Additionally, jurisdictional boundaries among emergency services can be intricate, leading to coordination challenges among multiple agencies with varying training, equipment, and tactics during emergencies.

For the purpose of the provincial FireSmart Community Funding and Support (FCFS) structure, the eligible WUI within this CWRP is redefined as a maximum of one kilometre from where structure density is greater than six structures per square kilometre[9]. Figure 3 also illustrates the eligible WUI for this CWRP.

[9] FireSmart Community Funding and Supports

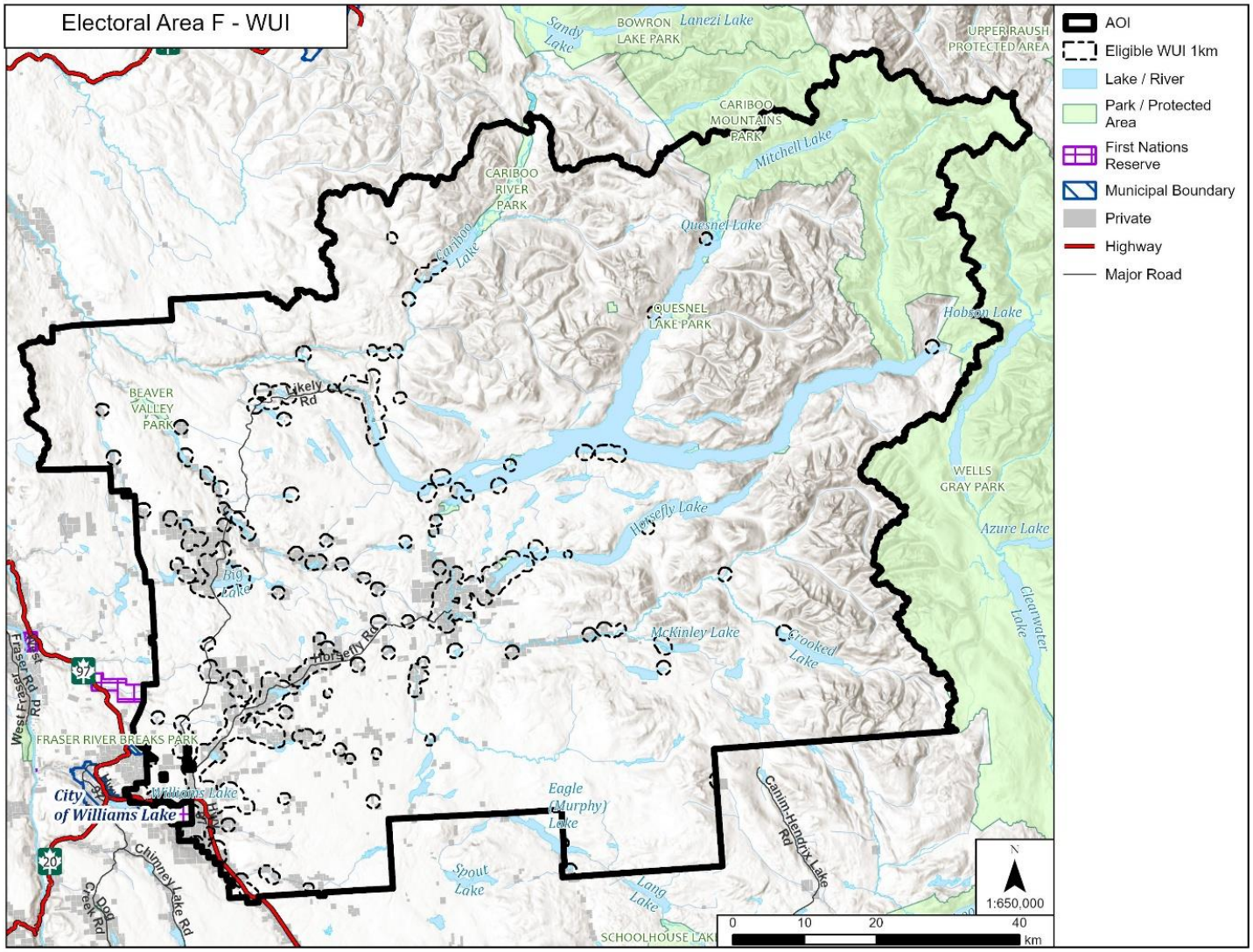


Figure 2: Electoral Area F Wildland Urban Interface (WUI).

Within Electoral Area F, the eligible WUI landbase encompasses 68,000 hectares, constituting approximately 7% of the total AOI. The land jurisdiction within the WUI zone is as follows:

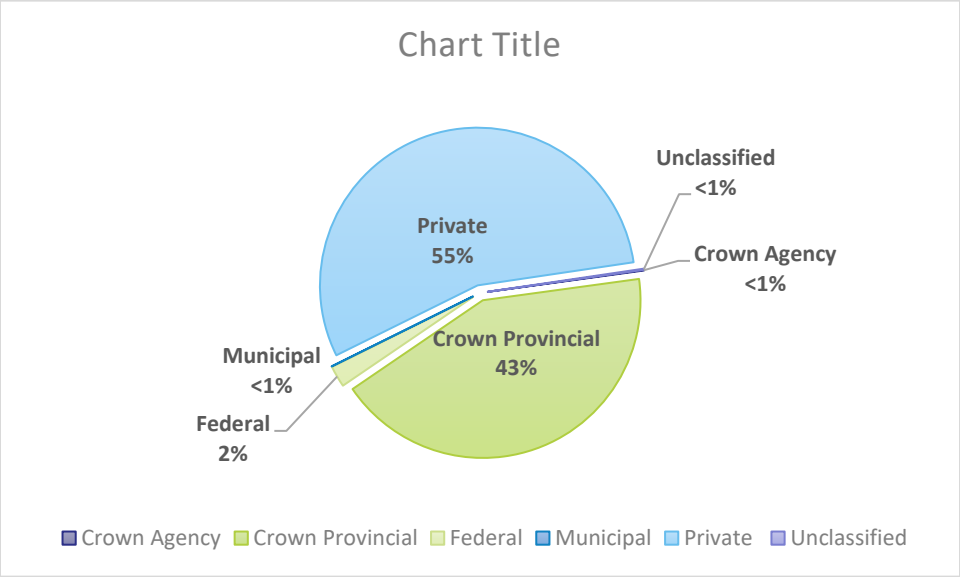


Figure 3: Land jurisdiction within the eligible Wildland Urban Interface for Electoral Area F (Source: BC Data Catalogue).

Over 50% of land within the eligible WUI is constrained by private ownership, followed by 43% crown provincial. Land jurisdiction dictates where provincial funding is eligible to support fuel/vegetation management projects. For regional districts, funding for fuel management treatments is available for provincial land, but not for private land, federal land or IR land, or municipal land; therefore, private landowners and other local governments must play their part in collaboratively reducing wildfire risk on their property and lands to enhance wildfire resiliency across the landscape.

3.3 Community Information

Electoral Area F has a population of 4,792 residents with a median age of 50 years old, indicating that a middle aged and senior population form a substantial part of the community (Table 4). The overall density distribution of the electoral area is considered low with approximately 0.5 people per square kilometre.

Table 4: CRD Electoral Area F community profile[10]

Community Information	
Total Population (2021)	4,792
Total Population (2016)	4,554
Population Percentage Change (2016 -2021)	5.2
Median Age (years)	49.6
Total Private Dwellings	2,491
Private Dwellings Occupied by Usual Residents	2,034
Population Density Per Square Kilometres	0.5
Land Area (square kilometres)	9,740.2

Regional services provided to all electoral areas within the Cariboo Regional District include:

- Emergency Management
- Bylaw Enforcement
- Corporate Administration
- Electoral Area Administration
- Land Use Planning
- Library System
- Waste Management
- Weed Control

Sub-regional services provided by the CRD include:

- Central Cariboo Arts and Culture
- Central Cariboo Cemetery Services
- Central Cariboo Leisure Services
- Central Cariboo Search and Rescue
- Central Cariboo Victim Services

Local services within the electoral area include:

- 150 Mile Fire Protection
- Miocene Fire Protection
- Area F Economic Development
- Likely Community Development

[10] Census Profile, 2021 Census by Population – Cariboo F, Regional District Electoral Area

- Lexington Water System
- Horsefly Street Lighting
- 150 Mile House Transfer Station
- Big Lake Transfer Station
- Likely Transfer Station
- Horsefly Transfer Station

3.4 Values at Risk

The following section is a description of the extent to which wildfire has the potential to impact the values at risk (VAR) identified within the Area of Interest. VAR are the human or natural resource values that may be impacted by wildfire; this includes human life, property, critical infrastructure, high environmental and cultural values, and resource values.

3.4.1 Human Life and Safety

Human life and safety are the highest priority in the event of a wildfire. A key consideration is the evacuation and safe egress of threatened areas when necessary. Evacuations can be a complex and dynamic nature of wildfire incidents. Orderly evacuation requires pre-planning and take time to execute. Safe egress routes can be compromised by traffic congestion and accidents, or the dynamics of the wildfire itself.

As the most recent census in 2021, the population within Electoral Area F exceeded 4,700 people, representing an increase of 5.2% from the previous census in 2016 (Statistics Canada, 2023). The population density of is very low, with 0.5 people per square kilometre.

The spread-out nature of residences in rural areas can pose increased challenges for emergency response and evacuation in the event of a wildfire. Additional risk factors to be considered in emergency response and evacuation planning include increased dispersed population during the summer months due to recreation areas, as well as areas with limited egress routes such as Allpress Road and Doyle Road in Miocene, the Winkley Creek area, Likely Street in the Likely area and the east end of Big Lake Road and Big lake West Road in Big Lake.

3.4.2 Emergency Response

Provincial legislation and policies are in place to support local governments during disasters. On November 8, 2023, the new Emergency and Disaster Management Act (EDMA) came into force, replacing the previous Emergency Program Act. The updated legislation reflects the changing nature of emergencies (e.g. global pandemics, climate change), and shifts from focusing on emergency response to the four phases of emergency management: mitigation, preparation, response, and recovery. To support the new legislation, the provincial government is updating and developing regulations in consultation and cooperation with First Nations, and informed by engagement with Indigenous organizations, provincial ministries, municipalities, regional districts, critical infrastructure owners, public sector agencies, service providers, emergency management practitioners and the public.

The CRD Emergency Plan provides guidance and direction for district staff to follow in the event of an emergency within the CRD. The Hazard Risk and Vulnerability Analysis (HRVA), which identifies wildland and interface fires as being the highest risk emergency within the CRD, provides clarification for the levels of municipal, provincial and federal response to emergencies, information on roles and responsibilities for CRD departments during an emergency, and evacuation protocols.

The CRD is currently awaiting finalization of the EDMA Regulations which will inform local authorities on the requirements for emergency management plans to update their current Emergency Management Plan, to align it with the most recent legislation.

3.4.2.1 Methods of Communication

In the event of an emergency or disaster, the CRD Emergency Operations Centre (EOC) may be activated to help coordinate the emergency response. The level of Emergency Operations Centre staffing varies with the specific emergency situation. The Cariboo Regional District uses VoyentAlert! as its platform for emergency alerts and notifications to notify residents about emergency events or major service disruptions, such as Evacuation Alerts or Orders issued in response to wildfires, and other disasters and Critical Service Advisories and notices for affected CRD water systems. Municipalities in the CRD may also use the system to issue emergency alerts and service notices for their community.

The CRD VoyentAlert! system to date includes approximately 25,000 registered recipients. This includes all 12 electoral areas, as well as residents living within Williams Lake, 100 Mile House, Wells, Quesnel and those living on First Nation Reserves. To protect personal privacy, the VoyentAlert! system does not identify the home addresses of individual registered recipients; therefore, it is unclear exactly how many people within each electoral area are recipients of these alerts.

To receive VoyentAlert! Messages, either a cellular, landline or internet connection is required. This may be a limiting factor for many remote areas within Electoral Area F. At times, the RCMP or other response agencies may be deployed to these areas to alert residents of an emergency event.

3.4.3 Fire Suppression Capabilities

The Cariboo Regional District oversees 14 volunteer fire departments (VFD). The CRD has mutual aid agreements with other local fire brigades, municipalities and several First Nations in the region. These agreements allow equipment and manpower from surrounding departments to assist neighbouring services in the event of large fires or multiple incidents happening at the same time. Within the CRD, VFD's are expected to maintain a minimum roster of 15 volunteer members who train once a week for two hours. Minimum requirements for each department include having the following equipment to meet ULC and Fire Underwriters Standards:

- 1 X frontline fire engine
- 1 X frontline water tender
- 1 X reserve tender or engine supporting mutual aid across CRD fire departments

Within Electoral Area F, the CRD oversees two fire departments, 150 Mile House Volunteer Fire Department and the Miocene Volunteer Fire Department. In addition, the Williams Lake Fire Department is in discussion with the regional district to provide services under the CRD Williams Lake Contract Fire Protection Service Agreement to support a portion of electoral areas D, E and F.

The 150 Mile House Volunteer Fire Department operates out of the 150 Mile House area and mainly provides services to part of Electoral Area F but also services a small portion of Electoral Erea E. The 150 Mile House VFD roster includes reserve and auxiliary members with an active list consisting of one chief and two deputy chiefs, as well as several captains, lieutenants and firefighters. Recruitment and retention have been identified as a significant issue and trend for the 150 Mile House department, as well as increasing costs and administrative support. Response to a call out is

not guaranteed and relies on volunteer availability. The 150 Mile House VFD currently operates the following apparatuses.

- 1 X Fire Engine
- 3 X Rescue Pickups
- 2 X Water Tenders

The Miocene Volunteer Fire Department operates out of the Miocene area and provides services to a portion of electoral area F. Recruitment and retention have been identified as a significant issue and trend for the Miocene department, as well as increasing costs and administrative support. Response to a call out is not guaranteed and relies on volunteer availability. The 150 Mile House VFD currently operates the following apparatuses.

- 1 X Fire Engine
- 2 X Water Tenders
- 1 X Wildland Unit

The City of Williams Lake and the Cariboo Regional District are negotiating an extension agreement that will see fire protection services provided by the Williams Lake Fire Department (WLFD) to some CRD rural residents. This service includes the portion of Electoral Area F covering North Lakeside. The Williams Lake Fire Department maintains a roster of 43 members: 3 career and 40 paid on-call. All Firefighters are trained to NFPA 1001 standards, with officers all actively progressing toward completion of a minimum Fire Officer 1 training standard. WLFD currently operates the following apparatuses:

- 3 X Fire Engine
- 1 X Ladder Truck
- 2 X Water Tender
- 3 X Rescue Pickup
- 1 X 24’ Hazmat Trailer
- 1 X 16’ Structure Protection Unit Trailer

The Central Cariboo mutual aid agreement currently includes the WLFD, Wildwood VFD and 150 Mile VFD. This agreement allows for any one of these departments to call on another, or all to provide personnel and equipment support during large emergencies, when an individual department’s resources may become overwhelmed or are insufficient.

The remaining rural areas or communities throughout the electoral area fall under the BC Wildfire Service (BCWS) jurisdiction for fire response. For wildfire incidents occurring outside the fire departments response areas, the BCWS may authorize additional suppression support from fire departments. Electoral Area F is located within the Cariboo Fire Centre and is mainly covered by the Central Cariboo Fire Zone with a small portion in the north covered by the Quesnel Fire Zone and a portion of the south by the 100 Mile House Fire zone. Additionally, unincorporated communities such as Horse Fly and Big Lake have formed their own independent volunteer fire brigades.

3.4.4 Electric Power

Electrical power throughout the Regional District is primarily provided by aboveground lines for most of the district, serviced by BC Hydro. In the event of a power outage, the Lexington Water system has a diesel generator as backup source of electoral power. The number of generators owned by private landowners is unknown.

3.4.5 Critical Infrastructure

Critical infrastructure (CI) assets are structures or facilities that are vital to a community's health, safety, security, and economic well-being. Protecting these assets during a wildfire event is crucial for emergency response preparedness, ensuring coordinated evacuations, and maintaining or restoring essential services promptly afterward. Critical infrastructure encompasses emergency and medical services, electrical and gas utilities, transportation networks, water and wastewater systems, social support services, and communication infrastructure. Implementing FireSmart activities around critical infrastructure can significantly reduce wildfire losses and impacts.

Table 5. Critical infrastructure located within Electoral Area F

Critical Infrastructure	Ownership	Site	Location
Refuse Site	CRD	150 Mile House Transfer Station	280 Likely Road
		Big Lake Landfill	3994 Likely Road
		Likely Landfill	6507 Keithley Creek Road
		Horsefly Transfer Station	5601 Horsefly Road
Schools	Cariboo-Chilcotin School District	Likely Elementary School	6163 Keithley Creek Road, Likely
		Big Lake Elementary School	4060 Lakeview Road, Big Lake Ranch
		Horsefly Elementary School	3045 Boswell Street, Horsefly
		150 Mile Elementary School	3081 Hwy 97, 150 Mile House
Water/Sewer	CRD	Lexington Water System	Sutton Road
Fire Halls	CRD	150 Mile House Volunteer Fire Department	3038 Pigeon Road, 150 Mile House
		Miocene Volunteer Fire Department	3386 Spokin Lake Rd, 150 Mile House
Airport	CRD	Likely Airstrip	5267 Spanish Lake Rd. Likely

A description of potential impacts from a temporary or permanent disruption to each critical infrastructure listed in Table 5 during and after a wildfire event, is as follows.

Refuse Site

The solid waste disposal services provided by the 150 Mile House, Big Lake, Likely and Horsefly refuse sites are listed within the CRD Emergency Plan under essential environmental services as they provide environmental protection and sanitary needs to CRD residents. Temporary and/or permanent disruption of these services may create short and/or long-term impacts to the area, affecting the ability of residents to live and businesses to operate in the area. In addition, wildfire encroachment into solid waste disposal areas provides additional fire suppression challenges and increased health risks to emergency services personnel and first responders in the area.

Schools

Temporary and/or permanent disruption to schools may create short and long-term impacts to the community though setbacks in learning opportunities and a potential for a decrease in the local population if schools are to shut down long-term. In addition, during a wildfire event, schools can often provide a place for an incident command post, operational staging area, evacuee center or other additional emergency support services.

Water Services

The CRD has been operating the Lexington Water System since 2019 and services 28 parcels within the North Lakeside community. The Lexington Water System is comprised of a lake intake and pumphouse, with associated pumps, distribution pipes and a reservoir. The system does not include any fire hydrants or the capacity to provide water for community fire protection Regular maintenance, along with protection from wildfire impacts, is crucial to ensure this service is available, at full capacity, when required. In addition, water utilities are listed within the CRD Emergency Plan under essential environmental services as they ensure environmental protection and sanitary needs are met. Temporary and/or permanent disruption of these services may create short and/or long-term impacts to the area, affecting the ability of residents to live and businesses to operate in the area.

Fire Halls

Safeguarding all firehalls within the CRD is essential to ensure the ability of local fire departments to function safely, efficiently and at full capacity. Fire departments can provide several different emergency services during a wildfire event in addition to fire suppression activities, based on their capacity, training and equipment availability. Firehalls also often provide a space for incident command post centers to be housed.

Airports

The Likely Airstrip provides additional means of transportation in and out of the region, via aircraft. This provides an opportunity for additional and often quicker support for transportation of personnel, goods and equipment that may assist in aerial and ground fire suppression activities, evacuations and medevac support. In addition, when surrounding vegetation is maintained, airports grounds can provide large safety zones during a wildfire and may provide strategic locations for incident command posts and/or operational staging areas. The BC Wildfire Service currently maintains a ground crew equipment cache on the Likely Airstrip site for local equipment support.

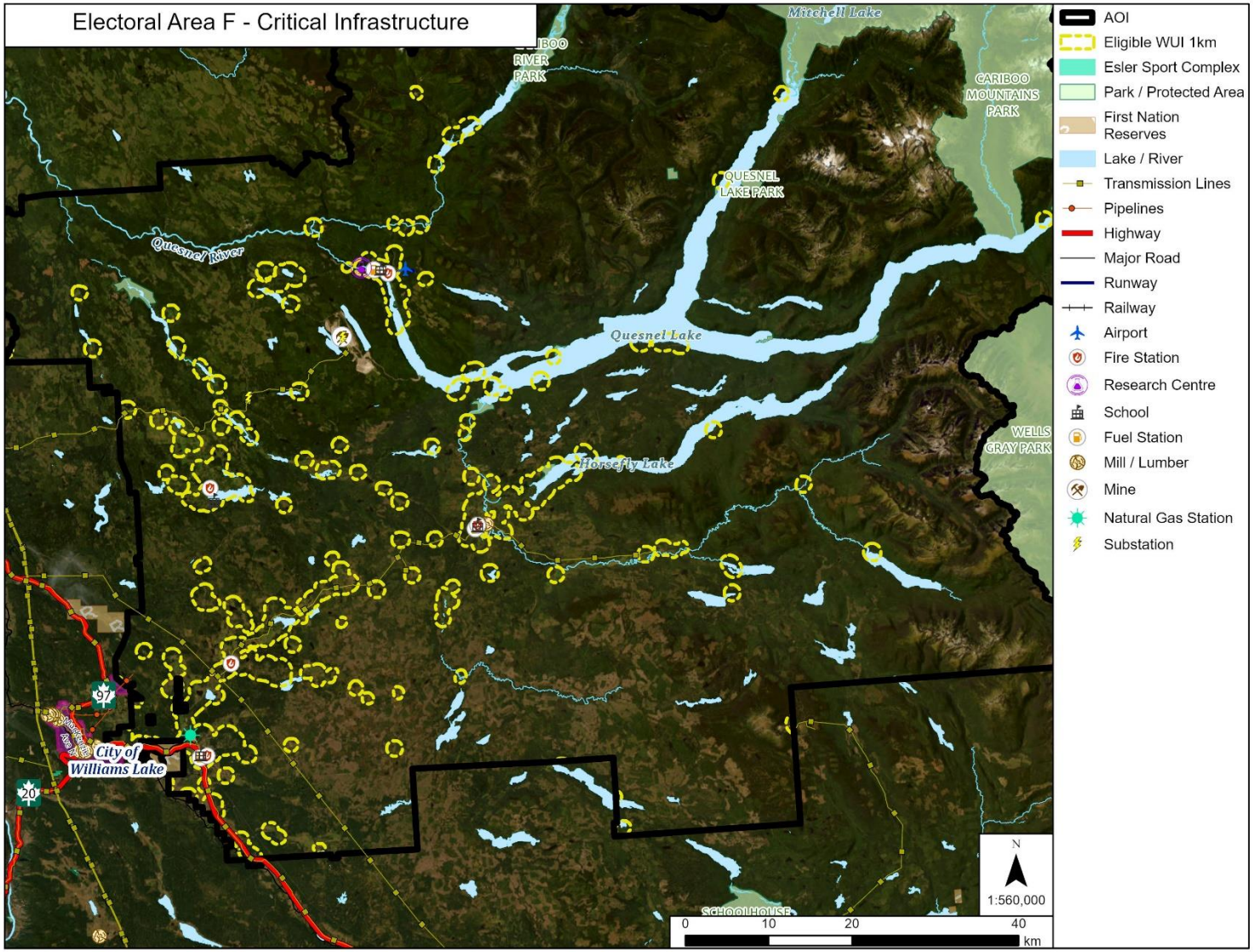

Electoral Area F - Critical Infrastructure
Mitchell Lake
CARIBOO MOUNTAINS PARK
QUESNEL LAKE PARK
Quesnel River
Quesnel Lake
Horsefly Lake
WELLS GRAY PARK
City of Williams Lake
97
20
SCHOOLHOUSE
N
1:560,000
0 10 20 40
km
AOI
Eligible WUI 1km
Esler Sport Complex
Park / Protected Area
First Nation Reserves
Lake / River
Transmission Lines
Pipelines
Highway
Major Road
Runway
Railway
Airport
Fire Station
Research Centre
School
Fuel Station
Mill / Lumber
Mine
Natural Gas Station
Substation

Figure 4: Critical Infrastructure identified within Electoral Area F

3.4.6 Community Watersheds and Water Supply

Potential impacts to watersheds that provide surface water resources for rural communities should be identified as wildfires may affect soil integrity and sedimentation levels, as well as increase likelihood of landslides. These effects can significantly degrade water quality for extended periods of time. In extreme scenarios, the water supply may need to be temporarily or permanently abandoned, necessitating development of new infrastructure. This process may take several years to complete and requires considerable financial investment and funding.

The CRD owns and operates the Lexington water system, within the North Lakeside community in Electoral Area F. The Lexington water system is not rated for fire suppression capacity and therefore does not contain any fire hydrant attachments. All other residential water systems are supplied to private lands by individual underground water wells.

3.4.7 Cultural Values

Electoral Area F is situated within the traditional territory of the Tsq̓éscenˀ, ?Esdilagh, Xatśūll, Esk'etemc, and Williams Lake First Nations. Indigenous cultural sites in BC are generally not shared with the public due to their sensitive and confidential nature. Local First Nations have the right to keep access to these resources private. Due to an extensive and uninterrupted First Nation presence throughout the region, wildfire and associated suppression operations have the potential to inadvertently impact or destroy cultural heritage resources. Any planned activities or treatments for the purpose of wildfire mitigation must be appropriately communicated to local First Nations and allow for meaningful engagement throughout the project.

The the Tsq̓éscenˀ, ?Esdilagh, Xatśūll, Esk'etemc, and Williams Lake First Nations have all indicated that cultural sites exist across their territory and requested that once proposed Fuel Treatment Unit sites have been identified, prior to any treatment work being implemented, they would like the opportunity to review maps and identify and culturally significant sites that may be impacted and provide guidance on how to respectfully proceed. This process will require clear and respectful collaboration between both the First Nation involved and CRD staff to be successful.

The Horsefly Sustainable Resource Management Plan[11], Section 4 identifies the commitment to work with First Nation on government-to-government bases, including objectives to better understand and incorporate First Nations Traditional Knowledge (TK), including the use of fire as a resource and land management tool.

Heritage sites within the Cariboo Regional District, as identified through the CRD Community Heritage Registry, include buildings, structures and/or landscapes that hold significant cultural, historical or natural value to the community. Identification and protection of these sites from wildfire impacts is important as they can provide value in fostering a sense of identity, provide educational and economic opportunities, conserve environmentally significant habitats, and contribute to the overall well-being of the community. Heritage sites within Electoral Area F include the **Quesnel Forks**, **150 Mile Little Red Schoolhouse**, **Sugar Cane Church**, and **Chemo RV**.

[11] Horsefly Sustainable Resource Management Plan. https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/cariboo/cariboochilcotin-rlup/horsefly-srmp

3.4.8 High Environmental Values

The BC Conservation Data Centre (CDC) provides information about species and ecosystems at risk through the BC Species and Ecosystems Explorer, and CDC iMap. Recorded occurrences of Red and Blue listed animals and ecological plant communities at risk within Electoral Area F have been summarized in Table 6. Red listed species represent any species or ecosystem that is at risk of being lost (extirpated, endangered or threatened). Blue listed species are any species or ecosystem that is of special concern.

Table 6. Red and blue listed species found in Electoral Area F

Common Name	Scientific Name	Element Type	BC List Status
Caribou (Southern Mountain Population)	Rangifer tarandus pop. 1	Vertebrate Animal	Red
American Badger	Taxidea taxus	Vertebrate Animal	Red
White Sturgeon (Upper Fraser River Population)	Acipenser transmontanus pop. 5	Vertebrate Animal	Red
Great Blue Heron, herodias subspecies	Ardea herodias herodias	Vertebrate Animal	Blue
American Bittern	Botaurus lentiginosus	Vertebrate Animal	Blue
Townsend's Big-eared Bat	Corynorhinus townsendii	Vertebrate Animal	Blue
Northern Myotis	Myotis septentrionalis	Vertebrate Animal	Blue
Painted Turtle - Intermountain - Rocky Mountain Population	Chrysemys picta pop. 2	Vertebrate Animal	Blue
Yellow-banded Bumble Bee	Bombus terricola	Invertebrate Animal	Blue
Baltic rush - field sedge	Juncus balticus - Carex praegracilis	Ecological Community	Red
Douglas-fir / Rocky Mountain juniper / kinnikinnick	Pseudotsuga menziesii / Juniperus scopulorum / Arctostaphylos uva-ursi	Ecological Community	Red
hybrid white spruce / mountain alder / lady fern	Picea engelmannii x glauca / Alnus incana / Athyrium filix-femina	Ecological Community	Red
long-awned three-square bulrush Alkali Marsh	Schoenoplectus pungens var. longispicatus Alkali Marsh	Ecological Community	Red
seacoast bulrush Alkali Marsh	Bolboschoenus maritimus var. paludosus Alkali Marsh	Ecological Community	Red
seaside arrow-grass Marsh	Triglochin maritima Marsh	Ecological Community	Red
Nuttall's alkaligrass - foxtail barley	Puccinellia nuttalliana - Hordeum jubatum	Ecological Community	Red
awned sedge Fen - Marsh	Carex atherodes Fen - Marsh	Ecological Community	Blue
common cattail Marsh	Typha latifolia Marsh	Ecological Community	Blue

common spike-rush Herbaceous Vegetation	Eleocharis palustris Herbaceous Vegetation	Ecological Community	Blue
cryptic paw	Nephroma occultum	Fungus	Blue
Sprengel's sedge	Carex sprengelii	Vascular Plant	Blue
whitebark pine	Pinus albicaulis	Vascular Plant	Blue

The Cariboo-Chilcotin Land Use Plan (CCLUP) and the associated Horsefly Sustainable Resource Management Plan and Biodiversity Conservation Strategy identify specific management polygons and areas with best management practices and strategies for conducting work in areas with specifically identified wildlife species and species groups, as well as habitats. This may include guidelines around riparian area protection and the identification and retention of wildlife trees and coarse woody debris for habitat, as well as plant and animal species specific considerations when conducting work within planned treatment areas. One species of consideration being the mountain caribou in the North Cariboo, Barkerville and Wells Gray North sub-population regions. The Mountain Caribou Strategy identifies areas where modified and no tree harvest should occur in protection of species habitat.

In addition, the implementation of fuel treatment units may complement the management goals of some high-level plans for species management under the CCLUP. For example, the Mule Deer Winter Range Strategy and Cariboo-Chilcotin Grasslands Strategy - Forest Encroachment onto Grasslands and Establishment of a Grassland Benchmark Area conclude that the implementation of prescribed and cultural fire can benefit grasslands, promote native species growth and increase mule deer range. The establishment of fuel treatment areas and long-term maintenance with prescribed and cultural fire is consistent with the goals of these land and wildlife management strategies.

Also, when considering forest health and no-harvest areas within the Horsefly Sustainable Resource Management Plan, exceptions to allow for harvesting may be made when the work being done is to provide aid in the control and management of wildfires.

All site-level vegetation/fuel management activities and operational wildfire risk reduction treatment plans must follow all legal requirements set out in legislation, orders and high-level plans, or consider best management practices for identified environmental resources and species at risk and their habitats. Assistance and advice from a Registered Professional Biologist or other qualified professional may be required prior to the implementation of any wildfire risk reduction activities in the area to determine potential impacts and guide treatment activities.

3.4.8.1 Parks and Protected Areas

Parks and protected areas contribute significantly to habitat and ecosystem protection, enhancing biodiversity across the landscape. They also provide environmental education, stewardship, recreation, and community engagement opportunities.

The following provincial parks have been identified within Electoral Area F:

- **Horsefly Lake Provincial Park**
- **Quesnel lake Provincial Park**
- **Cedar Point Provincial Park**

4.0 Wildfire Risk Assessment

The wildfire risk assessment provides land managers and communities with a decision-making tool used to determine risk mitigation opportunities, increasing the overall effectiveness of wildfire risk reduction planning and activities that support community resilience. Understanding the difference between **wildfire threat** and **wildfire risk** provides context for the risk assessment process and promotes alignment and support for risk mitigation strategies. Wildfire risk differs from wildfire threat in that risk takes into consideration the likelihood and potential consequences of a wildfire event on human values.

Wildfire Risk: the likelihood of fire occurrence, fire behaviour, and its potential negative impacts on human values. Overall wildfire risk-based framework considers the combination of the following:

- Likelihood (or probability) of an unwanted wildfire event occurring,
- Associated fire behaviour; and
- Consequence – the resulting negative impacts to values

Wildfire Threat: a fire's capacity to ignite, spread, and consume fuel, influenced by environmental factors such as topography, vegetation, and weather Three main components are used to define wildfire threat, as follows:

- **Topography** – slope (affecting wildfire rate of spread), and aspect (affecting fuel dryness);
- **Fuel** – loading, size/shape, arrangement (horizontal/vertical), compactness, chemical properties, and fuel moisture; and
- **Weather** – temperature, relative humidity, wind speed and direction, and rainfall.

Together these three components interact to characterize the overall wildfire environment and influence wildfire behaviour (Figure 5).

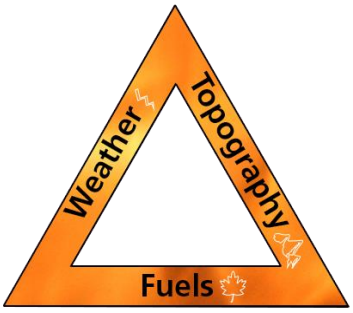


Figure 5. The fire triangle – interacting components that drive a wildfire

4.1 Local Wildfire Environment

Analysis of local wildfire environment factors, such as topography, fuels, and weather facilitate a deeper understanding of their combined effects on fire regimes, which includes frequency, intensity, size, severity, season, and ignition sources. By analyzing fire regime related data, we gain valuable insights into patterns and trends of wildfire activity within a specific area. This knowledge supports informed and effective decision-making for risk reduction and community resilience planning.

4.1.1 Topography

Topography describes components on the landscape that can influence fire behaviour including elevation, slope steepness, and slope direction (e.g., south-facing). Topography also includes prominent land features such as canyons and valleys. These features affect fire behaviour in the following ways:

- **Slope**: Steeper slopes accelerate the preheating and combustion phases of fuels due to rising of hot air and shorter distance between burning and unburned fuels. Fires move faster uphill than they do downhill.
- **Aspect**: Determines amount of sun exposure influencing fuel composition and moisture content. In the northern hemisphere, south-facing slopes receive the most sunlight throughout the day, resulting in dryer conditions and increased flammability of fuels.
- **Elevation**: Influences weather conditions such as air temperature and seasonal moisture levels. Higher elevations generally mean cooler temperatures and slower slow melt rates.
- **Prominent land features**: Prominent features such as valleys can direct, funnel, and concentrate wind flows, increasing fire intensity. The spatial structure of these features can also increase radiant and direct heat transfer.

Electoral Area F contains a portion of the Cariboo Mountain Range and Quesnel Highlands within the eastern half encompassing significant lakes, and the Fraser Plateau in the western half. Within Electoral Area F elevations in excess of 2,500m occur in areas such as Mount Wotzke and Mount Perseus. Other prominent land features include Quesnel Lake and Horsefly Lake. Rural communities and transportation corridors within the Electoral Area are primarily situated at lower elevations along prominent lakes, or flat terrain on the Fraser Plateau (Figure 6).

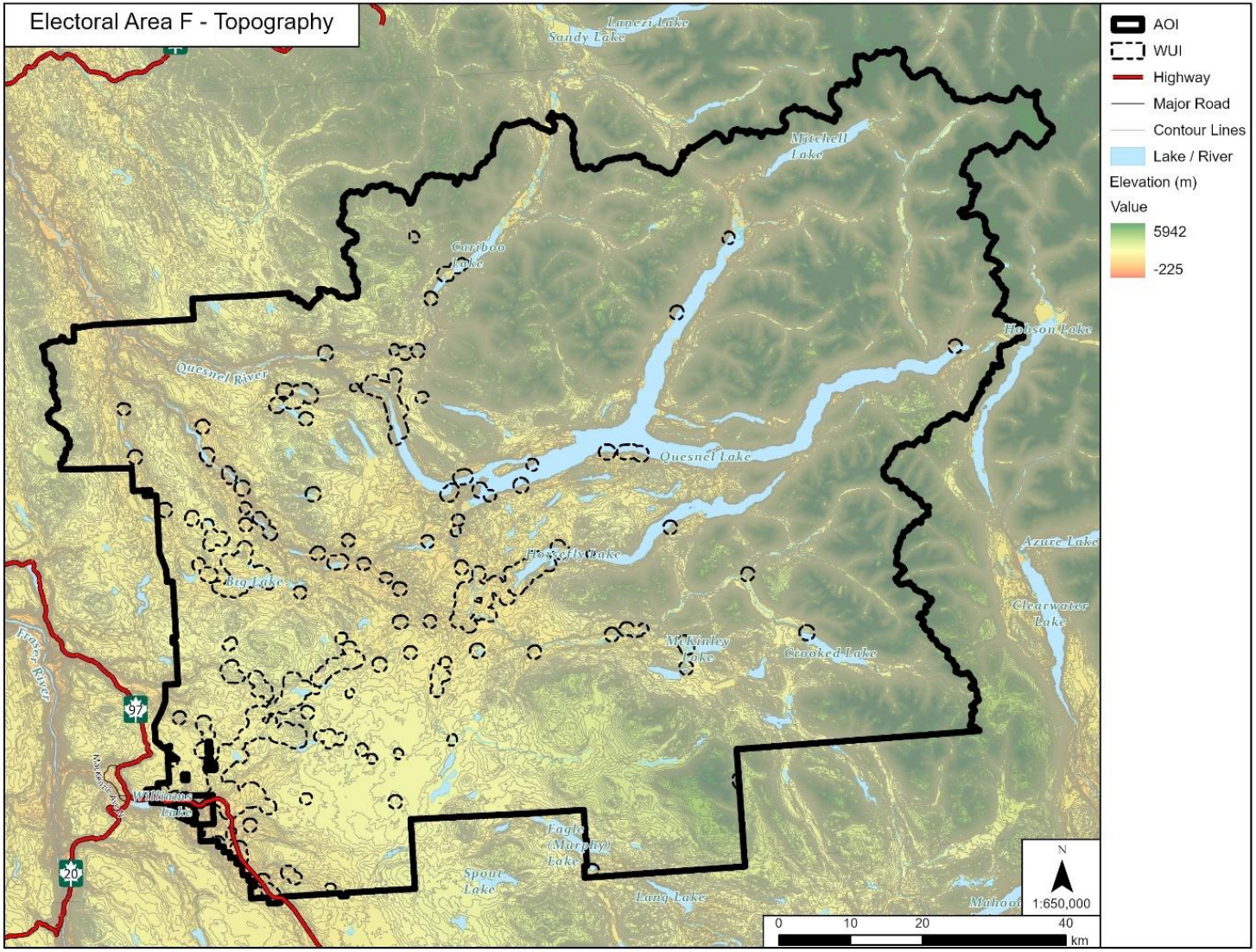


Figure 6: Terrain and Digital Elevation Map for Electoral Area F.

4.1.2 Fuel (Vegetation)

Fuel refers to any flammable material, including vegetation (leaves, bark, trees, duff), that fire burns. It can also include manufactured fuels, such as buildings. The fuel type, dryness, size, and arrangement can influence a wildfire's speed, size and severity. Fuel is the only component of a wildfire that we can control and the most significant (without fuel, a fire cannot burn).

4.1.2.1 Biogeoclimatic Zones

The vegetation (fuels) within any given area of British Columbia can be summarized using the provincial Biogeoclimatic Ecosystem Classification (BEC) system. The BEC system in BC describes and categorizes ecological zones by vegetation, soils, and climate. Regional subzones are derived from relative precipitation and temperature. By understanding the vegetative communities of an area, we can better predict the natural disturbance regime of those ecosystems and the potential effects of wildfire.

The majority of the BEC zones within Electoral Area F are closely divided between the Engleman Spruce - Subalpine Fir (ESSF), Interior Cedar - Hemlock (ICH) and Sub-Boreal Spruce (SBS), based on total area coverage, with several subzone delineations within each (Figure 7). The ESSF zone occupies 31% of the AOI with the Wet Cool (wk) subzone being most prominent and is found along the upper slopes and peaks of the Cariboo mountains. It is characterized by a subalpine boreal climate at high elevations, occurring on all major mountains within the interior plateau. Winters are long and cold, while summers are short and cool. Seasonal precipitation is relatively high in the subzones found within Area F and snowpack can be long lasting with Englemann spruce and subalpine fir dominating the region[12].

The ICH zone follows in occurrence, occupying 30% of the AOI with dominant Wet Cool (wk) and Moist Cool (mk) subzones. This zone is found in the Quesnel highlands, adjacent to the Cariboo Mountains, with a cool to warm temperate climate. With higher precipitation contributing to favourable soil moisture content, forest productivity and tree species diversity is high[13].

The SBS zone is the third most prominent BEC zone in the region, occupying 27% of the AOI, prominently identified by the Dry Warm (dw) subzone. This zone occurs across the east and central portion of the EA, in the more populous region and is characterized by a mild continental climate, with hybrid white spruce, subalpine fir and lodgepole pine contributing to upland coniferous forests[14].

Interior Douglas Fir (IDF) and Sub-Boreal Pine – Spruce (SBPS) each account for approximately 5% of the BEC zones within Electoral Area F and are closely related, occupy the southwest corner of the AOI. The IDF and SBPS zones both experience a summer-dry climate in the rain shadow of the Coast Mountains and are dominated by Douglas-fir and Lodgepole pine, respectively[15][16]. Table 7 provides a summary of all BEC zones/subzones found within the AOI of Electoral Area F.

[12] https://cfcg.forestry.ubc.ca/resources/cataloguing-in-situ-genetic-resources/essf-zone/
[13] https://cfcg.forestry.ubc.ca/resources/cataloguing-in-situ-genetic-resources/ich-zone/
[14] https://cfcg.forestry.ubc.ca/resources/cataloguing-in-situ-genetic-resources/sbs-zone/
[15] https://cfcg.forestry.ubc.ca/resources/cataloguing-in-situ-genetic-resources/idf-zone/
[16] https://cfcg.forestry.ubc.ca/resources/cataloguing-in-situ-genetic-resources/sbps-zone/

Table 7: Biogeoclimatic Ecosystem Classification Zone/subzone and Natural Disturbance Tupe (NDT) Summary for Electoral Area F.

BEC Zone	Subzone	NDT	Area (ha)	% of EA
SBS	dw (dry warm, Horsefly variant)	NDT3	167,343.55	16
SBS	dw (dry warm, Blackwater variant)	NDT3	50,522.13	5
SBS	mc (moist cold, Moffat variant)	NDT3	18,821.49	2
SBS	mh (moist hot)	NDT3	13,058.35	1
SBS	mw (moist warm)	NDT3	16,877.95	2
SBS	wk (wet cool, Willow variant)	NDT2	13,631.85	1
ICH	wk (wet cool, Shuswap variant)	NDT1	10.36	<1
ICH	wk (wet cool, Quesnel variant)	NDT1	203,714.29	20
ICH	mk (moist cool, Horsefly variant)	NDT1	80,199.48	8
ICH	wk (wet cool, Cariboo variant)	NDT1	24,985.15	2
ESSF	mm (moist mild, Raush variant)	NDT2	2.65	<1
IDF	dk (dry cold, Fraser Variant)	NDT4	34,078.44	3
IDF	xm (very dry mild)	NDT4	8,945.33	1
ESSF	wk (wet cool, Cariboo varinat)	NDT1	242,620.79	23
SBPS	mk (moist cool)	NDT3	50,647.44	5
ESSF	mmp (moist mild parkland)	NDT5	1.38	<1
ESSF	wcp (wet cold parkland)	NDT5	50,715.46	5
ESSF	wcw (wet cold woodland)	NDT1	16,474.49	2
ESSF	wcp (wet cold parkland)	NDT5	3,260.03	<1
ESSF	wcw (wet cold woodland)	NDT1	15,725.36	2
IMA	un (undifferentiated)	NDT5	24,772.46	2

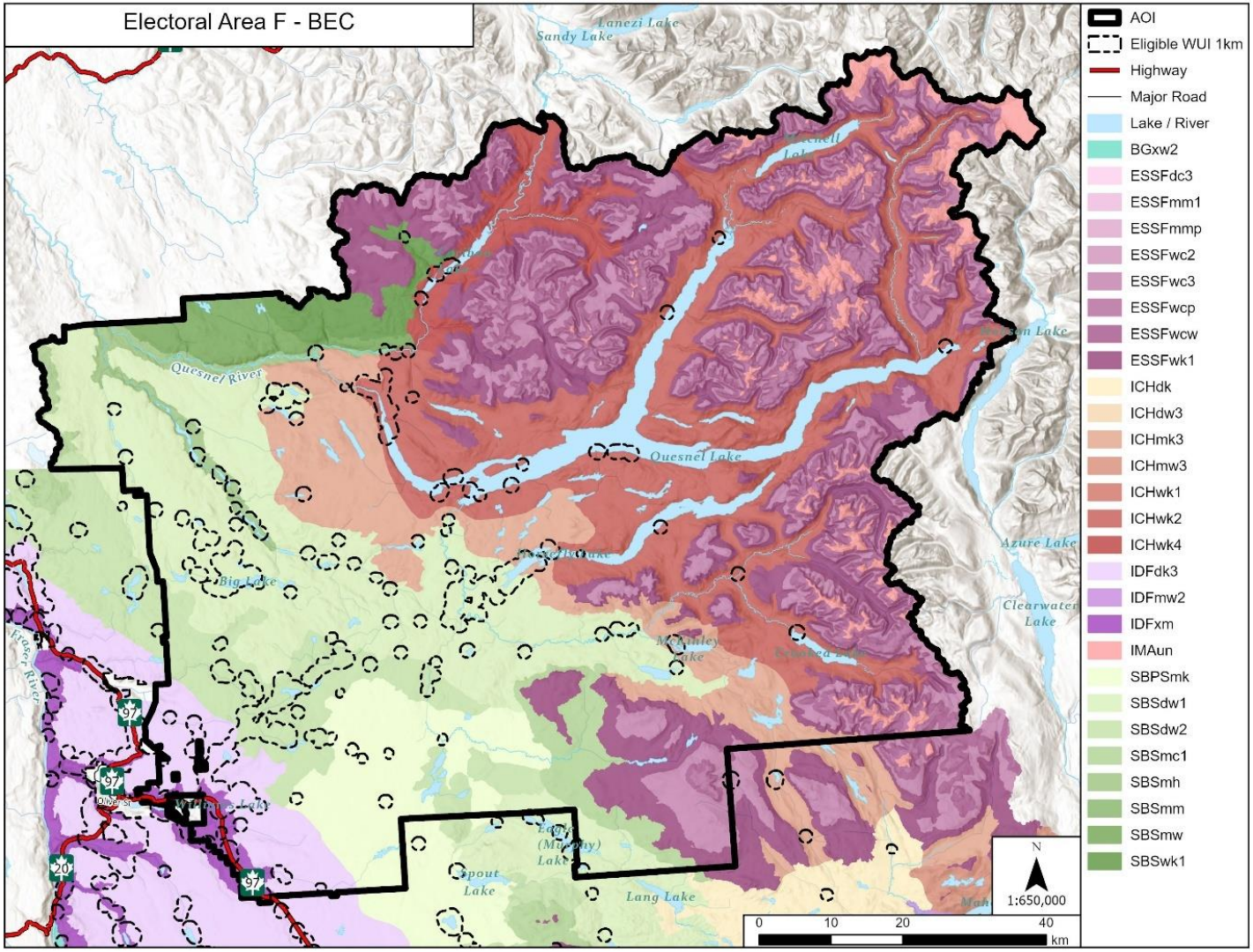


Figure 7: Biogeoclimatic Zones map for Electoral Area F.

4.1.2.2 Natural Disturbance Type

In British Columbia, fire regimes are broadly categorized according to Natural Disturbance Type (NDT) classifications, which consider the frequency and severity of disturbances, such as wildfires. NDTs are closely tied to the BEC Zones and are categorized into five broad disturbance regimes: NDT1 through NDT5 (Table 8).

Table 8: Description of Natural Disturbance Types (NDTs) within British Columbia

Natural Disturbance Type	Natural Disturbance Regime Description	Frequency
NDT 1	Ecosystems with rare stand-initiating events	250 – 350 years
NDT 2	Ecosystems with infrequent stand-initiating events	200 years
NDT 3	Ecosystems with frequent stand-initiating events	100 – 150 years
NDT 4	Ecosystems with frequent stand-maintaining events	4 – 50 years (surface) 250 (stand replacing)
NDT 5	Alpine Tundra and Subalpine Parkland ecosystems	4 - 50 years

Decades of effective fire exclusion, coupled with the suppression of Indigenous cultural burning traditions, have resulted in a fire deficit in certain regions. In British Columbia, these practices have contributed to the densification of forest stands compared to the pre-suppression era in certain areas, consequently elevating the risk of large, high-intensity wildfires[17]. These alterations may disrupt the natural disturbance regime, highlighting the need for proactive management strategies to address these challenges.

Electoral Area F experiences all NDTs in some capacity but is dominated by Natural Disturbance Types 1 and 3, occupying nearly 90% of the AOI, encompassing 57% and 31% respectively. The remainder of the AOI is made up of 7% NDT 5, 4% NDT 4 and 1% NDT 2. NDT 1 is characterized by ecosystems with rare stand-initiating events, with disturbances such as wildfire, generally occurring in small, isolated events creating patchy or irregular landscape patterns. This results in uneven-aged or muti-storied even-aged stands as small patches or individual trees die off in pocket disturbance events. The return interval for disturbances in NDT 1 dependent on the BEC zone and is generally 250 years in ICH and 350 years in ESSF[18].

NDT 3 is characterized by ecosystems experiencing frequent stand-initiating events, with fire being the primary disturbance. Although fire sizes range from small to large, this NDT is where the province historically records the largest fires, with return intervals of 100 to 150 years. Consequently, the landscape exhibits a mosaic of stands of different ages, with individual stands typically even aged, from stand replacing fires[18].

Frequent surface fires historically played an important role in consuming and regulating woody surface fuels, rejuvenating herbs and shrubs species, thinning understory conifer ingrowth, and raising the crown height of overstory trees. This regime of fire maintenance is the easiest to duplicate for wildfire risk reduction purposes,

[17] Parisien, M. A., Barber, Q. E., Bourbonnais, M. L., Daniels, L. D., Flannigan, M. D., Gray, R. W., ... & Whitman, E. (2023). Abrupt, climate-induced increase in wildfires in British Columbia since the mid-2000s. *Communications Earth & Environment*, *4*(1), 309.

[18] Forest Practices Code of BC: Biodiversity Guidebook (1995) https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/cariboo-region/cariboochilcotin-rlup/biodiversity_guidebook.pdf

however the situation is often complicated by decades of fire exclusion and suppression on the landscape, resulting in higher fuel accumulations in these stands.

4.1.2.3 Fuel Types

The Canadian Forest Fire Danger Rating System (CFFDRS) is used as a decision support tool for wildfire management professionals in Canada, used to assess fire behaviour under various conditions. The CFFDRS is made up of two subsystems, 1) the Fire Behaviour Prediction (FPB) System, and 2) the Fire Weather Index System. Together, these components incorporate weather inputs and fuel types to help predict fire behaviour.

For fire behaviour prediction purposes, Canadian forests and grasslands are categorized into different Fire Behaviour Prediction (FBP) System Fuel Types. These Fuel Types have different vegetation species and structure (e.g. vegetation density). Because of this, fire will behave differently in each fuel type. The CFFDRS defines 18 benchmark fuel types based on boreal forest stand attributes. Fuel types are named to reflect fire behaviour in different vegetation groups. However, since fuel types are used to describe an expected fire behaviour, they may not actually reflect the tree species present within the stand. For example, the C3 (Mature Lodgepole Pine) fuel type does not require exclusively mature pine trees to be present, but rather considers the overall forest and fuel complex, including stand density, arrangement, and continuity. As many of the vegetation communities within BC are not suitably represented by the boreal-based FBP fuel types, fuel types should be regarded as a 'best fit' based on best available scientific research and professional knowledge/experience.

Table 9 outlines the FBP fuel types predominantly present within Electoral Area F and Figure 8 displays the extent. More detailed descriptions of these fuel types can be found on the Natural Resources Canada website. [19]

Table 9. Canadian Fire Behaviour Prediction (FPB) System Fuel Types present within Electoral Area F[20]

CFFDRS Fuel Type		Characteristics and Attributes	Percentage of Electoral Area
C3	Mature Jack or Lodgepole Pine	Capable of spreading the fastest among fuel types but requires higher wind speeds and lower fuel moisture due to its mature attributes and higher crown base height (CBH), described as the distance the lowest branches are from the ground surface. Characterizes as fully stocked mature lodgepole pine stands. The forest floor is covered in a continuous moss layer with sparse to moderate shrub coverage. There is minimal coniferous understory and light and scattered dead and down fuels.	26%
C7	Ponderosa Pine – Douglas fir	Lowest rate of spread and lowest fire intensity of the conifer fuel types. Comprised predominantly of Douglas-fir with minor components of lodgepole pine. Structure is uneven-aged, patchy, with gaps in the overstory. The forest floor primarily composed of perennial grasses.	13%

[19] FBP Fuel Type Descriptions. Natural Resources Canada.
[20] FBP Fuel Type Descriptions. Natural Resources Canada.

CFFDRS Fuel Type		Characteristics and Attributes	Percentage of Electoral Area
M1/2 -	Mixedwood – 25-75% conifer Deciduous (M1 leafless, M2 green)	The rate of spread and intensity of fire depends on the conifer/deciduous mix. Higher conifer mix will have faster rates of spread, higher fire intensity and more embers produced. Characterized by stand mixtures of various coniferous and deciduous species, including spruce, lodgepole pine, subalpine fir, birch, and trembling aspen. Stands exhibit wide variability in structure and development with anywhere from 25-75% conifer component. Forest floor is comprised of deciduous shrubs and leaf litter. In the summer, when the deciduous overstory and understory are in leaf (M-2), fire spread is greatly reduced, with maximum spread rates only one-fifth that of spring or fall fires under similar burning conditions (M-1 leafless).	12%
O-1a/b	Grass (O-1a matted grass, O-1b standing grass)	Fastest rate of spread potential. Characterized by continuous grass cover, with no more than occasional trees or shrub clumps that do not appreciably affect fire behaviour. Two subtype designations; O1-a for the matted grass condition common after snowmelt or in the spring, and O-1b for standing dead grass common in late summer to early fall	12%
C-5	Red and White Pine	Has the highest fire weather threshold of all conifer fuel types and requires extreme fire conditions to achieve full canopy fire. Lower rate of spread than other conifer fuel types. Mature stands with tall, mature, closed canopy's with moderately dense understory and shrub layers.	11%
D1/2	Deciduous (D1 leafless, D2 green)	Lower rates of spread, lower ember production and lower fire intensity (than conifer) when trees have leaves (D-2). Often used in urban interface areas to reduce fire behaviour around values. Stands are comprised of >75% deciduous trees and shrubs, including trembling aspen, birch, and cottonwood.	6%
C-6	Conifer Plantation	Moderate fire behaviour and spread rates compared to other coniferous fuel types due to its dependency on CBH and moisture content of moderate to heavy surface fuels. Includes all conifer plantations with closed crown canopy and no understory shrub layer.	3%

CFFDRS Fuel Type		Characteristics and Attributes	Percentage of Electoral Area
C-2	Boreal Spruce	A very volatile fuel type – C-2 produces high intensity and fast-moving fires more easily than other fuel types. Fires can easily become crown fires. Stands are characterized by high-density of conifers, typically spruce, with crowns extending to the ground.	3%
S1/2	S1 – Jack or Lodgepole Pine Slash S2 - White Spruce – Balsam Slash	Slash resulting from clearcut logging. Slash is typically one-to-two seasons old. Low threshold required for high fire intensity.	1%

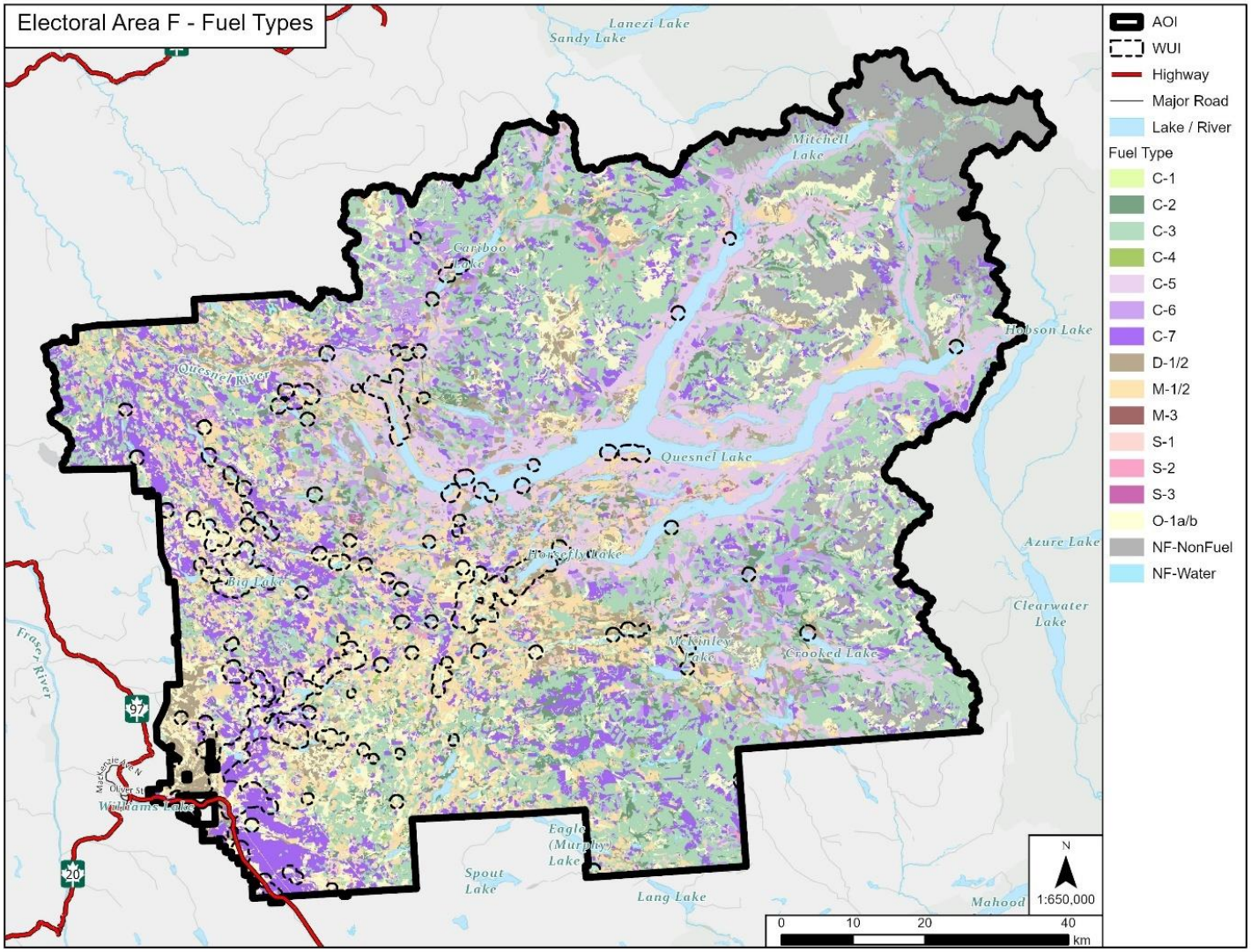


Figure 8: Fire Behaviour Prediction (FBP) Fuel Types present within Electoral Area F.

The most common fuel types found within Electoral Area F are C-3, C-7, M-1/2, O-1a/b, and C-5, with D-1/2, C-6, C-2 and S-1/2 to a lesser extent. Fuel types representing less than 1% of the area and non-fuel types are not listed. C-3 is the most prominent fuel type representing 26% percent of the Electoral Area (Figure 9). C-3 fuel types consist of relatively dense growing mature Jack and Lodgepole pine with a limited understory, representing ecosystems adapted to frequent stand-initiating fires. Next are C-7, occupying 13% and O-1a/b covering 12% of the AOI. C-7, comprised of uneven-aged Douglas fir stands with a relatively low density and minor components of lodgepole pine or spruce, as well as the grass fuel type, represent ecosystems adapted to frequent stand-maintaining surface fires. This reduces conifer tree infill and creates a more patchy, open forested area. The occurrence of M-1/2 and C-5 fuel types at 12% and 11% of the AOI, respectively, represent areas where stand-initiating wildfire are relatively rare.

Figure 9: Example of a C-3 fuel type found within Electoral Area F.

4.1.2.4 Forest Health

The Cariboo Forest Region has been experiencing a number of forest health challenges over the past decade since the decline of the mountain pine beetle (MPB) epidemic that ravaged the region from the late 1990s through to 2015, causing unprecedented spread, damage and mortality to lodgepole pine-dominant forests. The Cariboo Forest Region is comprised of three Resource Districts/Timber Supply Areas (TSA): Quesnel, Cariboo-Chilcotin (Williams Lake TSA) and 100 Mile. Electoral Area F is primarily encompassed by the Williams Lake Timber Supply Area (TSA), with small portions along the northern boundary of the electoral area covered by the Quesnel TSA as well as small portions of the southern boundary covered by the 100 Mile TSA.

The Williams Lake TSA is one of the largest Timber Supply Areas in BC. In addition to MPB, the area seen increases in various other high hazard forest health factors including western spruce budworm, western hemlock looper, Douglas-fir bark beetle, spruce beetle, western balsam bark beetle, and aspen leaf miner. Since 2020, the most notable changes have been reduced populations of beetles, including Douglas-fir bark beetle, spruce beetle, and western balsam bark beetle. However, Douglas-fir bark beetle populations are still considered to be at outbreak levels, resulting in the mortality of large numbers of healthy trees over extensive areas. Endemic populations of mountain pine beetle continue to remain relatively static[21].

Western spruce budworm continues to increase substantially, which poses high concern given the widespread coverage of Douglas-fir in the Williams Lake TSA. Despite it's name, the preferred host species of the spruce budworm in BC is Douglas-fir, followed by true firs (such as subalpine fir), and to a lesser degree, spruce. Severe defoliation of mature stands does not typically result in mortality in the first year, but mortality can occur after subsequent years of repeated defoliation. Additionally, defoliation stresses the trees and may predispose Douglas fir to attack by Douglas-fir beetle[21].

Western hemlock looper pose a threat to western hemlock, western red cedar, Douglas-fir, and spruce species causing sever defoliation and can cause mortality within the first year. An outbreak was recorded in 2020 with severe defoliation occurring in the Quesnel and Horsefly Lakes regions. Population monitoring and aerial spray treatments (as determined necessary) are strategies identified within the William Lake TSA Forest health Strategy 2022/2023. Population outbreaks are generally observed every six to eight years[21].

The impacts of forest health agents acting on forest stands on the landscape can result in tracts of stressed, declining, or dead trees, which increases the incidence of dry fuels and further exacerbates wildfire hazard. It is also worth noting that Wildfire Risk Reduction projects predominately occur within Douglas-fir dominant stands, resulting in more open forest stands post-treatment. These openings can increase potential for windthrow, therefore monitoring sites post-harvest activities is important for early detection of Douglas-fir beetle. Additionally, the reintroduction of prescribed and cultural burning on the landscape primarily occurs in fire-maintained ecosystems, such as Douglas-fir forest types. Post-burn monitoring of these sites is important to ensure scorched trees do not induce further stress in the tree and increase Douglas fir beetle populations.

[21] Wiliams Lake TSA Forest Health Strategy 2022-2023 /https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/forest-health/fh-strategies/2022-2023_wltsa_forest_health_strategy_final.pdf

4.1.3 Weather and Climate

Weather attributes including temperature, relative humidity, precipitation, wind speed and wind direction are critical factors in the ignition, spread, and duration of wildfires. Weather is the most variable component of the wildfire environment, and it has a direct relationship to fuel moisture, which is a crucial determinant of combustibility. Local difference in aspect, topography and vegetation will also influence fuel-moisture at the site level.

Table 10 provides weather station information for the five active BC Wildfire Service weather stations located within Electoral Area F. Weather analysis in the following sections utilizes observed data from the centrally located Gavin and Horsefly weather stations through the wildfire season months of April to October from 206 to 2024.

Table 10. Weather station information for Electoral Area F AOI

Weather Station	Likely RS	Gavin	Prairie Creek	Horsefly	Knife
Network	BCWS	BCWS	BCWS	BCWS	BCWS
Coordinates (Lat, Long)	52.62, -121.51	52.47, -121.74	52.39, -120.99	52.33, -121.40	52.02, -121.87
Elevation (m)	1,046	1,081	1,015	701	821

4.1.3.1 Temperature

Temperature analysis data from the BCWS Gavin (Figure 10) and Horsefly (Figure 11) weather stations demonstrates that over the past decade although maximum temperatures have occurred in month of June (37°C (Gavin) and 37.7°C (Horsefly) in 2021), on average July and August experience the highest overall temperatures during the wildfire season at 20.5°C (Gavin)/22.6°C (horsefly) and 20.1°C (Gavin)/22.1°C (Horsefly) respectively. The greatest variability occurs in October for both stations as well, with a range of -8.2°C minimum and 20.3°C maximum at Gavin and -2.0°C minimum and 22.2°C maximum observed at Horsefly.

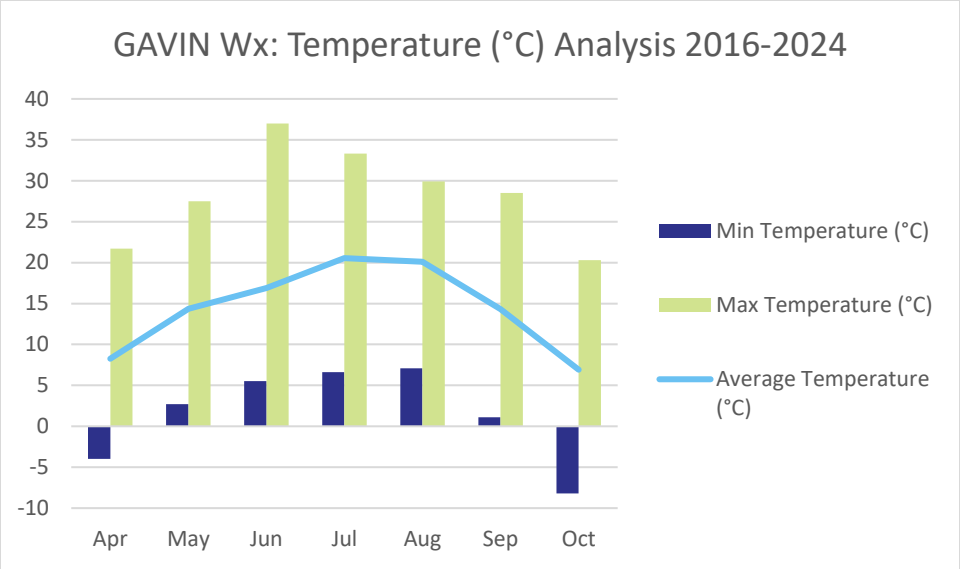


Figure 10: Minimum, Maximum, and Average Temperatures recorded from the BCWS Gavin Weather Station from April through October (2016 to 2024)

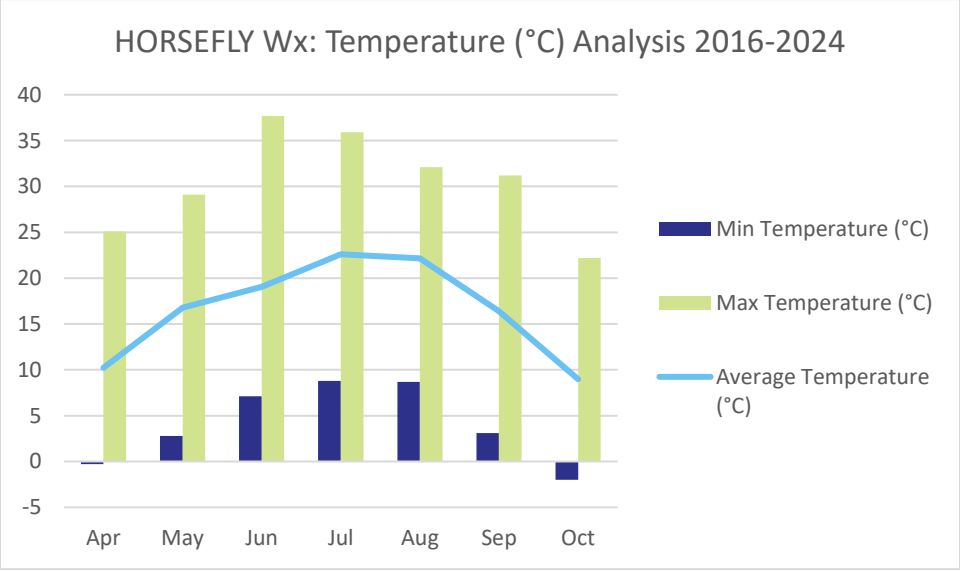


Figure 11: Minimum, Maximum, and Average Temperatures recorded from the BCWS Horsefly Weather Station from April through October (2016 to 2024)

4.1.3.2 Precipitation

Precipitation analysis data from the BCWS Gavin and Horsefly weather stations demonstrates that on average, June and September receive the most amount of precipitation during the wildfire season (Figure 12) (Figure 13). Notably, April is the month where the lowest average level of precipitation were recorded at both Gavin and Horsefly. This demonstrates that April is consistently the driest month of the wildfire season, which can result in moisture deficits leading into the fire season.

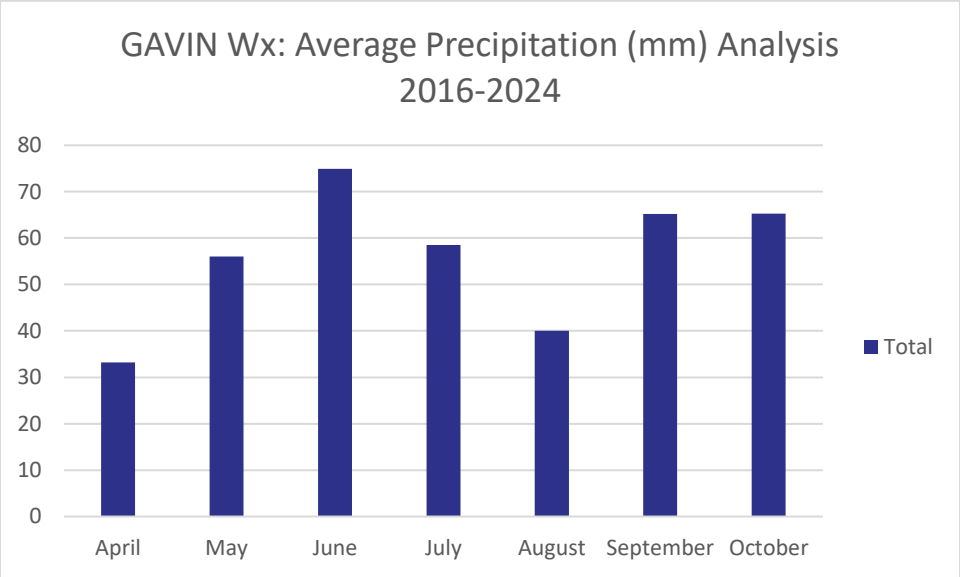


Figure 12: Average Precipitation (mm) recorded from the BCWS Gavin Weather Station from April through October (2016 to 2024).

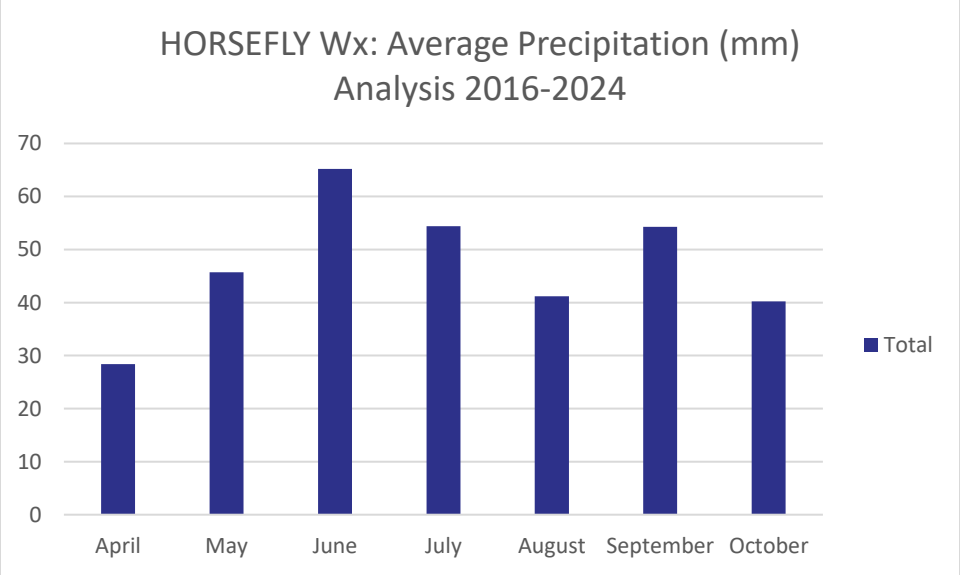


Figure 13: Average Precipitation (mm) recorded from the BCWS Horsefly Weather Station from April through October (2016 to 2024).

4.1.3.3 Relative Humidity

Relative humidity (RH) is the ratio of the amount of moisture in the air to the amount of moisture necessary to saturate the air at the same temperature and pressure[22]. Relative humidity is an important factor influencing wildfire behaviour because dead forest fuels and the air are always exchanging moisture. Low humidity takes moisture from the fuels, and fuels in turn, take moisture from the air when the humidity is high. Therefore, higher relative humidity (above 60%) makes fuels moister and more resistant to ignition, while lower relative humidity (below 30%) dries out fuels, making them more flammable and increasing the risk of fire spread.

RH analysis from the BCWS Gavin and Horsefly weather stations demonstrates that the lowest average RH is experienced during the months of April and May at both stations, with average RH at 43.2% and 44.3% respectively observed at Gavin (Figure 14) and 40.1% and 39.8% respectively at Horsefly (Figure 15). June, July and August all experience similar average RH levels in the high 40% rage at Gavin and mid 40% range at horsefly, before RH spikes to >50% in September and October at both stations.

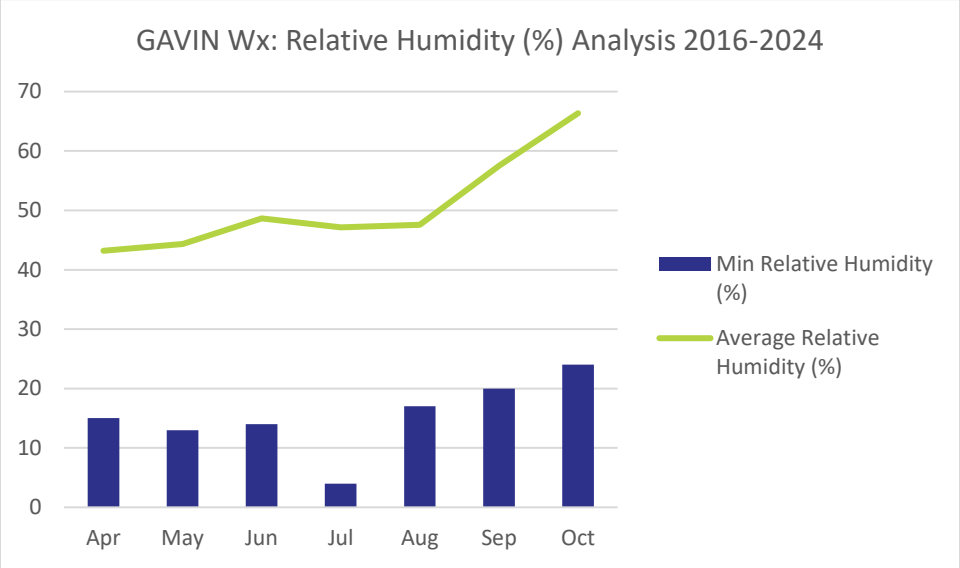


Figure 14: Minimum and Average Relative Humidity (%) recorded from the BCWS Gavin Weather Station from April through October (2016 to 2024). Maximum RH is represented at 100% saturation.

[22] US National Park Service website. https://www.nps.gov/articles/understanding-fire-danger.htm

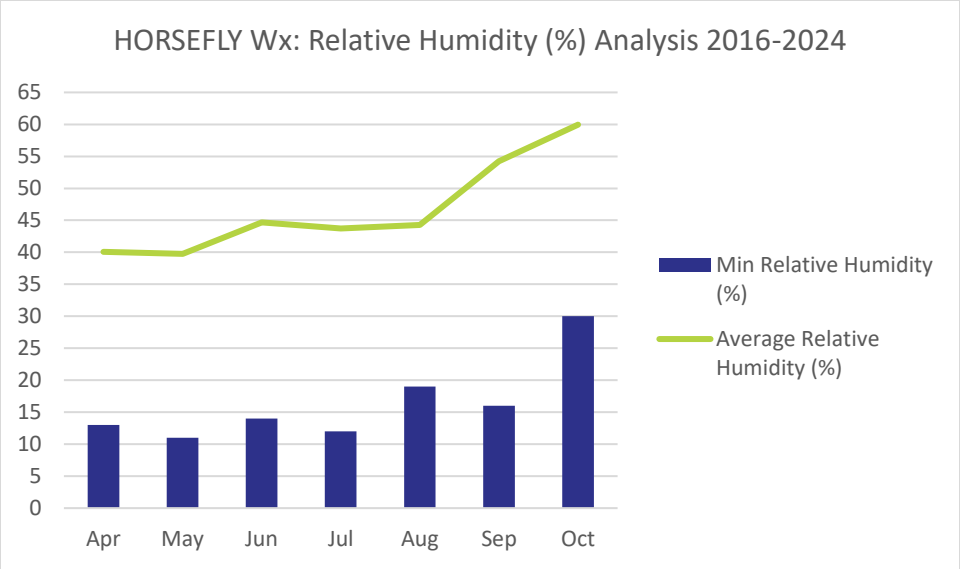


Figure 15: Minimum and Average Relative Humidity (%) recorded from the BCWS Horsefly Weather Station from April through October (2016 to 2024). Maximum RH is represented at 100% saturation.

When considering recorded trends in temperature, precipitation, and relative humidity from the past decade (since 2016) and the interactions between these components, the months of June, July and August demonstrate the greatest potential for dry conditions catalysing wildfire ignition and spread within the Electoral Area F area. These trends align with regional fire hazard patterns, showing that warming spring days with lower moisture levels result in a buildup of cured, flammable fuels until the green-up phase in late May or June. This increases the risk of unpredictable, fast-moving spring fires, leading to large-scale wildfires, that would traditionally be expected in the later summer months. Cumulative warming from July and August temperatures contribute to late summer drying effects, increasing the availability of combustible fuels in ground, surface, and aerial sources and leading to an increase in potential fire intensity, severity, and difficulty of control in the mid to late summer months.

4.1.3.4 Wind

Wind speed and direction are the most variable factors influencing fire behaviour, contributing to the unpredictability of fire behaviour, intensity, and severity. Over the past decade, wind driven events and observations highlight the importance of readiness for high winds from any direction. While historical data can aid in prioritizing treatment's locations, communities must be prepared for wind-driven fires from any direction.

Wind roses are used as visual tools to illustrate wind speed and direction for a particular location on a monthly basis. In these diagrams, colours indicate Initial Spread Index (ISI), while the area within each cardinal quadrant represents the percentile of wind occurrences driven from a particular direction. ISI is a numeric rating of the expected rate of fire spread based on wind speed and moisture content of fuels[23]. Wind data from the Gavin and Horsefly weather stations is utilized to illustrate local wind patterns applicable to Electoral Area F (Figure 16, Figure 17).

[23] BC Wildfire Service website. https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prepare/weather-fire-danger/fire-weather/fire-weather-index-system#ISI

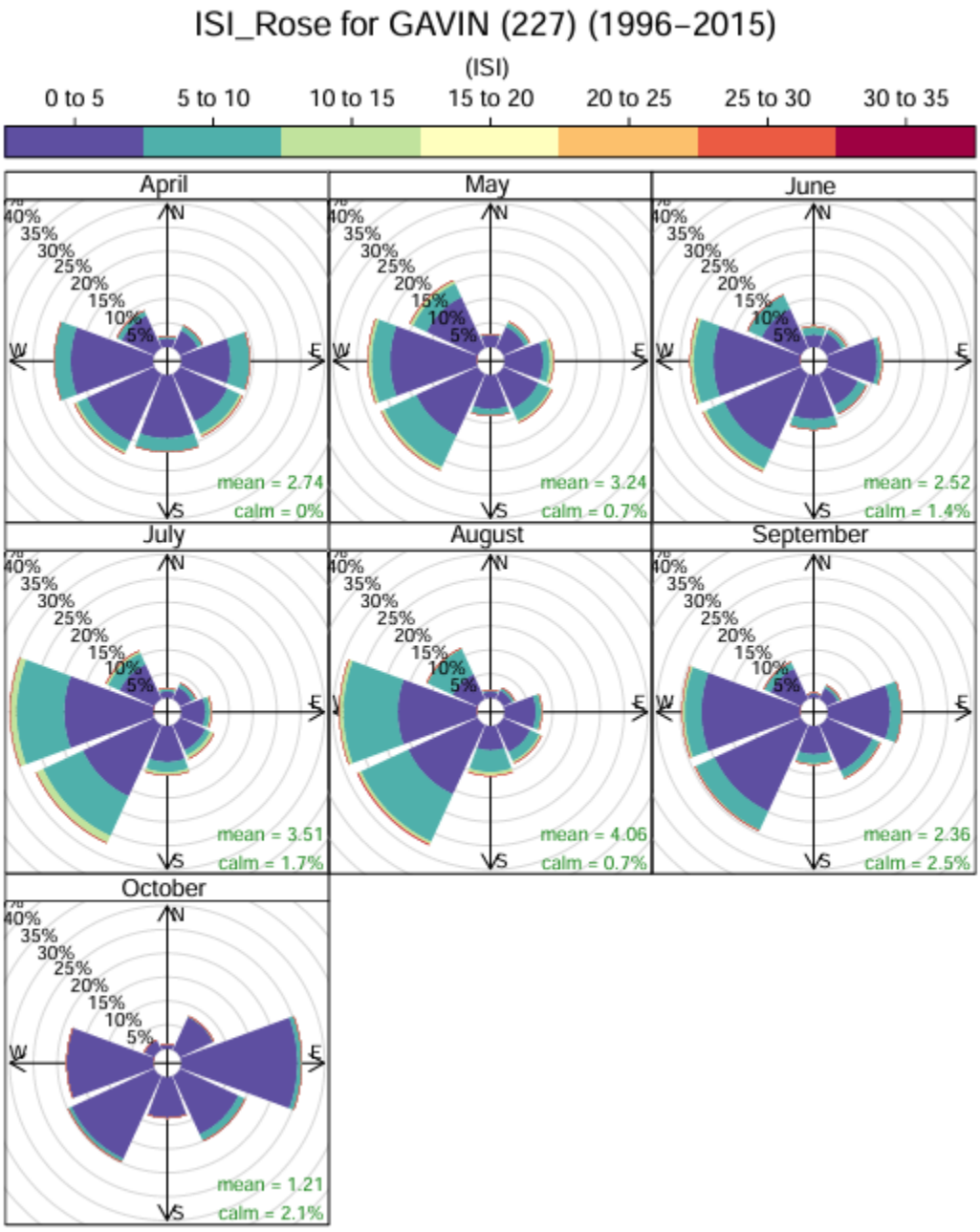


Figure 16: Initial Spread Index Roses for Gavin Wx (1996-2015) (BC Wildfire Service)

Illustrated in Figure 16, the predominant wind direction at the Gavin weather station during the wildfire season is represented by west and southwest winds. June, July and August experience higher wind speeds more frequently than other months as indicated by the greater occurrence of the light green, orange and red. Increased wind speeds during months with higher temperatures and lower precipitation further exasperate the potential for increased wildfire intensity, spread, and severity.

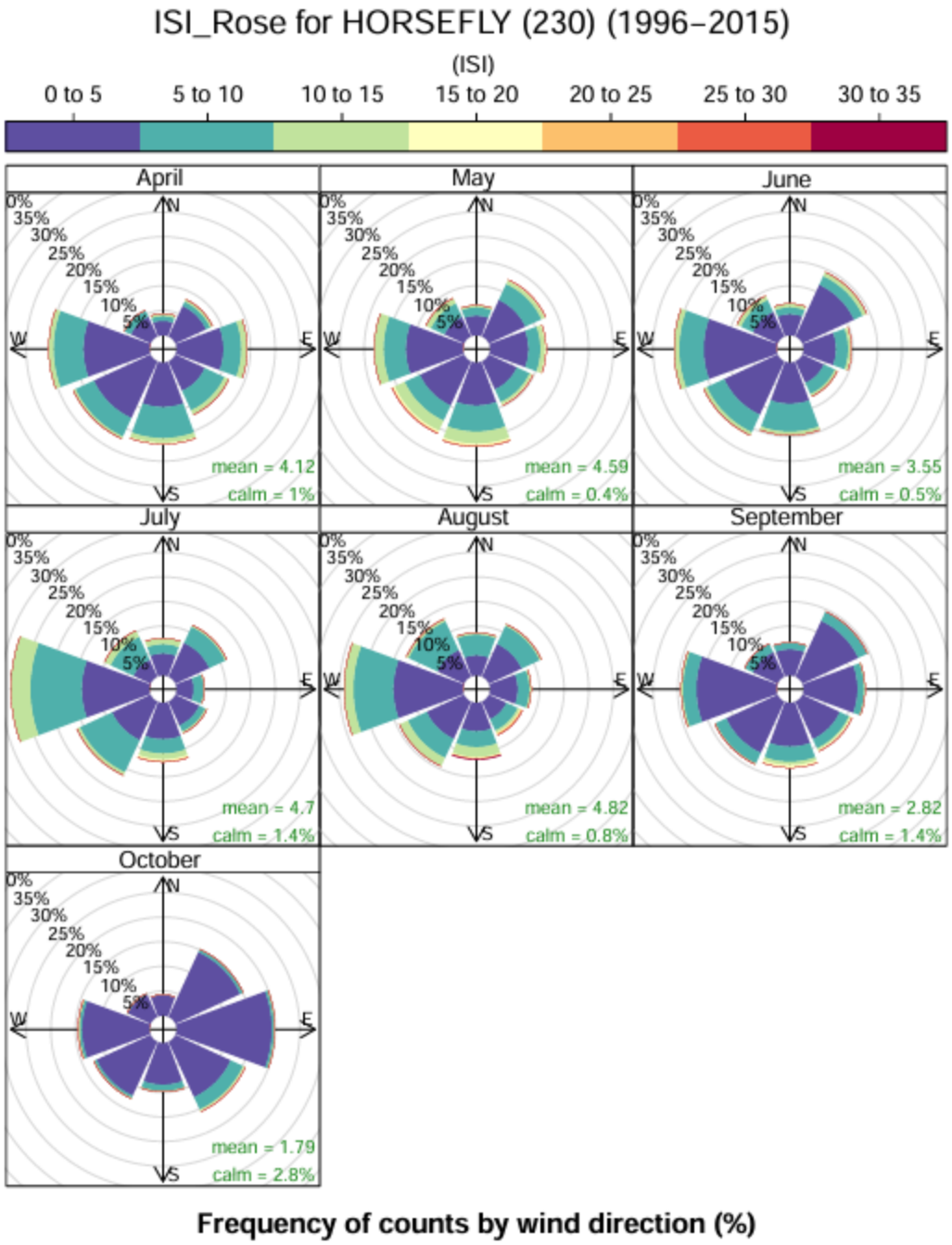


Figure 17: Initial Spread Index Roses for Horsefly Wx (1996-2015) (BC Wildfire Service)

Figure 17 shows that the predominant wind direction at the Horsefly weather station during the wildfire season is represented by a west wind with a degree of variability for southwest, south and northeast winds to play a role as well. May, July and August experience higher wind speeds more frequently than other months as indicated by the greater occurrence of the light green, orange and red. Increased wind speeds during months with higher temperatures and lower precipitation further exasperate the potential for increased wildfire intensity, spread, and severity.

4.1.3.5 Climate Change

The province of BC has witnessed its most severe wildfire seasons of the last half-century, occurring in 2017, 2018, 2021, 2023, and 2024 all characterized by extreme weather conditions. The recent surge in fire activity is not entirely unexpected, given recent weather extremes. However, what is surprising is the early emergence of increased wildfire activity around 2000 – decades earlier than anticipated from climate models – and the magnitude of fire-season severity. For instance, four of the past eight years saw more than 1 million hectares burned, or more than 1% of the land area, compared to only three wildfire seasons from 1919 to 2016, exceeding 0.5 million hectares. Additionally, the average length of the wildfire season, as inferred from weather records (measured by the number of frost-free days) and the onset of fire activity (defined as the date when 2% of the year's total area burned was reached), has increased by approximately 27 days since the early 20th century[24].

Changes in temperature and precipitation regimes each have important impacts on fire weather. Changing trends in precipitation and temperature alter the risk of extreme wildfires that can result from hot, dry, and windy conditions[25]. Understanding changes in both temperature and precipitation trends provides insight into changes in potential wildfire trends. Figure 18 below demonstrates the relationship between weather, vegetation/fuels, and ignition potential, and the impacts to each of these components under a changing climate.

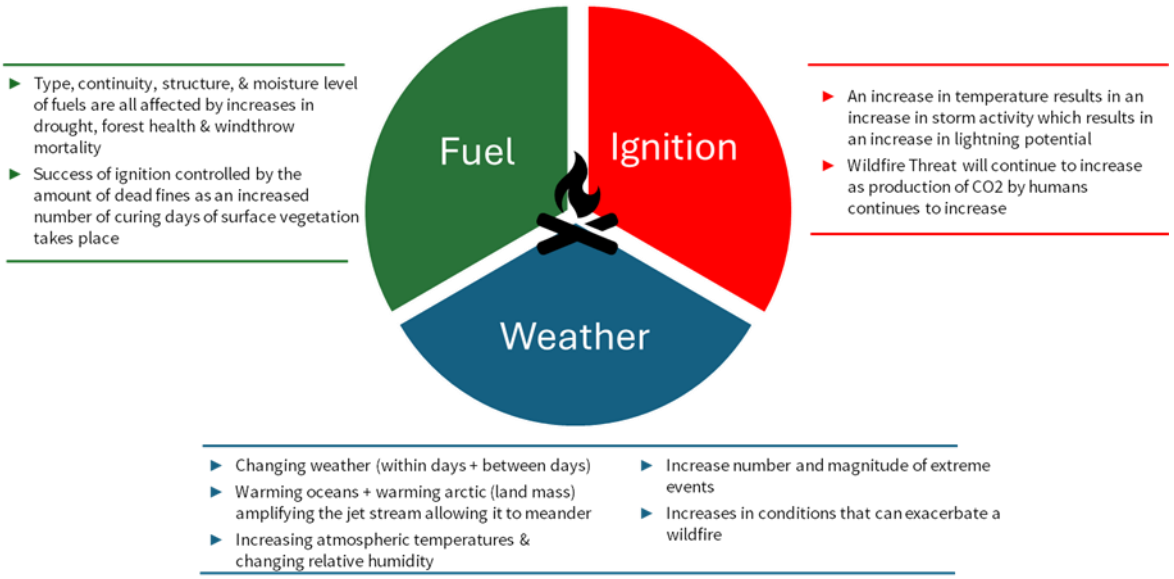


Figure 18: Effects of climate change graphic.

The Pacific Climate Impacts Consortium (PCIC) conducts quantitative studies on the impacts of climate change and climate variability[26]. Projected climate change data from the PCIC presents a comprehensive view of potential climate change risks and impacts due to inputs from many raw data sources. Strong trends in temperature and precipitation, as well as an integrated measure of the two, the moisture deficit, have been observed in BC over the past century.

[24] Parisien, M. A., Barber, Q. E., Bourbonnais, M. L., Daniels, L. D., Flannigan, M. D., Gray, R. W., ... & Whitman, E. (2023). Abrupt, climate-induced increase in wildfires in British Columbia since the mid-2000s. *Communications Earth & Environment*, *4*(1), 309.
[25] Zhang, X., Flato, G., Kirchmeier-Young, M., Vincent, L., Wan, H., Wang, X., Rong, R., Fyfe, J., Li, G., Kharin, V.V. (2019): Changes in Temperature and Precipitation Across Canada; Chapter 4 in Bush, E. and Lemmen, D.S. (Eds.) Canada's Changing Climate Report. Government of Canada, Ottawa, Ontario, pp 112-193.
[26] Pacific Climate Impacts Consortium. 2024.

Annual area burned correlates significantly to the climatic moisture deficit (CMD); even when total precipitation levels remain high, rapid warming typically results in increased evapotranspiration demand. It is estimated that for every degree of warming, a minimum increase of 15% in precipitation is required to compensate for increased biomass flammability.[27]

Table 11 summarizes the projected change in average temperature and precipitation in the Cariboo region for the period of 2021 to 2050, using a baseline average from observed data collected from 1981 to 2010.

Table 11: Projected change in average temperature and precipitation for the Cariboo region.

Climate Variable	Season	Average from 1981 - 2010	Projected change for 2021-2050	
			Low (10th percentile	High (90th percentile)
Temperature	Annual	2.3 °C	+1.3°C	+2.4°C
	Summer	11.8 °C	+1.4 °C	+3.0 °C
	Winter	-7.1 °C	+0.0 °C	+1.8 °C
Precipitation	Annual	2.04 mm/day	+2%	+6%
	Summer	1.91 mm/day	-13%	+5%
	Winter	2.25 mm/day	+6%	+18%

Based on the above predictions from the PCIC, by the year 2050 the region will very likely experience an overall increase in temperature annually, and in both the summer and winter months. Average precipitation is projected to increase annually and during the winter months, with variable predictions for the summer months. It is important to note that changes in precipitation exhibit more temporal and regional variation than changes in temperature; therefore, projection results for precipitation have less confidence than projection results for temperature[28]. Overall, winters in the Cariboo region can be expected to become warmer and wetter, while summers will become warmer with uncertainty around changes in precipitation patterns.

Although an increase in precipitation may sound like a potential mitigation outlet to warming temperatures, increasing temperatures will simultaneously increase the rate of evaporation. The increase in precipitation that would be required to offset moisture deficits from evaporation exceeds both projected and reasonable precipitation changes. Therefore, despite an overall predicted increase in annual precipitation, if summers become warmer with similar precipitation patterns, this will lead to drier conditions and have substantial impacts on terrestrial communities and increase drying potential and fire danger.

[27] Parisien, M. A., Barber, Q. E., Bourbonnais, M. L., Daniels, L. D., Flannigan, M. D., Gray, R. W., ... & Whitman, E. (2023). Abrupt, climate-induced increase in wildfires in British Columbia since the mid-2000s. Communications Earth & Environment, 4(1), 309.

[28] Zhang, X., Flato, G., Kirchmeier-Young, M., Vincent, L., Wan, H., Wang, X., Rong, R., Fyfe, J., Li, G., Kharin, V.V. (2019): Changes in Temperature and Precipitation Across Canada; Chapter 4 in Bush, E. and Lemmen, D.S. (Eds.) Canada's Changing Climate Report. Government of Canada, Ottawa, Ontario, pp 112-193.

4.2 Wildfire History

Wildfire is a common natural occurrence on the Fraser Plateau that characterizes much of the Cariboo region, including the western third of Electoral Area F. Characterized by an NDT 3, this area includes dry, fire adapted spruce, pine dominated stands with a consistent Douglas-fir component throughout (SBSdw) that support frequent, stand-initiating fires. The eastern portion of Electoral Area F contains the Cariboo Mountains and Quesnel Highlands which is described by an NDT 1 in the Wet Cool ESSF and ICH biogeoclimatic zones of the region which can experience stand-initiating fires, however at much less frequent intervals than NDT 3. In addition, the Cariboo Region experiences some of the highest occurrences of thunderstorms and lightning in BC due to a combination of factors including inland location resulting in greater temperature variations and increased instability in the atmosphere, as well as the mountainous terrain to the west that forces pacific coastal air upwards as it moves inland, cooling and condensing to form clouds and potential storms.

A historical wildfire analysis was conducted for Electoral Area F using fire history data up to the year 2023 from BC Wildfire Service. Table 12 summarizes the number of ignitions, ignition source, and area burned by wildfire within the Electoral Area F AOI since the 1920's when fire data began being recorded.

Table 12. Area burnt within Electoral Area F, summarized by fire cause (lightning vs human)

	Lightning	Person	All
Number of Ignitions	2,781	1,294 (475 starts classified "unknown")	**4,075**
Total Area Burnt (ha)	101,218.0	59,196.8	**160,414.8**
Percentage of Area Burned	63%	37%	100%

Since the 1920's, over 166,000ha of area within Electoral Area F has been burned with majority (68%) of the starts and majority (63%) of the area burned having been from lightning. The remaining 32% of recorded wildfire ignitions in Electoral Area F have been determined human-caused - meaning anything not started by lightning - and have contributed to 37% of the total area burned. Most human-caused fires arise from everyday activities such as escaped debris piles, campfires, spark-throwing equipment, or hot exhaust on dry grass, though oddities like wildlife contacting power lines is also considered "human-caused". Locally, the majority of human-caused fires within the Cariboo are a result of debris burning on private properties, particularly in the spring and early summer. While the total human-caused ignitions remain lower than lightning ignition within Electoral Area F, the trend in ignitions data demonstrates frequency of lightning-caused ignitions and human-caused ignitions are slowly increasing on average. In addition, lightning-caused ignitions are also more concentrated in the higher elevations of the Cariboo Mountains, while the more populous lower elevations to the west experience more human-caused ignitions. Province-wide, lightning now accounts for about 60% of starts and roughly 85% of the area burned.

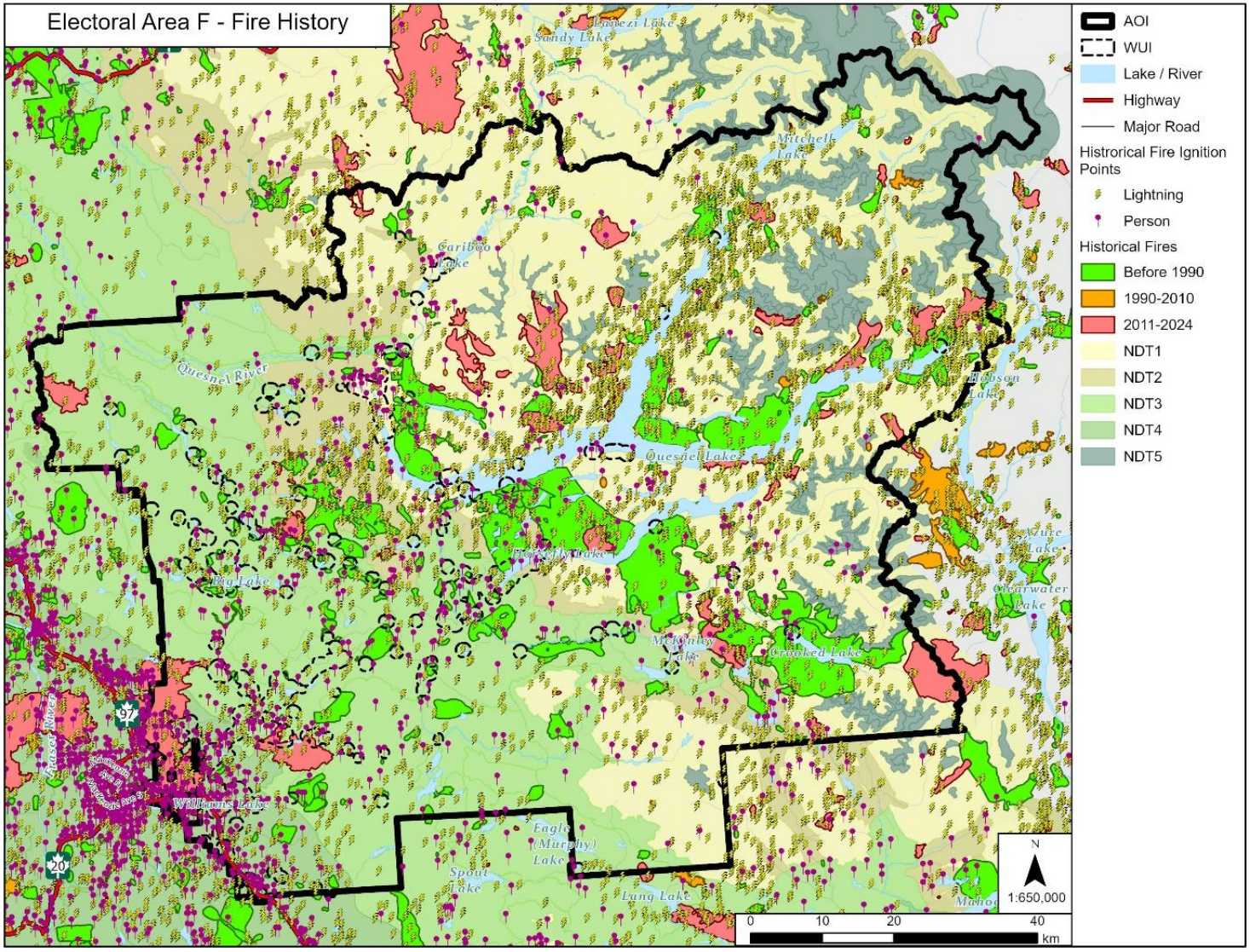

Electoral Area F - Fire History
AOI
WUI
Lake / River
Highway
Major Road
Histrorical Fire Ignition Points
Lightning
Person
Historical Fires
Before 1990
1990-2010
2011-2024
NDT1
NDT2
NDT3
NDT4
NDT5
Sandy Lake
Mitchell Lake
Quesnel River
Quesnel Lake
Big Lake
Crooked Lake
Williams Lake
Eagle (Murphy) Lake
Spout Lake
Lang Lake
N
1:650,000
0
10
20
40
km

Figure 19: Historical Wildfire Perimeters and Ignition Source Points within Electoral Area F.

4.2.1 Wildfires of Note and Lessons Learned

The Williams Lake and surrounding area experienced significant wildfire events in 2017, including the Central Cariboo Complex, Plateau Complex, and Hanceville Complex wildfires. In 2017, the Cariboo region saw unseasonably hot and dry conditions, as well as record-high Build Up Index (BUI) (numerical rating indicating fuels available for combustion). Remnants of dead pine accumulations from the mountain pine beetle epidemic can still be found on the broader landscape within the Fraser Plateau area of BC. Significant lightning activity on July 7th and 8th caused the ignition of over 190 new wildfires throughout the province, with the majority occurring within the Cariboo. These conditions set the stage for what was to become one of the worst fire seasons on record in BC.

Wildfires of note that have specifically impacted the communities within Electoral Area F of the Cariboo Regional District are summarized below:

- **Central Cariboo Complex**: The Central Cariboo Complex of fires surrounded Williams Lake, Soda Creek and surrounding areas in July of 2017. Combined, the fires covered a span of 31,181hectares, including an Evacuation Order for the entire city of Williams Lake and surrounding areas (BC Wildfire Service). Two wildfires of note within the Central Cariboo Complex are the White Lake and Wildwood fires.
    - **Spokin Lake (C20645**): First discovered on July 7, 2017, this fire grew to 3,387 hectares surrounding Spokin Lake, predominantly on the southeast side and through rural residential areas on the northwest side. The fire triggered evacuation orders by the CRD for the Miocene Area, northwest of Spokin Lake, impacting 317 parcels.
    - **Wildwood Wildfire (C20729):** First discovered on July 7, 2017, this fire grew to 12,723 hectares on the northeast side of the City of Williams Lake. The fire triggered evacuation orders for the City of Williams Lake, as well as by the CRD for the communities of Wildwood, 150 Mile House, Dugan Lake, Miocene, Spokin Lake, Fox Mountain, and Pine Valley.
    - **UBC Research (30870):** Discovered on July 8, 2017, this fire was contained at 859 hectares northeast of Big Lake Ranch and south of Gavin Lake.
- **Plateau Complex**: The Plateau Complex of fires on the Chilcotin Plateau covered a combined area of 545,151 hectares, making it one of the largest fires in B.C.'s recorded history. This fire was the result of nearly 20 separate fires merging together. Within the Cariboo Regional District, this fire spanned large areas of Electoral Areas I, J and K.

The 2017 wildfire season resulted in the loss of 227 structures within the Cariboo Regional District, with 60 of those being homes[29]. The lasting impacts of the 2017 wildfire season within the Cariboo region are still profoundly felt by residents. An *After Action Report* was completed by the CRD Emergency Operations Centre (EOC) following the 2017 wildfire season to document lessons learned, including successes and challenges, and provide recommendations to enhance emergency operations and response capacity within the region. Important take-aways from the After Action Report will be incorporated into this CWRP and its Action Plan.

[29] AFTER ACTION REPORT: 2017 Wildfires – Cariboo Regional District EOC. January 2018

4.3 Provincial Strategic Threat Analysis (PSTA)

The BC Wildfire Service developed the Provincial Strategic Threat Analysis (PSTA) and Risk Class framework as provincial spatial datasets to evaluate and forecast potential wildfire threats. Leveraging provincial fuel type mapping, historical fire occurrence data, topography, and historical weather station data, the PSTA generates a wildfire threat score. Outputs from the PSTA include information and maps delineating historical fire density, the potential for embers to land in an area (spotting impact), head fire intensity, and overall wildfire threat. Further details regarding the derivation of the PSTA dataset are available through the BC Wildfire Service.

A spatial analysis of the most recent (2021) PSTA data within the 1-kilometre eligible WUI in Electoral Area F was completed and is summarized in Table 15 below. The WUI fire threat within Electoral Area F is distributed across the classes, with the High Fire Threat Class being the greatest at nearly 20% of the WUI (Figure 15). These areas are represented by coniferous dominant forested stands and flammable grasses. Notably, a significant proportion of the WUI, over 40%, is occupied by private land which gets classified as “No Data” in the PSTA dataset. This underscores the importance of FireSmart engagement and participation by communities and residents, as reducing wildfire risk is a shared responsibility that begins with private landowners at the home level.

Table 13. PSTA Fire Threat class and associated areas and proportions for the Electoral Area F WUI

Fire Threat Class	Area (HA)	Percentage (%)
No Data (Private Land)	26,660.3	44
Extreme	4,617.6	8
High	11,592.3	19
Moderate	9,460.1	15
Low	1,068.7	2
Water	7,313.7	12
Total	**60,712.7**	100

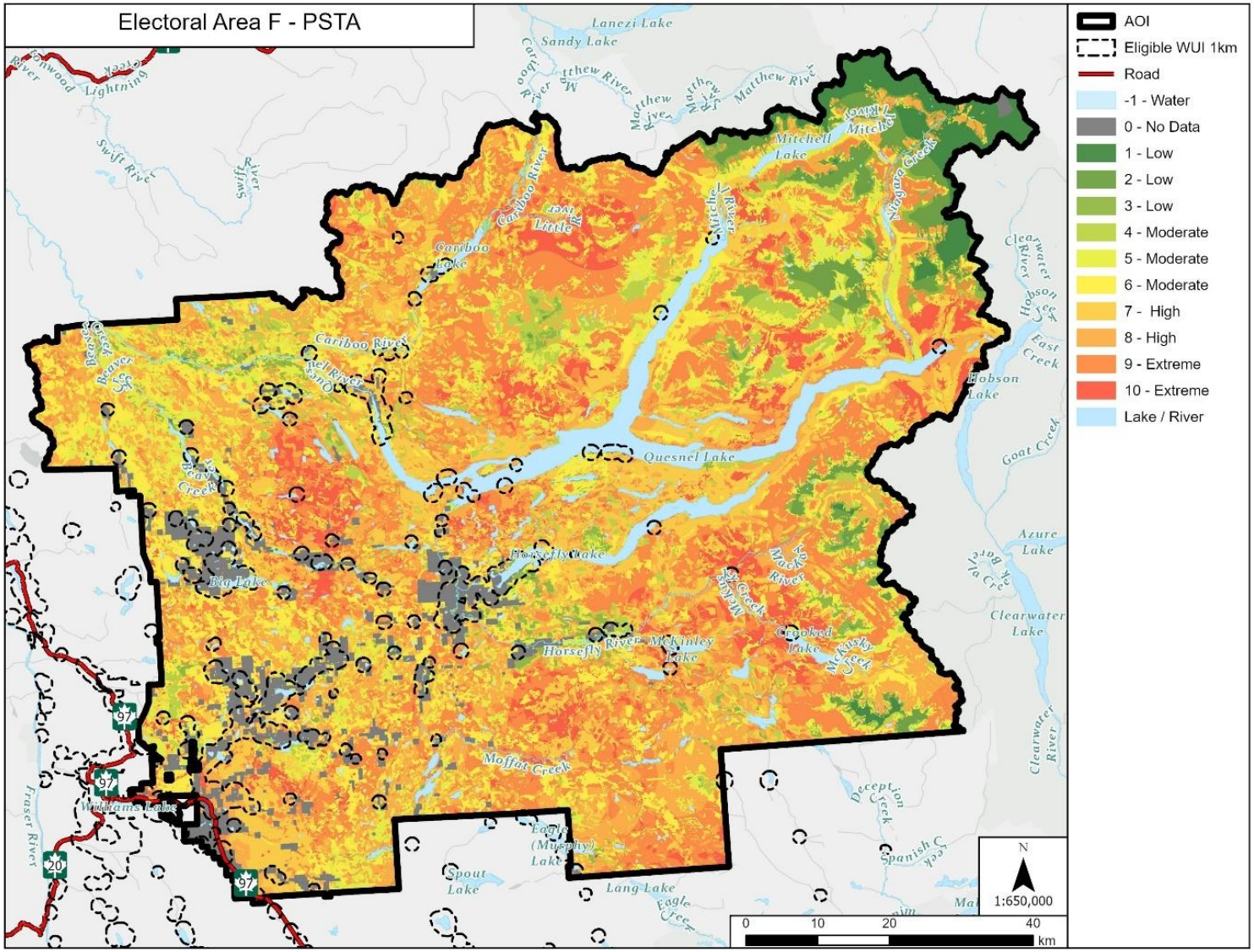

Electoral Area F - PSTA
AOI
Eligible WUI 1km
Road
-1 - Water
0 - No Data
1 - Low
2 - Low
3 - Low
4 - Moderate
5 - Moderate
6 - Moderate
7 - High
8 - High
9 - Extreme
10 - Extreme
Lake / River
Lanezi Lake
Sandy Lake
Matthew River
Mitchell Lake
Niagara Creek
Cariboo River
Little Cariboo River
Cariboo Lake
Quesnel River
Beaver Creek
Beaver Lake
Hobson Lake
East Creek
Goat Creek
Quesnel Lake
Azure Lake
Big Lake
Horsefly Lake
McKinley Lake
Horsefly River
Mackay River
Crooked Lake
McKusky Creek
Clearwater Lake
Clearwater River
Moffat Creek
Williams Lake
Fraser River
Deception Creek
Spanish Creek
Eagle (Murphy) Lake
Spout Lake
Lang Lake
Eagle Creek
Swift River
Lightning Creek
N
1:650,000
0 10 20 40
km

Figure 20: PSTA Fire Threat Class within Electoral Area F.

4.4 Hazard, Risk, and Vulnerability Analysis

The Hazard, Risk, and Vulnerability Analysis (HRVA) is an organized process to identify hazards that may trigger an emergency response and assign a hazard rating based on the likelihood and potential consequences of those hazards. Understanding local hazards and risks helps a community establish priorities, plans and strategies to prevent or reduce the risks. Hazard-specific guides provide additional guidance for responding to specific emergency situations and address the essential operational actions to facilitate effective response to that specified emergency event.

An HRVA was completed for the Cariboo Regional District utilizing the BC Provincial Emergency Program HRVA online tool[30]. The results of the HRVA are included in the CRD Emergency Plan (2006). Interface and wildland fires are identified as the highest risk hazard events for the CRD. The Emergency Plan states that a more detailed and thorough contingency plan will be developed for the top three identified risks. Local Evacuation Plans were developed for 103 Mile House, 105 Mile House, and 108 Mile House. Additionally, evacuation plans are be developed for the Williams Lake surrounding areas in conjunction with the City of Williams Lake and the Williams Lake First Nation. However, there have been no detailed local plans developed for any of the Electoral Area F rural communities.

4.5 Local Wildfire Threat Assessment

Part of the process of developing this CWRP involved on-the-ground verification and assessment of local vegetation types and the inherent wildfire threat of forested areas within and surrounding the eligible WUI. Wildfire threat is assessed using the Wildfire Threat Assessment (WTA) tool developed by BC Wildfire Service which focuses on assessing forest stand attributes and fuel structure that contribute to wildfire intensity and spread, independent of fire weather. Wildfire threat differs from wildfire risk in that fire threat classification does not take into account proximity to values or the consequence of damage to those values in a wildfire event.

Field verification and wildfire threat analyses were completed in June 2025 on provincial crown land within the 1-kilometre eligible WUI throughout Electoral Area F. A total of 73 WTAs were completed throughout Electoral Area F. Table 14 outlines the threat rating results of completed WTAs.

Table 14: Summary of Wildfire Threat Assessments completed throughout the Electoral Area F Wildland Urban Interface

Wildfire Threat Assessment Rating	Number of WTAs	Percentage of all WTAs Completed with EA
Extreme	24	33%
High	32	44%
Moderate	16	22%
Low	1	1%

[30] BC Government – Emergency Plan Assessment Tools. https://www2.gov.bc.ca/gov/content/safety/emergency-management/local-emergency-programs/establishing-an-emergency-program/assessment-analysis#hrva

The greatest number of WTAs completed in Electoral Area F are represented as a **High** wildfire threat rating class, contributing over 40%. These areas included a combination of conifer and mixedwood stand types that experienced an overall high understory (>1,500 sph) and moderate to high overstory (600-900, 900-1,200 sph) density with a minimal gap (<3m) between ladder and aerial (crown) fuels. Over 30% of areas assessed were classified as an **Extreme** wildfire threat rating. These areas were generally represented by pine dominant stands (C-3), all with a high understory density (>1,500 sph) and many with a high to very high overstory density (900-1,200, >1,200 sph) and all with a minimal gap (<3m) between ladder and aerial (crown) fuels. C-3 stand types have adapted to experiencing frequent stand-initiating fires and are therefore of high importance for fuel treatments when they intersect the WUI. Just over 20% of the area surveyed was classed as a **Moderate** treat rating. These areas mainly consisted of mixedwood stands with lower understory (500-800 sph) and overstory (400-600 or 600-900 sph) densities.

The local WTA sample results completed within the WUI differ from the spatially-driven PSTA analysis outputs for Electoral Area F, where only 8% as of the WUI was classified as Extreme, just under 20% as High, and 15% classified as Moderate (see Section 4.3). This underscores the importance of field assessment and verification when determining local wildfire threat and potential fire behaviour. Overall, forested areas within Electoral Area F were best represented as a High wildfire threat due to the presence of moderate to high stem densities in conifer-dominant stands and low ladder to crown fuel gaps.

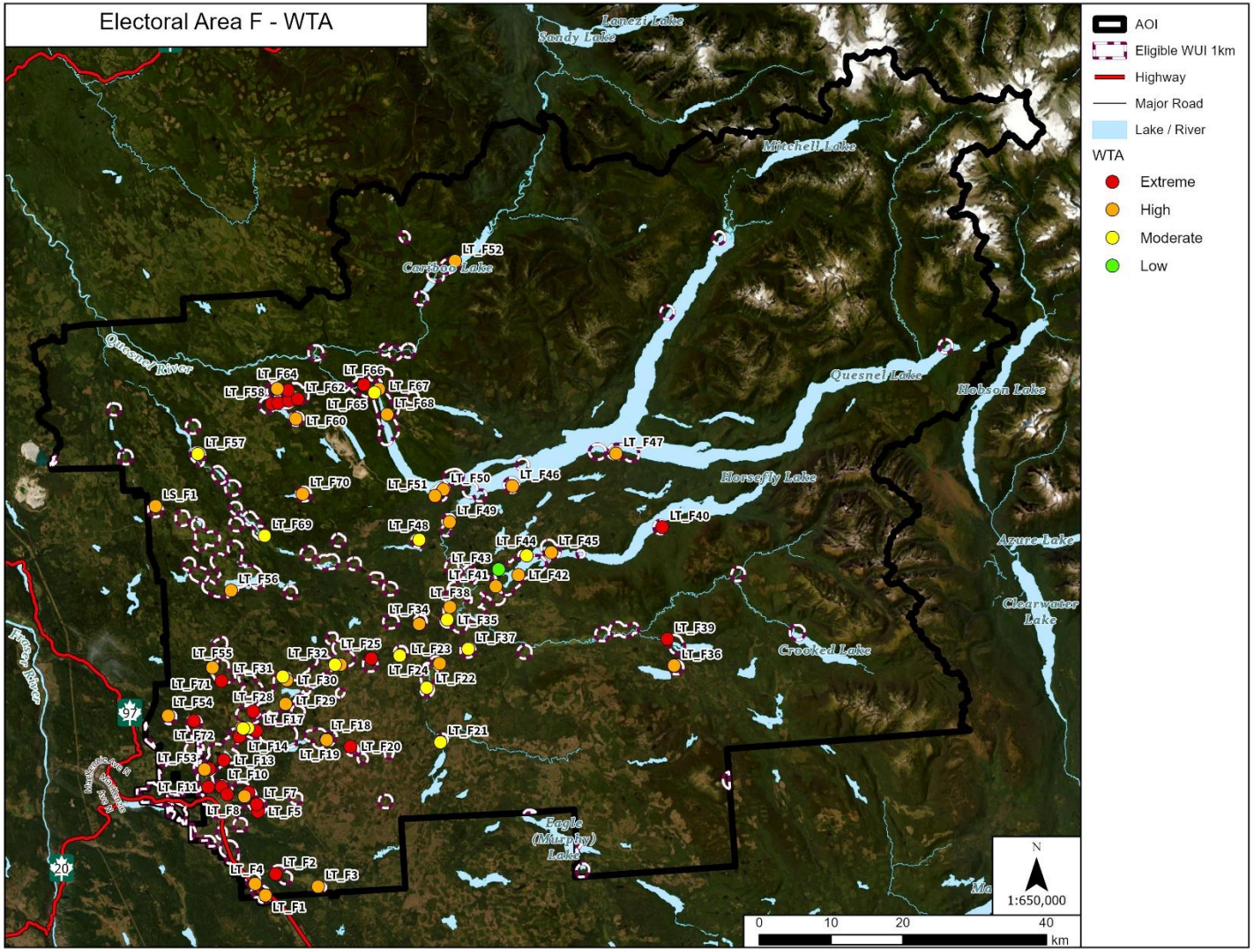


Figure 21: Wildfire Threat Assessments completed on provincial crown land within the WUI throughout Electoral Area F

5.0 FireSmart Disciplines

This CWRP is designed to comprehensively plan for all aspects of community wildfire planning by structuring strategies based on the seven FireSmart disciplines:

1. Education
2. Legislation and Planning
3. Development Considerations
4. Interagency Cooperation
5. Cross – Training
6. Emergency Planning
7. Vegetation Management

Each FireSmart discipline and their role in resiliency planning for the Cariboo Regional District are outlined in the subsequent sections below.[31]

NEW in 2024: Starting in 2024 as per the *FireSmart Community Funding & Supports Program and Application Guide* (February 2024) it will be required for all applicants to have the following FireSmart components developed/active in their community:

- FireSmart Position
- Community FireSmart and Resiliency Committee
- Current Community Wildfire Resiliency Plan[32]

The purpose of the FireSmart Coordinator is to ensure that FireSmart activities are supported, developed, and implemented in accordance with Provincial guidelines as well as with the direction and policy provided by the Regional District. FireSmart Coordinators are an integral part of wildfire risk reduction and act as the main point of contact linking local government, the public, and the provincial FireSmart Program. The FireSmart Coordinator is responsible for organizing and implementing the action items and initiatives identified within this CWRP.

[31] For more information on the BC FireSmart program, visit: https://firesmartbc.ca/

[32] For more information regarding FireSmart Community Funding & Supports Program visit: https://www.ubcm.ca/cri/firesmart-community-funding-supports

5.1 Education

Public education and outreach efforts help community members learn about wildfire and its potential impacts to their communities. In addition, these efforts should be designed to help individuals understand their role in taking action to reduce risk. Education and outreach activities are designed for all groups to benefit, including elected officials, community planners, residents, visitors, businesses, land managers, first responders, and more.

Goal: This CWRP aims to establish effective FireSmart educational activities and strategies so community members within CRD Electoral Area F understand the potential risk of interface wildfire and can play an active role to reduce that risk.

Context: The CWRP is only successful if community members and stakeholders are collectively engaged in taking action to reduce wildfire risk at the individual and community level. To enhance community engagement and education, several outreach tools and tactics can be employed, including:

- Hosting community FireSmart events including:
  - Wildfire Community Preparedness Day,
  - Farm and Ranch Wildfire Preparedness workshop,
  - Neighbourhood Champion workshop,
  - FireSmart booths at community events,
  - Wildfire season open houses at fire halls.
- Distributing informational pamphlets and promotional items to residents during public events.
- Utilizing social media platforms to share FireSmart resources, tips and updates.
- Collaborating with local schools to integrate the FireSmart BC Education Program into curriculum or extracurricular activities.
- Conducting FireSmart Home Assessments or Farm and Ranch Assessments for private landowners and providing personalized recommendations for wildfire mitigation measures.
- Supporting neighbourhoods in receiving FireSmart Neighbourhood Recognition.

Current Status: The Cariboo Regional District has been working on building their FireSmart education program. The CRD website has a webpage dedicated to sharing FireSmart resources, initiatives being undertaken by the CRD, and requests to have a free FireSmart Home Ignition Zone (HIZ) Assessment completed for private properties. The CRD currently has a full-time FireSmart coordinator who has undertaken a number of FireSmart education and engagement activities and initiatives. During the summer of 2025, a seasonal Junior FireSmart Coordinator was also hired to help implement FireSmart engagement activities. The current CRD FireSmart Education Program includes:

- Completing FireSmart HIZ Assessments for property owners throughout the CRD,
- Attending various community events and gatherings with a FireSmart booth or presentation (Farmer's Markets, Farm Prep Days, etc.),
- Organizing FireSmart public engagement events based on public requests,

- Advertising FireSmart resources and events on the CRD website and through the CRD social media coordinator,
- Implementing a summer youth program and FireSmart library program.

The most successful component of the CRD's FireSmart Education Program to date has been requests by residents for completion of a FireSmart HIZ Assessment. The FireSmart Coordinator's goal for 2025 was to gain interest from 100 homeowners to complete HIZ Assessments. Over 90 homeowner HIZ Assessment requests were received, and over 50 have been completed to date. Living in a fire-prone region, many CRD residents are cognizant of the hazards around their homes and have shown genuine interest in implementing FireSmart recommendations. Overall, interactions during the FireSmart HIZ Assessments have been positive and important one on one learning opportunities with residents.

Residents are also offered the option to have a follow up FireSmart HIZ Assessment completed after they have implemented recommendations from the initial assessment; a few follow up assessments have been requested to date. A common barrier for residents wanting to implement FireSmart activities around their properties has been the financial burden of retrofit projects, as well as limited resources for remote areas (skills, machinery, building materials, etc.). There is a large proportion of aging or vulnerable populations throughout the CRD that are unable to undertake FireSmart activities on their own. Currently, the only incentive offered by the CRD to incentivize or help subsidize the financial costs to private property owners completing FireSmart activities is through the waiving of tipping fees to offload wood waste generated from FireSmart activities. Opportunity exists for the CRD to explore additional FireSmart incentive programs.

To date, there have been no communities or neighbourhoods within the CRD that have received FireSmart Canada Neighbourhood Recognition. The CRD FireSmart Coordinator has promoted the recognition program and is keen to support neighbourhoods in their journey towards receiving recognition, however, there have been program requirements that have proven difficult for neighbourhoods to navigate and coordinate around.

The CRD has previously offered "Bin Days" for communities, where logs from vegetation and tree removal on private property are picked up for free and brought to the pulp mill in Quesnel. The CRD landfill and transfer station sites are currently over capacity for accepting wood/vegetation waste. As a result, transporting chipped or whole biomass to these sites is not currently a feasible option. Alternative opportunities to assist in vegetation removal from private properties are currently being explored.

Overall, public engagement throughout the CRD has been most successful with both the retiree age class and school-aged children. Efforts have been made by the FireSmart Coordinator to increase engagement and interest among youth and working age class residents. This includes creating fun and interactive displays for the FireSmart booth, handing out children's FireSmart promotional items, attending the Children's Festival, and implementing a FireSmart library program. Increasing overall engagement with residents of different age classes is a current priority for the CRD FireSmart Program.

Actions: The following are recommended action items for the CRD to further increase FireSmart awareness, education, and action within Electoral Area F communities.

Action Number	Action/Recommendation	Priority Level
Action #1	Read and understand this CWRP's identified risks and recommended actions.Read and understand this CWRP's identified risks and recommended actions.	Very High
Action #2	Develop a FireSmart public communication plan/strategy to effectively plan and monitor annual FireSmart educational strategies and activities for the entirety of the CRD.	Very High
Action #3	Continue to employ a full-time FireSmart Coordinator. This position runs all aspects of the FireSmart program and generally is in charge of actioning many aspects of this CWRP.	Very High
Action #4	Continue to organize and hold a variety of FireSmart events throughout the CRD. Event types include by are not limited to a Wildfire Community Preparedness Day, Farm and Ranch Wildfire Preparedness Workshop, Neighbourhood Champion workshop, or Fire Hall open house.	Very High
Action #5	Continue to encourage and promote residents to have a Local FireSmart Representative (LFR) complete a FireSmart Home Ignition Zone (HIZ) Assessment or Farm and Ranch Assessment for their home/property. Based on the outcome of the Assessments, encourage property owners to implement as many mitigation activities as possible.	Very High
Action #6	Promote and encourage all agricultural/ farm/ranch landowners to develop a **Farm/Ranch Wildfire Preparedness Plan** for their properties. These Wildfire Plans will allow farmers/ranchers to be better prepared to take effective action during wildfires, identify risk reduction priorities to complete such as removing fuels or setting up sprinklers, and share important information with those involved in wildfire response, such as the BCWS.	Very High
Action #7	Develop and offer a local FireSmart Rebate Program to residential property or homeowners that complete eligible FireSmart activities from their FireSmart HIZ Assessment. This provides incentive and assists with the financial barriers of implementing FireSmart activities on private land.	Very High
Action #8	Continue to waive tipping fees for residential, FireSmart generated wood waste. Consider organizing Community Chipper Days/ Community Waste Disposal/ Bin Days for residents, particularly those that may have difficulty accessing the landfill (e.g. vulnerable populations). This will encourage and aid residents with removal of hazardous vegetation and debris around their homes.	High

Action Number	Action/Recommendation	Priority Level
Action #9	Inform communities of upcoming FireSmart events and other fire/emergency management related updates via a variety of communication platforms including social media groups, the CRD website, posters, community and school newsletters, etc.	High
Action #10	Promote and encourage neighbourhoods to work together to implement FireSmart activities at a neighbourhood level and apply for the FireSmart Canada's Neighbourhood Recognition Program. Once recognized, annually renew for FireSmart Recognition is required.	Moderate
Action #11	Work with School Division 27 to incorporate the FireSmart BC Education Program at local schools. This includes promotional materials for contests, banners, and targeted education events at schools to promote the education program curriculum.	Moderate
Action #12	Distribute Educational Materials to the public to support the development of prescribed fire and cultural burning programs	Low

5.2 Legislation and Planning

Legislation and Regulation can be a very effective tool for reducing wildfire risk on provincial crown lands and within the administrative boundaries of a local government or First Nation communities. Provincial acts and regulations provide the means for local governments and First Nation communities to implement wildfire risk reduction actions through bylaws.

Goal: The goal is to facilitate an understanding of how municipal/regional district, provincial, and federal legislation can either support or restrict the ability to implement local wildfire risk reduction policies and bylaws.

Context: Several types of provincial and federal legislation, including acts and regulations, play a role in supporting or influencing the CWRP process and implementation. A comprehensive list of existing relevant bylaws, provincial, and federal regulations and legislation is available in more detail in *Appendix F: Key Provincial and Federal Acts and Regulations, and Additional Resources for FireSmart Disciplines.*

Official Community Plans (OCPs) manage all aspects of local community planning and development and establish objectives and policies used to guide land use decisions. They are important planning documents for establishing proactive mitigation measures for local hazards such as wildfire through the establishment of objectives and policies, which may be the catalyst for defining development permit areas, and creating regulatory bylaws.

Current Status: The CRD has multiple relevant legally enforceable planning documents and local bylaws regulating community planning, development, and fire protection.

Williams Lake Fringe Area Official Community Plan Bylaw No. 4782 (2013)*:* The Williams Lake Fringe Area OCP provides policies and objectives regarding land uses and servicing requirements in portions of Electoral Areas D, E and F surrounding Williams Lake. For Electoral Area F, this is limited to the North Lakeside community.

Planning policies guide decisions to be made by the CRD Board of Directors when considering applications for various types of development. Wildfire is identified within the OCP as one of the land use constraints and objectives for which OCP policies have been structured to address. The following sections specifically pertain to wildfire:

- *Section 4.3.49-57 Environmental Management: Wildfire*

  Highlights for objectives and policies under this section include the following:

  - Areas of High Wildfire Probability (High, Very High and Extreme) are spatially delineated in Schedule F.
  - Prior to undertaking any subdivision or land use development that will create four or more parcels or dwelling units within **any** interface wildfire probability area (Schedule F), the landowner shall provide the Regional District with a Wildfire Hazard Assessment Report for the proposed development, prepared by a Registered Professional Forester licensed in BC or an equivalent qualified professional. The Wildfire Hazard Assessment Report shall: assess the current wildfire hazard, assess conditions on the site and neighbouring lands, evaluate the proposed development for wildfire susceptibility, and provide FireSmart wildfire hazard mitigation recommendations to reduce the hazard of wildfire for the land and buildings. The recommendations of the Wildfire Hazard Assessment Report shall be implemented during development and written into a restrictive

covenant to be registered on a property title advising the property owner of the ongoing responsibility to manage their land and buildings in accordance.

- For any subdivision or land use development that will create fewer than four parcels or dwelling units in a high, very high and extreme wildfire probability area, and for any subdivision or land use development in a moderate wildfire probability area (as identified by the relevant provincial agency), the property owner shall register a standard restrictive covenant on the property title encouraging land owners to use FireSmart wildfire mitigation practices for building construction and land management to reduce the wildfire hazard in their development.

Additionally, the OCP allows for the *Development Approval Information Bylaw No. 5008 (2016),* which applies to all lands within the OCP Bylaw area, the authority to require an applicant to provide information on the impact of the development that is the subject of the application. The Development Approval Information Bylaw specifies the matters for which additional on-site and off-site information may be required, including issues such as an assessment of the wildfire interface.

150 Mile House Area Official Community Plan Bylaw No. 4660 (2012)*:* The 150 Mile House Area OCP provides policies and objectives regarding land uses and servicing requirements in portions of Electoral Areas F surrounding 150 Mile House and includes the community of Dugan Lake. The remainder of the Electoral Area, outside of the Williams Lake Fringe Area and 150 Mile House OCP's, is not covered under any other OCP.

Planning policies guide decisions to be made by the CRD Board of Directors when considering applications for various types of development. Wildfire is identified within the OCP as one of the land use constraints and objectives for which OCP policies have been structured to address. The following sections specifically pertain to wildfire:

- *Section 3.3.12-23 Environmental Management: Wildfire*

  Highlights for objectives and policies under this section include the following:

  - Areas of High Wildfire Probability (High, Very High and Extreme) are spatially delineated in Schedule E.
  - Prior to undertaking any subdivision or land use development that will create four or more parcels or dwelling units within **any** interface wildfire probability area (Schedule E), the landowner shall provide the Regional District with a Wildfire Hazard Assessment Report for the proposed development, prepared by a Registered Professional Forester licensed in BC or an equivalent qualified professional. The Wildfire Hazard Assessment Report shall: assess the current wildfire hazard, assess conditions on the site and neighbouring lands, evaluate the proposed development for wildfire susceptibility, and provide FireSmart wildfire hazard mitigation recommendations to reduce the hazard of wildfire for the land and buildings. The recommendations of the Wildfire Hazard Assessment Report shall be implemented during development and written into a restrictive covenant to be registered on a property title advising the property owner of the ongoing responsibility to manage their land and buildings in accordance.
  - For any subdivision or land use development that will create fewer than four parcels or dwelling units in a high, very high and extreme wildfire probability area, and for any subdivision or land use development in a moderate wildfire probability area (as identified by the relevant provincial agency), the property owner shall register a standard restrictive covenant on the property title encouraging land owners to use FireSmart wildfire mitigation practices for building construction and land management to reduce the wildfire hazard in their development.

Additionally, the OCP allows for the *Development Approval Information Bylaw No. 5008 (2016),* which applies to all lands within the OCP Bylaw area, the authority requires an applicant to provide information on the impact of the development that is the subject of the application. The Development Approval Information Bylaw specifies the matters for which additional on-site and off-site information may be required, including issues such as an assessment of the wildfire interface.

Williams Lake Fringe and 150 Mile House Area Zoning Bylaw No. 3502 (1999): This Zoning Bylaw establishes land use regulations and provisions for the Williams Lake Fringe and 150 Mile House Planning Area. The Williams Lake Fringe and 150 Mile House Planning Area contains portions of Electoral Areas D, E and F in the Cariboo Regional District. For Electoral area F, this includes the areas referred to as 150 Mile House, and Borland Valley which surround and are located outside of the limits of the City of Williams Lake.

Central Cariboo Area Rural Land Use Bylaw No. 3503 (1999): The Rural Land Use Bylaw (RLUB) defines the regulations and provisions of the Cariboo Regional District Board of Directors respecting land use and development in the areas of Electoral Area D, E, and F not covered under the 150 Mile Area and Williams Lake Fringe Area OCPs. The current RLUB does not establish any regulations pertaining to wildfire hazard in land use or development planning.

Cariboo Regional District Fire Departments Bylaw No. 5014 (2016): Identifies the fire protection areas, operational responsibilities, authorities, and level of required training for CRD Fire Departments and the designated Fire Chiefs. It is important to note that the jurisdiction of these fire departments does not extend past the predetermined Fire Protection Area (FPA) boundary, without the written approval of the CRD Board. The bylaw gives the Fire Chief and members of the Fire Departments the authority to cause actions necessary to deal with an incident, such as to prevent the spread of a fire. However, language is unclear regarding the authority of the Fire Chief to regulate or restrict hazardous fire activities and open fires to prevent fire ignitions from occurring.

Cariboo Regional District Untidy and Unsightly Premises Regulatory Bylaw No. 4628 (2011): Identifies the legal requirement for property owners to maintain tidy and sightly properties and manage accumulation of filth, discarded materials, rubbish or unsightly materials of any kind. This Bylaw could be further bolstered and utilized to enforce FireSmart principles relating to flammable debris located in the first 10 metres of homes.

Actions: The CRD should consider developing and implementing additional local regulatory requirements relating to planning for Electoral Area F that incorporates further wildfire risk reduction principles:

Action Number	Action/Recommendation	Priority Level
Action #13	Ensure that going forward, planning and development throughout the CRD considers wildfire risk in all aspects. This includes ensuring all local emergency and development plans and bylaws are developed, updated, or amended to align with wildfire risk reduction and FireSmart principles.	Very High
Action #14	Amend the Williams Lake Fringe Area OCP and 150 Mile House OCP sections pertaining to wildfire policies and objectives and consider including: • Establishing and writing into Bylaw, Wildfire_Development Permit Areas that may require development permit approval based on FireSmart guidelines. Consider writing into bylaw to	High

Action Number	Action/Recommendation	Priority Level
	integrate wildfire hazard mitigation into regulatory planning processes. • Update Wildfire Probability Mapping in the Williams Lake Fringe Area (Schedule F) and 150 Mile House (schedule E) OCPs to reflect the most up-to-date Wildfire Hazard mapping. • Include wildfire assessment and FireSmart requirements for subdivisions < four parcels and single building development within the WUI.	
Action #15	To assist the CRD in covering Wildfire Hazard DPA administrative permitting costs, update Development Procedures and Fees Bylaw 5458 to: • include 'wildfire hazard' as item (e) in Section 4; and part of the list in Section 8(c); • set fees for the processing and approval of wildfire hazard assessment and post-development inspection reports; and • stipulate the amount of holdback monies held by the CRD to be released upon compliance.	High

5.3 Development Considerations

Development decisions, such as land use types, structure density, road patterns, and other considerations, shape the built and natural environments. These decisions can bring lasting impacts to the WUI and wildfire risk by affecting public and first responder safety and survivability of homes, critical infrastructure, and other community features. Considering these factors early in the development process can reduce wildfire risk to life safety and property.

Goal: To utilize regulatory and administrative tools to guide new development and increase the number of homes and infrastructure compliant with FireSmart principles.

Context: In BC, communities can establish Development Permit Areas (DPAs) that incorporate wildfire risk into construction and development. This tool can effectively enhance wildfire preparedness and mitigation by addressing development factors like subdivision layouts, fire-resistant building materials, and landscaping. Wildfire Hazard Development Permit Areas are typically delineated in fringe areas around a community where development occurs within or near the wildland urban interface. Development considerations could include the following:

- **Wildfire Hazard Assessment**: Require completion of a wildfire hazard assessment by a qualified professional (e.g. Registered Forest Professional) prior to the development of new neighbourhoods, subdivisions, or primary residences.
- **Landscaping**: Utilize FireSmart approved vegetation and spacing in landscaping within the Home Ignition Zones. Prohibit the use of cedar hedging as a form of privacy screening.
- **Building Materials**: Utilize fire-resistant building materials and construction techniques recommended by FireSmart, such as non-combustible roofing materials, fire-rated siding, and ember-resistant vents.
- **Community Planning**: Integrate FireSmart principles into community planning processes to promote wildfire-resilient design and bring the overall risk of wildfire to acceptable levels for neighbourhoods and developments.

Current Status: The Williams Lake Fringe Area OCP sections 4.3.49 through 4.3.57 describes objectives and policies to regulate development within the wildland urban interface. However, the mapped Wildfire Probability area (Schedule F) is out of date and needs to be updated to reflect current wildfire hazard conditions. Additionally, although the framework is in place within the Williams Lake Fringe Area OCP to support a Wildfire Development Permit Area (DPA), this has not yet been established and written into bylaw.

Additionally, the *Central Cariboo Area Rural Land Use Bylaw No. 3503 (1999)* covering portions of Electoral Area F outside of the Williams Lake Fringe and 150 Mile House Area does not contain any policies regulating development within rural or settlement areas that pertains to wildfire hazard.

The *Cariboo Regional District Development Approval Information Bylaw No. 5008 (2016*) does stipulate that, where an OCP identifies lands in which development approval information is required, the Manager of Planning Services may require a development approval report identifying susceptibility to wildfire, from conditions both on and offsite,

and specify ways to reduce wildfire hazard and wildfire risk. However, it is unclear the circumstances for which this may be required or professional accreditation required to develop such reports.

In addition to new developments, it is important to assess and address the vulnerability of existing critical infrastructure, facilities, and homes to wildfire. The state of the structure in question and the immediate 30-meter vicinity is crucial in determining the likelihood of ignition and potential damage from wildfire. FireSmart BC has developed Hazard Assessments for both Critical Infrastructure (CI) and the Home Ignition Zone. The assessments should be undertaken by an individual who has the appropriate knowledge and experience in wildfire vulnerability, such as a Local FireSmart Representative (LFR). Recommendations from the assessments can then be implemented to help reduce the spread, intensity, and associated damages to structures from wildfire. To date, limited critical infrastructure owned and operated by the CRD has had a FireSmart CI Assessment completed or FireSmart activities implemented. CI owned and operated by the CRD includes fire halls, landfills, and water and sewage systems.

Actions: The following are recommended action items regarding incorporating FireSmart and wildfire hazard into new development considerations and existing infrastructure.

Action Number	Action/Recommendation	Priority Level
Action #16	Complete FireSmart Critical Infrastructure Assessments on all CRD owned Critical Infrastructure (CI) within Electoral Area F, such as the 150 Mile Fire Hall, Miocene Fire Hall, transfer stations/landfills, and water/sewer systems.	Very High
Action #17	Once a FireSmart Critical Infrastructure Assessment has been completed, implement FireSmart recommendations and mitigation activities resulting from the completed Assessments with the goal of reducing hazard scores as much as feasibly possible.	High
Action #18	Consider amending the *Central Cariboo Area Rural Land Use Bylaw No. 3503* to include land use and development objectives, policies, and/or regulations pertaining to wildfire hazard for various types of development. Examples include: • FireSmart performance-based exterior “finish/design” and/or landscaping requirements for residential building development in rural and/or settlement areas, such as exterior materials, sprinkler protection systems, etc. • Development setback provisions and regulations pertaining to forested areas in rural and/or settlement areas.	High
Action #19	Revise the Development Permit application and approval process to ensure the following: • Bolster language within the Development Approval Information Bylaw 5008 pertaining to wildfire hazard assessment reports. • clearly stipulate guidelines or requirements for development approval such as creating FireSmart development guidelines, or creating a terms of reference to ensure standards for wildfire hazard assessment reports required for new development.	High

5.4 Interagency Cooperation

It takes the collaborative efforts of multiple stakeholders working together to achieve a fire resilient community. These people include the local fire departments, local government staff, elected officials, First Nations representatives, industry representatives and provincial government residents in your area. Individually they are responsible to their own organizations, but all the stakeholder organizations are dependent upon each other to develop an effective Community Wildfire Resiliency Plan and undertake a successful wildfire response.

Goal: To establish and maintain collaborative relationships amongst the Cariboo Regional District staff and key emergency response and management partners, including municipal Fire Departments and emergency preparedness staff, local First Nations, BC Wildfire Service, EMCR, Ministry of Forests, and other stakeholder groups to achieve a more wildfire resilient region.

Context: As of 2024, the CRI FCFS Program required all applicants to participate in a *Community FireSmart and Resiliency Collaborative* (CFRC) in order to receive additional funding through the program.[33] This requirement for funding was implemented upon recognition of the importance of collaboration in emergency preparedness and response between various partners, agencies, and stakeholders sharing the landbase. Understanding the roles and responsibilities different groups play helps streamline wildfire preparedness and emergency response efforts.

The Wildfire Resiliency and Training Summit is an annual conference hosted by FireSmart BC that brings together wildfire practitioners from across BC. Attendees range widely from fire department chiefs and local government emergency management staff to provincial government staff, BC Wildfire Service, First Nations representatives, and forestry consultants. Currently under the CRI FCFS Program, funding is available for up to four local government staff (including fire departments) to attend the Wildfire Resiliency and Training Summit annually.

Current Status: The Cariboo Regional District has an active Community Wildfire Resiliency Committee comprised of key internal local government staff including the FireSmart Coordinator, Manager of Planning Services, Manager of Solid Waste Chief Building Official, Manager of Intergovernmental Relations, Regional Fire Chief, Manager of Emergency Program Services, and Manager of Communications. The group meets quarterly to discuss local emergency preparedness priorities for the Regional District.

Additionally, staff from the CRD Emergency Program Services department sit on the Williams Lake & Area Wildfire Roundtable and the Quesnel and Area Wildfire Roundtable. These roundtable groups consist of a larger group of partners and stakeholders local to the applicable regions, including:

- Municipal governments
- Local First Nations governments
- Ministry of Forests
- Ministry of Water, Land and Resource Stewardship
- Ministry of Emergency Management and Climate Readiness

[33] For more information regarding FireSmart Community Funding & Supports Program visit: https://www.ubcm.ca/cri/firesmart-community-funding-supports

- BC Wildfire Service
- Local forest licensees (major licensees, BC Timber Sales, woodlot licensees, community forests)
- Fire departments
- Other organizations, individuals or businesses that have infrastructure to protect, or resources or capacity to provide (e.g., agriculture organization, communications companies)

5.4.1 Indigenous Government Engagement Re: Interagency Cooperation

Engagement session that took place with the Esk'etemc, Xatśūll, ?Esdilagh, Tsq̓éscen̓ Williams Lake First Nations and Tsilhqot'in National Government highlighted opportunities for the CRD to cooperate with each First Nation to increase and improve *Interagency Cooperation* by strengthening partnership and increasing transparency to better serve all residents. Currently, the opportunities for *Interagency Cooperation* as discussed at each engagement session, includes:

Fire Department Mutual Aid Agreements: During engagement sessions, conversations took place around fire department capacities and interagency cooperation, to better support one another during large and/or multijurisdictional fire events. Implementing mutual aid agreements between interagency fire departments, where applicable, helps to increase opportunities for coordinated response, training, sharing of resources and expanding local knowledge. The CRD should continue to explore mutual aid agreements with interagency fire departments, where applicable, and maintain and support the ones currently in place.

- **Community Wildfire Roundtables Participation:** Discussions around participation in ongoing planning processes identified current Community Wildfire Roundtables as an opportunity to bring together individuals and organizations responsible for different aspects of wildfire preparedness and risk reduction within a region, supporting good coordination and communication. The Williams Lake and Area Roundtable is currently attended by Williams Lake First Nation, Xatśūll First Nation and Esk'etemc First Nation and the Quesnel and Area Wildfire Roundtable is attended by ?Esdilagh. The CRD, among many other organizations, attend both of these roundtable sessions as well.
- **Future CWRP Engagement:** Esk'etemc, Xatśūll, ?Esdilagh, Tsq̓éscen̓, and Willaims Lake First Nations are each currently at various stages of wildfire resiliency planning. A CWRP for the ?Esdilagh nation is currently in development, both Williams Lake and Esk'etemc First Nations have Community Wildfire Preparedness Plans (CWPPs), Tsq̓éscen̓ expressed being familiar with the process and Xatśūll just became aware of CWRPs at the engagement meeting. All, apart from ?Esdilagh, have expressed interest in applying for funding to develop CWRPs for their communities in the coming years. Future engagement opportunities during the development of these CWRPs can identify opportunities for coordinated efforts to treat and manage adjacent lands and further cooperation.

Actions: The following actions are recommended for continuity of successful interagency cooperation:

Action Number	Action/Recommendation	Priority Level
Action #20	Continued active participation in the Williams Lake & Area Community Wildfire Roundtable to work towards effective and efficient emergency planning, vegetation/fuel management, and communication protocols surrounding the Williams Lake area. The established Roundtable acts as the Community FireSmart and Wildfire Resiliency Collaborative that is required to receive ongoing CRI funding for FireSmart and wildfire risk reduction activities.	Very High
Action #21	Participate in an integrated fuel management / prescribed fire planning table in collaboration with representatives from the Ministry of Forests Cariboo-Chilcotin District, BC Wildfire Service Cariboo Fire Centre, local First Nations, municipal governments (Williams Lake, Quesnel, 100 Mile House), BC Parks, and local forest licensees (First Nations Woodland License, Community Forest, and Woodlot License tenure holders).	Very High
Action #22	Provide Indigenous cultural safety and humility training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.	Very High
Action #23	Send staff from the CRD Emergency Program Services, Protective Services, or other relevant local government departments to attend the annual *Wildfire Resiliency and Training Summit*.	Moderate

5.5 Cross-Training

Wildland-Urban Interface resiliency planning and incident response draw on many different professions who do not typically work in wildfire environment. Cross-training of fire fighters, public works staff, utility workers, local government and First Nations administration, planning and logistics staff, and other key positions will help support the development of comprehensive and effective wildfire risk reduction planning and activities, as well as a safe and effective response.

Goal: Develop a diverse skill set within local government, community members, Fire Departments, etc. to build redundancy and facilitate understanding across individuals/groups engaged in wildfire preparedness and response.

Context: Cross training helps build relationships between different groups/agencies/organizations, identifies areas of strength and weakness in existing emergency operations and processes, and ultimately enhances emergency preparedness. Currently, a number of cross training courses are available to local government staff and fire department personnel through UBCM's CRI funding program. As funding programs are subject to change, it is important to check for available cross-training courses annually.

Examples of available training courses for fire department members include:

- **Wildfire Risk Reduction Basics Course** - free, online course for non-forest professionals that provides an introduction to the key concepts to minimize the negative impacts of wildfires in BC.
- **Fire Life and Safety Educator** - public education course for fire safety education.
- **ICS-100 (Incident Command System)** - introduction to an effective system for command, control, and coordination of response at an emergency site.
- **S-100** - Basic fire suppression and safety and S-100A (annual refresher).
- **S-185** - Fire entrapment avoidance and safety.
- **SPP-WFF1** - Wildland Firefighter Level 1 (includes S100, S-185, and ICS-100).
- **Wildland Structure Protection Program (WSPP-115)** - training for structure protection unit crews and WSPP-FF1(train the trainer).
- **S-231** - Engine Boss (training for structure protection program in a WUI event).
- **SPP-115** - Structure Protection Program (training for structure protection within the WUI).
- **WSPP-WFF1** - Trainer (train the trainer for WFF1).

Cross-training opportunities also exist for local government emergency management personnel and the FireSmart Coordinator position. Eligible training courses available to these personnel include:

- **Local FireSmart Representative (LFR) training** – free online course to enhance understanding of current Wildland Urban Interface concepts and wildfire hazard assessments.
- **Wildfire Mitigation Program** – Wildfire Mitigation Specialist (WMS) training for new applicants to the WMP program.
- **Wildfire Mitigation Specialist 'Train the Trainer'** - This course is available for active WMS to become a certified WMS trainer that can instruct WMS training to staff within their community or neighbouring communities.

- **Introduction to Emergency Management in Canada (EMRG-1100)** - Basic concepts and structure of emergency management.
- **ICS-100 (Incident Command System)** - introduction to an effective system for command, control, and coordination of response at an emergency site.
- **FireSmart BC Landscaping Course** - free online course suitable for public works, lands, and/or parks staff.

Current Status: All CRD Volunteer Fire Departments (VFD's), including the 150 Mile House Fire Department, covering a portion of Electoral Area F, complete regular training for two hours each week. The Central Cariboo mutual aid agreement includes the Wildwood, 150 Mile House and Williams Lake Fire Departments, allowing for a more streamlined mutual response to emergencies and opportunity for joint training events and relationship building between departments. Additionally, certain individuals withing CRD VFDs have participated in some wildland suppression cross training events. Personnel receiving wildland fire specific training is decided on at the individual department level, based on their capacity and need.

Actions: The following are recommended action items relating to FireSmart and wildfire response cross training

Action Number	Action/Recommendation	Priority Level
Action #24	Provide cross-training opportunities to CRD Emergency Program Services and Protective Services staff, and other applicable personnel to further build capacity and redundancy within and between departments. Examples of cross training courses include: • Local FireSmart Representative (LFR) training • FireSmart BC Farm and Ranch training (required in order to conduct Farm and Ranch Assessments) • EMRG-100 - Introduction to Emergency Management in Canada • ICS-100 - Incident Command System	High
Action #25	Provide ongoing cross-training opportunities for local firefighters in the CRD Volunteer Fire Departments, including the Wildwood VFD. Examples of wildfire suppression training courses include: • S-100 – Basic fire suppression and Safety • S-185 – Fire entrapment avoidance and safety • ICS-100 – Incident Command System introduction • WSPP-115 - Wildland Structure Protection Program (training for structure protection unit crews)	Moderate
Action #26	Identify if there are any established volunteer fire fighters within the CRD who have a strong interest in training to become prescribed fire practitioners. Courses and training have become available for skilled fire practitioners to expand their skills and knowledge towards becoming conversant in the use of prescribed fire for ecological restoration and wildfire prevention.	Low

5.6 Emergency Planning

Community preparations for a wildfire emergency requires a multi-pronged approach. Individuals and agencies need to be ready to react by developing plans, mutual-aid agreements, resource inventories, training, and emergency communication systems. All of these make it possible for a community to respond effectively to the threat of wildfires.

Goal: The goal of emergency planning is to prepare the community to respond safely and effectively, in partnership with local first response agencies and local and regional authorities to wildfire events.

Context: Emergency management programs should focus on the four pillars of emergency management planning:

1. Prevention and mitigation,
2. Emergency preparedness,
3. Response activities, and
4. Recovery.

As observed in recent busy fire seasons, simultaneous wildfire emergencies across the province can strain resources, leading to shortages in heavy equipment, BCWS staff, and contractors. Resource availability may be severely limited or scarce during such times, necessitating the triage or prioritization of emergencies provincewide. Therefore, local governments, partners, and individuals must be prepared and proactive in their response efforts. Comprehensive and apt Emergency Response Plans are a critical first step for communities to prepare for a large emergency event.

Current Status: The current CRD Emergency Plan was developed in 2006. It provides guidance and direction for district staff to follow in the event of an emergency within the CRD. The Hazard Risk and Vulnerability Analysis, which identifies wildland and interface fires as being the highest risk emergency within the CRD, provides clarification regarding the levels of municipal, provincial and federal response to emergencies, information on roles and responsibilities for CRD departments during an emergency, and evacuation protocols.

In 2023, the new *Emergency and Disaster Management Act* (EDMA) came into force, replacing the previous *Emergency Program Act*. To support the new legislation, the provincial government is updating and developing regulations in consultation and cooperation with First Nations. The CRD is currently awaiting finalization of the new EDMA Regulations to update their current Emergency Management Plan and ensure alignment with the most recent legislation. In preparation, they have increased their engagement and collaboration with local First Nations and municipal governments.

5.6.1 Indigenous Government Engagement Re: Emergency Planning

Engagement session that took place with the Esk'etemc, Xatśūll, ?Esdilagh, Tsq̓éscenˈ Williams Lake First Nations and Tŝilhqot'in National Government highlighted opportunities for the CRD to cooperate with each First Nation to increase and improve *Emergency Planning* by identify and creating efficiencies and coordinating emergency response efforts to better serve all residents. Currently, the opportunities for coordination and joint emergency planning as discussed at each engagement session, includes:

- **Communication/Collaboration Agreements for Emergency Response:** During engagement sessions, CRD staff expressed interest in developing emergency response agreements with each Nation to ensure consistency of notification and/or collaboration during an emergency event. Each Nation agreed that improving lines of communication through the development of a formal agreement would improve emergency management capacity. Each Nation provided contact information to the CRD for the appropriate personnel to begin to create these agreements.
- **Cultural Understanding and Sensitivities for Evacuations:** During engagement sessions, the CRD inquired about opportunities better support each Nation during evacuation events by better understanding potential cultural safety considerations for evacuees. Through Emergency Support Services, the CRD is working with each First Nation to identify and understand specific cultural sensitivities and create the appropriate supports to reduce negative impacts and trauma associated with evacuation alerts, orders and return to communities.
- **Culturally Informed Map Outputs:** During engagement sessions, the CRD asked if each nation was interested in adding culturally informed map outputs, in addition the contemporary outputs on maps created and utilized by the CRD. Each First Nations identified in their engagement session that they would be interested in collaborating with the CRD to develop culturally informed map outputs for the CRD to better understand the traditional names of significant sites, to strengthen relationships, and increase understanding during emergency planning and response efforts.
- **After-Action Reviews:** During the engagement session with Williams Lake First Nation, when asked about involvement in recovery planning or After-Action Reviews, members stated that they would like to continue to be involved in these events, as in the past, to share information, ideas and provide feedback.
- **Tabletop Exercises:** During the engagement session with the Xatśūll and ?Esdilagh First Nations, when asked about opportunities to work more closely with the CRD during wildfire preparedness and planning, community members expressed interest in participating in a tabletop exercises with the CRD. Tabletop exercises can help strengthen regional wildfire resiliency planning, preparedness and response, and provide opportunity to better understand the processes of each government's emergency programs. Opportunity may be explored for the CRD EOC personnel to conduct tabletop exercises with each First Nations emergency program coordinators.

Actions: The following are recommended action items to improve emergency planning and preparedness relating to wildfire:

Action Number	Action/Recommendation	Priority Level
Action #27	Update the CRD Emergency Plan to reflect updated emergency legislation, area demographics, and emergency planning from neighbouring First Nations and local governments.	Very High

Action Number	Action/Recommendation	Priority Level
Action #28	Ensure strong emergency communication strategies are developed and maintained between the CRD and local First Nations, Tsq̓éscen̓, ?Esdilagh, Xatśūll, Esk'etemc, and Williams Lake First Nations within Electoral Area F. This includes maintaining living databases of appropriate contacts within each Nation. Nations should be contacted regarding emergency wildfire events occurring on their traditional territory. This will ensure the applicable Nation is informed and involved in emergency planning and response as it relates to their members, lands, and values.	Very High
Action #29	During emergency planning, consider the number of residents throughout Electoral Area F that may be more vulnerable or at higher risk during an emergency evacuation event due to factors such as: • Unreliable cell phone coverage or internet bandwidth resulting in delayed or unsuccessful communication, • Residents who are elderly, have limited mobility, or may require additional support during an evacuation.	Very High
Action #30	Apply for UBCM's *Public Notification and Evacuation Route Planning* funding stream and assess areas throughout the Cariboo Region that are particularly vulnerable due to isolation, limited evacuation routes, etc. Develop a comprehensive evacuation plan that thoroughly considers evacuation options and includes an inventory of private roads and all potential egress routes.	Very High
Action #31	Promote and encourage all Electoral Area F residents to subscribe to the CRD's emergency public notification system, VoyentAlert! Emergency notifications can be delivered via email or phone. These notifications are critical to ensuring residents are receiving the same important information regarding emergencies impacting their area.	High
Action #32	Organize and/or participate in cross-jurisdictional meetings, tabletop exercises, or mock scenarios specifically focused on wildfire preparedness in the South Cariboo Region. This should occur in collaboration with emergency management staff from local First Nations and neighbouring municipal governments.	High
Action #33	Assess and inventory FireSmart Structure Protection equipment located within the 150 Mile House and Miocene Fire Departments. It is recommended that Fire Departments have functioning Structure Protection Trailers, where feasible. Apply for funding to purchase any missing equipment to complete a fully stocked Structure Protection Unit.	Moderate
Action #34	Continue with the Operational Community Liaison Program through the CRD's Emergency Operations Centre.	Moderate

5.7 Vegetation Management

The general goal of vegetation management is to reduce the potential wildfire intensity and ember exposure to people, infrastructure, structures and other values through manipulation of both the natural and cultivated vegetation that is within or adjacent to a community. A well-planned vegetation management strategy that is coordinated with development, planning, legislation and emergency response wildfire risk reduction objectives can greatly increase fire suppression effectiveness and reduce damage and losses to structure and infrastructure.

Goal: Proactively manage vegetation at multiple scales such as the Home Ignition Zone, Community Zone and Landscape Zone to reduce the potential wildfire intensity and ember exposure to people, infrastructure, and other values.

Context: Fuel management, also referred to as vegetation management or fuel treatment, is an important element of wildfire risk reduction within the WUI. The primary objective of fuel management treatments is to reduce the fuels available to burn and alter aspects of wildfire behaviour to allow for safer and more effective suppression strategies.

Over 50% of the one-kilometre WUI area throughout Electoral Area F is occupied by private land parcels, including large rural lots, in which funded fuel management treatments are ineligible. Completing fuel management treatments on provincial crown land without similar wildfire risk reduction activities and treatment on adjacent private land will ultimately reduce the effectiveness of those fuel treatments. This highlights the critical importance of private landowners implementing FireSmart activities on their homes/structures and extending out into the Immediate, Intermediate, and Extended Zones. This is particularly important for large, forested private land parcels often found in rural communities.

5.7.1 FireSmart Landscaping (Residential and Critical Infrastructure)

FireSmart landscaping is the removal, reduction, or conversion of flammable plants (such as landscaping for residential properties, parks, open spaces, and critical infrastructure) in order to create more fire – resistant areas in the Home Ignition Zone around homes, structures, and infrastructure. The *FireSmart BC Landscaping Guide*[34] is an excellent tool to help residents and planners make informed choices about how to manage their lawns and gardens to increase resilience to wildfire on their properties. The guide provides a diverse list of fire-resilient plants suitable for different areas of the Province based on cold-hardiness, drought tolerance, and avoidance of harmful invasive species. Additionally, it provides tips for spacing and pruning of vegetation, mulch considerations, and maintenance.

Vegetation management guidelines at the residential scale are further delineated by the FireSmart priority zones. Please refer to Appendix C for guidelines within each priority zone.

[34] https://firesmartbc.ca/wp-content/uploads/2021/04/FireSmartBC_LandscapingGuide_Web_v2.pdf

Critical Infrastructure

FireSmart BC has developed a FireSmart Critical Infrastructure (CI) Hazard Assessment Form[35] for assessing the vulnerability of critical infrastructure to wildfire. Results of the assessment can help provide mitigation recommendations to enhance wildfire resiliency, including upgrades to structure components or vegetation management in the Ignition Zones surrounding the structure. In many cases, the assessment and subsequent mitigation may extend beyond the legal land parcels on which the critical infrastructure occupies and may require collaboration with adjacent land managers or landowners. Completion of FireSmart Critical Infrastructure Hazard Assessments on CI identified for the CRD was beyond scope of this CWRP project; however, an important next step would be to complete FireSmart Assessments on the highest priority values throughout Electoral Area F.

5.7.2 Complete or Overlapping Fuel Treatment Units

There are a number of wildfire risk reduction activities on crown land across the Cariboo region that are planned or have been completed over the past 20 years. This section highlights the most pertinent wildfire risk reduction work occurring within Electoral area F and identifies any overlap with proposed Fuel Treatment Units (FTUs) from this CWRP.

Likely Xatśūll Community Forest

The Likely Xatśūll Community Forest, a partnership between the community of Likely and the Xatśūll Nation, surrounds the rural communities of Likely and Hydraulic within Electoral Area F. The community forest has several proposed wildfire risk reduction areas that surround various neighbourhoods. Of these proposed areas, there are three that have been approved for treatment: Area 1, Area 2, and Area 3 (Table 15). Area 4 and 5 have not yet been approved for treatment; as a result, there are proposed FTUs within this CWRP that overlap these areas and are listed by unit ID in Table 15. This CWRP does not include proposed fuel treatment units that overlap the existing approved units within the community forest under the assumption that the community forest will undertake necessary planning to implement these treatment units without assistance from the CRD.

Table 15: Approved Wildfire Risk Reduction Units within the Likely Xatśūll Community Forest and overlapping fuel treatment units proposed as part of this CWRP.

WRR Unit ID	Location	Overlapping FTU from this CWRP
Area 1	Winkley Creek	N/A
Area 2	South Likely Road	N/A
Area 3	Morehead Subdivision	N/A
Area 4	Downtown Likely	FTU_F16
Area 5	Rosette Lake Road	FTU_F15

[35] https://firesmartbc.ca/wp-content/uploads/2021/04/07.23.24_FireSmart_CriticalInfrastructureHazardAssessmentForm.pdf

Woodlots BC

Woodlot tenures are unique to B.C., where public forested land is designated for management by families, small incorporated companies, or First Nations communities who hold licences to manage these areas. The Forest Enhancement Society of BC (FESBC) approved funding to Woodlots BC to carry out wildfire risk reduction treatments in woodlots throughout the province. Woodlots that are located within a Wildland Urban Interface and deemed high to extreme risk have been prioritized and endorsed by the local Forestry District and BC Wildfire Service. Several woodlots located within the Cariboo region were identified as a priority for receiving funding for wildfire risk reduction treatment. Some proposed FTUs within this CWRP overlap with high threat woodlot areas identified as a priority for treatment by Woodlots BC. These areas are outlined in Table 16.

Table 16: High priority Woodlot areas for wildfire risk reduction and overlapping FTUs from this CWRP

Woodlot License	Overlapping FTU from this CWRP
W1648	FTU_F6
W0545	FTU_F20

Wildland Urban interface Wildfire Risk Reduction Plans

In 2023, the Fox Mountain and South Lakeside Wildland Urban Interface Wildfire Risk Reduction (WUI WRR) Plan was completed for the fringe areas surrounding Williams Lake. The area included provincial crown land in a small portion of Electoral Area F near the Sugarcane Reserve, including the subdivisions along White Road, Fowler Road, Sutton Road, and Panorama Drive. The Plan was completed by the Cariboo Chilcotin Resource District under the Crown Land Wildfire Risk Reduction (CLWRR) funding stream. The WUI WRR Plan focuses on assessing wildfire hazard on provincial crown land at a broader landscape level surrounding populated areas and values at risk. As a part of the WUI WRR Plan, proposed Fuel Treatment Units (FTUs) representing high wildfire hazard were identified on the landscape. Many of these FTUs are adjacent to CRD neighbourhoods and subdivisions.

As a result of the recently completed WUI WRR Plan and to avoid redundancy, wildfire threat assessment field work for this CWRP was not completed in areas that overlapped the Fox Mountain and South Lakeside WUI WRR Plan area. Proposed Fuel Treatment Units in this CWRP do not include or overlap proposed FTUs from the WUI WRR Plan. The Ministry of Forests is responsible for funding and implementation of FTUs from the Fox Mountain and South Lakeside WUI WRR Plan.

Additionally, the City of Williams Lake is currently in the process of completing an updated Community Wildfire Resiliency Plan that covers all municipal land within the City of Williams Lake, as well as area within the WUI that may extend past the municipal boundary. Proposed Fuel Treatment Units from the Williams Lake CWRP will aim to work in tandem with proposed FTUs from the Fox Mountain and South Lakeside WUI WRR Plan and/or the CRD CWRPs for applicable fringe Electoral Areas.

5.7.3 Indigenous Government Engagement Re: Vegetation Management

Engagement session that took place with the Esk'etemc, Xatśūll, ?Esdilagh, Tsq̓éscen̓ and Williams Lake First Nations highlighted opportunities for the CRD to cooperate with each First Nation regarding *Vegetation Management* within their respective traditional territories by ensuring Nations remain informed and involved early in the planning process. Any works conducted on any Nations traditional territory must go through the referrals process. **Additionally, the Esk'etemc, Xatśūll, ?Esdilagh, Tsq̓éscen̓, and Williams Lake all expressed interest in reviewing planned fuel treatment units (FTUs) prior to any work taking place to identify any overlap with cultural sites to provide direction on how to respectfully proceed with and/or alter treatment areas, as need be**.

The Esk'etemc, Xatśūll, Tsq̓éscen Williams Lake First Nations have completed various levels of fuel reduction on and/or adjacent to their reserve land through fuel treatments and/or cultural burns. To enhance the effectiveness of fuel treatments on the landscape, where applicable the CRD should consider opportunities for collaborative planning of proposed fuel treatments that can tie into existing or planned treatment areas from the Nations.

5.7.4 Proposed Fuel Treatment Units

The proposed FTUs for this CWRP were identified based on wildfire threat identified during field work, available provincial crown land located within the eligible WUI, proximity to values, accessibility, and forest fuel types. The areas identified for potential treatment within Electoral Area F are detailed in Table 17.

The proposed FTUs in Table 17 are listed in order of general priority ranking classification, which are defined as:

1 = High Priority
2 = Moderate Priority
3 = Lower Priority

Priority ranking assignment took into consideration a multitude of factors including both the Wildfire Threat Assessment Scores and Priority Setting Scores from the Wildfire Threat Assessment Worksheet completed in the field, as well as other local factors such as accessibility, anchoring features, overlapping values, and/or constraints to fuel management activities. Prioritization ranking did NOT consider political or public appetite for fuel treatment activity within specific communities/neighbourhoods.

As assigning priority levels and rankings can be a subjective process based on best available information and an imperfect science, the CRD withholds the right to complete proposed fuel treatment activities in whatever order they see fit and are not required to complete FTUs in the order listed in Table 17. The Priority Ranking of FTUs within this CWRP is intended to guide the Regional District in pursuing fuel treatment activities based on overall wildfire threat of a stand, risk to values, and efficacy of treatment. Furthermore, the FTUs identified as part of this CWRP are only proposed and require further refinement based on more intensive data collected during the fuel management prescription development phase.

Once an area is identified as a proposed fuel treatment unit, completing the vegetation/fuel management on the land base is a two-phase approach; the first phase involves the development of a Fuel Management Prescription (FMP) by a BC Registered Professional Forester (RPF). The FMP details the site-specific attributes and ecology of the identified forest area and prescribes appropriate strategies for fuel reduction that meet objectives for wildfire risk reduction, as well as other important overlapping values such as wildlife habitat, ecological restoration, or recreation. It is the responsibility of the prescribing forester during the FMP development phase to ensure the proposed fuel treatment activities are ecologically suitable for the existing forest stand and site conditions, and promote long-term

forest resilience. Additionally, it is during the FMP development phase where further information sharing is completed with Indigenous Governments and stakeholders to ensure all concerns are identified and addressed/incorporated.

The final phase is the implementation of the FMP where treatment operations occur on the ground. Operational contractors must be acquired to complete the treatment specifications as outlined in the FMP.

Additionally, **for proposed treatments overlapping the jurisdiction of other land managers, the Regional District MUST work in collaboration with the Ministry of Forests, First Nations, and other applicable land managers at the fuel prescription development phase to determine suitability of treatment and funding options.** Other land managers include but are not limited to:

- ***Woodlot owners*** – funding is available through Woodlots BC and the Forest Enhancement Society of BC (FESBC) for fuel treatments within woodlots
- ***Community Forests*** – funding is available through FESBC for fuel treatments within community forests
- ***First Nations Woodland Licenses (FNWL)*** – funding is available through FESBC and other avenues for fuel treatments within FNWLs.
- ***Provincial Parks and Protected Areas*** - it is the jurisdiction of BC Parks to fund and implement fuel treatments within their parks and protected areas**.**

Table 17 below details the proposed FTUs and includes information on their priority ranking and level, general size, local wildfire threat, overlapping values and land managers, rationale for treatment, and overall status. Detailed maps outlining the location of the FTUs can be found in accompanying **Annex E: Maps.**

Table 17: Proposed Fuel Treatment Units (FTUs) for the CRD's Electoral Area F.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
FTU_F3	**1**	133.89	Community Resilience	Extreme (WTA LT_F6)	Managed Licence: W1696 A schedule B; Recreation Polygons: Pigeon Road Greenbelt; Ungulate Winter Range Conditional Harvest: u-5-002 Old Growth Management Area Legal: CAR_RCA_5119; Range Tenure: RAN076829; Endangered Occurrences: common Cattail Marsh; Traplines: TR0502T017; Visual Landscape Inventory: Partial Retention Waterworks line: 05EL211	The proposed TU surrounds the north, east and west sides of residential properties in the Pigeon Road subdivision area near 150 Mile House. **Majority of the unit is within Woodlot License W1696.** The FTU boundary ties into private land, previously treated areas (100m fuel break completed in 2013) and includes some areas that have been previously harvested. The area consists of C-3 fuel type primarily comprised of overgrown Douglas-fir. Understory conifer density is high (>1500 sph) with dead branches extending to the ground creating a continuous fuel stratum from surface to crown. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include a thin from below harvest to return the stand to historical conditions, as well as understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the residences and increase landscape level resiliency.
FTU_F4	**1**	50.61	Community Resilience	Extreme (WTA LT_F12)	Old Growth Management Area: CAR_RCA_4976; Range Tenure: RAN076891; Traplines: TR0502T017;	The proposed TU is adjacent to the southeast side of residential properties along Junction Road near Dugan Lake. The FTU boundary ties into private land, and a previously harvested 25-year-old plantation. The area consists of C-7 fuel type primarily comprised of overgrown Douglas-fir with some patches that

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Visual Landscape Inventory: Partial Retention	contain more deciduous species. Understory conifer density is high (>1500 sph) with dead branches extending to the ground creating a continuous fuel stratum from surface to crown. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include a thin from below harvest to return the stand to historical conditions, as well as understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the residences and increase defensible space from a wildfire advancing from the southeast.
FTU_F12	**1**	31.94	Community Resilience	High (WTA LT_F50, LT_F51)	Recreational Polygons: Quesnel Lake; Old Growth Management Area Legal: CAR_RCA_3286, CAR_RCA_3354; Priority Old Growth Deferral Area; Critical Habitat: Woodland Caribou (Southern Mountain population); Guide Outfitters: Gavin Nicol; Range Tenure: RAN078065;	The proposed TU provides surrounds residences on Quesnel Lake at Michel Bay. The FTU boundary ties into private land, Quesnel Lake, and a creek while providing a buffer between values at risk and a landscape with hazardous fuels and few impediments to wildfire spread. The area consists of a C-5 fuel type comprised of mature cedar, hemlock and Douglas-fir, with a high understory conifer density (>1500 sph), primarily cedar and hemlock with branches extending to the ground creating a continuous fuel stratum from surface to crown. Deeper duff and elevated CWD present suppression challenges. The mature cedar also makes

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Traplines: TR0502T020; Visual Landscape Inventory: Retention	this a hazardous stand for ground suppression crews. Resulting wildfire threat rating is High. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the residences/cabins. The buffer on the south side of the road allows for a safer opportunity for crews to conduct a planned ignition from in the event of an approaching wildfire.
FTU_F13	**1**	46.31	Community Resilience, Landscape Fuel Break	High (WTA LT_55)	Old Growth Management Area Legal: CAR_RCA_4400; Priority Old Growth Deferral Area; Range Tenure: RAN076655; Traplines: TR0502T027; Visual Landscape Inventory: Modification	The proposed TU targets a large section of ingrown Douglas-fir adjacent to rural residential properties in the Pioneer Crescent neighborhood off Likely Road. The FTU boundary ties into private land, creeks, a previously harvested block and the 2017 wildfire perimeter. The area consists of C-3 fuel type primarily comprised of Douglas-fir and spruce. Understory conifer density is high (>1500 sph) with branches extending to the ground creating a continuous fuel stratum from surface to crown. Resulting wildfire threat rating is High. Proposed treatment activities would include a thin from below harvest to return the stand to historical conditions, as well as understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels near the residences and increase landscape level resiliency.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
FTU_F16	**1**	39.82	Community Resilience	High (WTA LT_F67)	Managed Licence: K1L A Schedule B, W1453 A Schedule B; Ungulate Winter Range Conditional Harvest: u-5-002; Critical Habitat and Endangered Occurrences: Caribou (Southern Mountain Population); Guide Outfitters; Jack Gushue; Traplines: TR0515T020; Visual Landscape Inventory: Partial Retention	The proposed TU is adjacent to residences along Keithly Creek Road and Spooner Road in the Likely community. **The unit falls entirely within the Likely Xats'ull Community Forest and has been previously identified by the community forest as a high priority for fuel treatment.** The FTU boundary ties into private land and access roads. The area consists of a C-5 fuel type. The stand occurs on a steep, dry, south facing slope and is comprised of large mature Douglas-fir with spruce as a co-dominant. Understory conifer density, mostly cedar, is high (>1500 sph) with branches extending to the ground creating a continuous fuel stratum from surface to crown. Resulting wildfire threat rating is High. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the Likely community and provide a protective barrier between much of downtown Likely and the landscape.
FTU_F18	**1**	67.91	Community Resilience, Landscape Fuel Break	High (WTA LT_F1)	Managed Licence: N2K B Schedule B; Ungulate Winter Range (Conditional Harvest): u-5-002; Range Tenure: RAN074960;	The proposed TU lies adjacent to the north/northeast sides of residential properties along Hinsche Road in 141 Mile House. **The unit overlaps a large portion of Esk'etemc's First Nations Woodland License N2K.** The FTU boundary ties into private land, open grassland area and creeks/wet areas.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Critical Habitat and Endangered Occurrences: American Badger; Traplines: TR0502T017; Guide Outfitters: Wildlife Adventures International Inc. Visual Landscape Inventory: Modification, Partial Retention, Retention	The area consists of C-7 fuel type comprised of multi-aged Douglas-fir. Understory conifer density is higher close to the private property line with branches extending to the ground. Resulting wildfire threat rating is High. Proposed treatment activities would include a thin from below harvest to return the stand to historical conditions, as well as understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Prescribed fire could be used as a maintenance tool. Treatment would reduce coniferous fuels adjacent to the residences and increase landscape level resiliency. Presence of similar fuel structure on private land decreases the effectiveness of this treatment. Public outreach to the landholders should be done to encourage works on the private land.
FTU_F22	**1**	86.49	Community Resilience	High (WTA LT_F47)	Recreation Polygons: Kline Lake, Quesnel View, Quesnel Lake Public Landing; Old Growth Management Area Legal: CAR_RCA_3127, CAR_RCA_3131; Critical Habitat: Woodland Caribou (Southern Mountain population);	The proposed TU provides surrounds residences on the south side of Quesnel Lake, located off Marshall Creek Road. The FTU boundary ties into private land, Quesnel Lake, access roads and creeks. The area consists of a C-5 fuel type comprised of mature Douglas-fir, cedar and birch, with cedar in the understory. Understory conifer density is high (>1500 sph) and the amount of surface fuel present could result in very high fire intensities. The canopy is nearly closed, which presents aerial fire suppression challenges, while elevated CWD presents ground fire

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Terrain Slope Stability: Potentially Unstable (13.3 ha); Range Tenure: RAN077083; Guide Outfitters: Stuart Maitland; Traplines: TR0502T028 Visual Landscape Inventory: Partial Retention, Retention	suppression challenges. Resulting wildfire threat rating is High. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels surrounding remote residences on a landscape that currently has years of fuel build up and few impediments to wildfire spread, and help ease suppression efforts.
FTU_F29	**1**	36.21	Community Resilience, Landscape Fuel Brek	Extreme (WTA LT_10)	Old Growth Management Area (Legal): CAR_RCA_5106, CAR_RCA_5063 Ungulate Winter Range Conditional Harvest: u-5-002; Range Tenure: RAN076891; Traplines: TR0502T017	The proposed TU is adjacent to the north and west sides of residential properties in the Ferguson Road subdivision area near 150 Mile House. The unit ties into Valley Road in the easternmost corner. Orange boundary ribbon was present during field work, indicating potential planned harvest (Williams Lake First Nation operating area). The area consists of high-density C-3 fuel type with heavy surface fuel loading. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include a thin from below harvest to return the stand to historical conditions, as well as understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels directly adjacent to residences and increase landscape level resiliency.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
FTU_F28	**2**	66.77	Community Resilience	High (WTA LT_F30, LT_F31)	Priority Old Growth Deferral Area; Range Tenure: RAN076632, RAN076633, RAN076866; Trapline Area: TR0502T021; Visual Landscape Inventory: Partial Retention; Waterworks lines: 05DL1086, 05DL1102	The proposed TU lies adjacent to the north and east sides of residential properties off Rose Drive in the Rose Lake community. The area consists of a C-7 and mixedwood fuel types comprised of dense Douglas-fir with some patches of aspen. Well developed deciduous shrub understory. Surface fuel loading is high. Resulting wildfire threat rating is High. Proposed treatment activities would include a thin from below, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the residences and increase landscape level resiliency. Presence of similar fuel structure on private land decreases the effectiveness of this treatment. Public outreach to the landholders should be done to encourage works on the private land.
FTU_F25	**2**	15.31	Community Resilience	Extreme (WTA LT_F9)	Managed Licence: W1696 A Schedule B; Recreation Polygons: Pigeon Road Greenbelt; Ungulate Winter Range Conditional Harvest: u-5-002; Old Growth Management Area Legal: CAR_RCA_5119;	The proposed TU is adjacent to the east side of residential properties along Huston Road in the 150 Mile residential area. **The unit partially overlaps Woodlot License area W1696.** Some of the area overlaps a fuel treatment completed around 2018. The area consists of C-3 fuel type primarily comprised of Douglas-fir with a dense understory contributing to ladder fuels and a minimal fuel strata gap. Resulting wildfire threat rating is Extreme.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Range Tenure: RAN076829; Traplines: TR0502T017	Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to private residences. Presence of similar fuel structure on private land decreases the effectiveness of this treatment. Public outreach to landholders should be done to encourage works on the private land.
FTU_F5	**2**	14.43	Community Resilience, Egress Safety	Extreme (WTA LT_F14)	Old Growth Management Area Legal: CAR_RCA_4735; Priority Old Growth Deferral Area; Range Tenure: RAN76891; Trapline Area: TR0502T017; Visual Landscape Inventory: Partial Retention; Waterworks lines: 05EL19, 05EL33	The proposed TU lies between two rural residential properties along the southeast side of Horsefly Road near Dewar Lake. The FTU boundary ties into private land, Horsefly Road and Dewar Lake. The area consists of C-3 fuel type comprised of overgrown Douglas-fir with some spruce component. Understory conifer density is high (>1500 sph) with dead branches extending to the ground creating a continuous fuel stratum from surface to crown. Elevated CWD presents a challenge for ground suppression efforts. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include a thin from below harvest (might have to include more area to make economical) to return the stand to historical conditions, as well as understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
						coniferous fuels along Horsefly Road near Dewar Lake and enhance egress safety.
FTU_F8	**2**	17.79	Community Resilience	Extreme (WTA LT_F40)	Recreation Polygons: Prairie Creek; Critical Habitat and Endangered Occurrences: Caribou (Southern Mountain Population); Fish Sensitive Watersheds: Horsefly Lake, Horsefly River; Traplines:TR0502T028; Range Tenure: RAN077083; Guide Outfitter: Stuart Maitland; Visual Landscape Inventory: Partial Retention	The proposed TU surrounds a small number of residences located at Prairie Creek, as well as the Prairie Creek Rec Site. The FTU boundary ties into private land, Horsefly Lake, and old roads while providing a buffer between values and a landscape with hazardous fuels and few impediments to wildfire spread. The area consists of an immature C-5 fuel type comprised primarily of densely stocked 60 year old lodgepole pine with cedar and hemlock in the understory. Understory conifer density is high (>1500 sph) with dead branches extending to the ground creating a continuous fuel stratum from surface to crown. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce hazardous fuels adjacent to remote private properties.
FTU_F24	**2**	19.6	Community Resilience, Egress Safety	Extreme (WTA LT_F63)	Managed Licence: K1L A Schedule B, W0505 A schedule B; Recreation Polygons: Little Lake;	The proposed TU runs along Little Lake Quesnel River Road and is adjacent to a rural property on Little Lake. **The unit partially overlaps the Likely Xats'ull Community Forest.** The area consists of a C-3 fuel type comprised of high-density, multiaged subalpine fir and hybrid spruce

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Ungulate Winter Range Conditional Harvest: u-5-002; Priority Old Growth Deferral Area; Traplines: TR0502T043; Guide Outfitter: Jack Gushue; Visual Landscape Inventory: Modification	stand. Surface fuel loading is high. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce hazardous coniferous fuels adjacent to private residences and enhance egress safety along Little Lake Quesnel River Road.
FTU_F27	**2**	34.16	Critical Infrastructure	Extreme (WTA LT_F11)	Ungulate Winter Range Conditional Harvest: u-5-002; Range Tenure: RAN076891; Traplines: TR0502T017; Visual Landscape Inventory: Partial Retention	The proposed TU surrounds the 150 Mile House Transfer Station and the wood waste yard. The area consists of a dense mixedwood fuel type comprised of a high-density stand containing hybrid spruce mixed with occurrences of aspen and birch. Terrain is undulating with water receiving depressions. Surface fuel loading is high. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include potential overstory thinning of spruce and retention of deciduous trees, understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce hazardous coniferous fuels adjacent to the transfer station that may contain hazardous materials, and the wood waste site with the objective of reducing potential for a fire to spread from or into the waste sites.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
FTU_F15	**2**	33.71	Community Resilience	Extreme (WTA LT_F66)	Likely Xatśūll Community Forest - Managed Licence: K1L A Schedule B; Critical Habitat and Endangered Occurrences: Caribou (Southern Mountain Population); Ungulate Winter Range Conditional Harvest: u-5-002; Traplines: TR0515T020; Guide Outfitter: Jack Gushue; Visual Landscape Inventory: Modification, Partial Retention; Waterworks line: 05DL39	The proposed TU targets hazardous forest encircling residences on Rosette Lake Road in the community of Likely. **The unit overlaps the Likely Xats'ull Community Forest and has been identified by the Community Forest as a priority area for fuel treatment.** The area consists of a C-5 fuel type comprised of multi aged cedar, hemlock, Douglas-fir and subalpine fir, with a high understory conifer density (>1500 sph). Ladder fuels extend to the ground creating a continuous fuel stratum from surface to crown. Closed canopy and elevated CWD present suppression challenges. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce hazardous coniferous fuels adjacent to private properties.
FTU_F2	**2**	39.22	Community Resilience	High (WTA LT_F7)	Managed Licence: W1696 A Schedule B; Ungulate Winter Range Conditional Harvest: u-5-002; Range Tenure: RAN076829; Endangered Occurrence: common cattail Marsh; Traplines: TR0502T017;	The proposed TU lies adjacent to the north, east, and west sides of rural residential properties along Pigeon Road. The area consists of C-3 fuel type comprised of well stocked mature Douglas-fir and a minor component of hybrid spruce. Understory conifer density is high (>1500 sph) with branches extending to the ground and robust coverage of surface fuel creating a continuous fuel stratum from surface to crown. Resulting wildfire threat rating is High.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Visual Landscape Inventory: Partial Retention	Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to rural residences. Presence of similar fuel structure on private land decreases the effectiveness of this treatment. Public outreach to the landholders should be done to encourage works on the private land.
FTU_F9	**2**	29.05	Community Resilience	High (WTA LT_F45)	Recreational Polygons: Horsefly Lake; Ungulate Winter Range Conditional Harvest: u-5-002; Old Growth Management Area Legal: CAR_RCA_3592; Priority Old Growth Deferral Area; Fish Sensitive Watersheds: Horsefly Lake, Horsefly River; Critical Habitat: Woodland Caribou (Southern Mountain population); Range Tenure: RAN077083; Traplines: TR0502T024;	The proposed TU surrounds residences located at Cougar Bay on the north side of Horsefly Lake. The FTU boundary ties into private land, Horsefly Lake, and old roads while providing a buffer between residences and a landscape with hazardous fuels and few impediments to wildfire spread. The area consists of a C-5 fuel type comprised primarily of mature Douglas-fir, spruce, cedar and birch, with cedar and hemlock in the understory. Understory conifer density is high (>1500 sph) with dead branches extending to the ground creating a continuous fuel stratum from surface to crown. Deep duff and large amounts of elevated CWD present suppression challenges. Resulting wildfire threat rating is High. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to residences and enhance suppression efforts.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Guide Outfitter: Stuart Maitland; Visual Landscape Inventory: Partial Retention, Retention	
FTU_F10	**2**	9.75	Community Resilience	High (WTA LT_F46)	Critical Habitat: Woodland Caribou (Southern Mountain population); Traplines: TR0502T024; Guide Outfitter: Wildlife Adventures International Inc. Visual Landscape Inventory: Retention; Waterworks line: 500925	The proposed TU provides surrounds the Plato Island Resort on the south side of Quesnel Lake. The area consists of a mixedwood fuel type primarily comprised of mature birch but with a very thick and developed conifer understory of cedar and hemlock, making overall canopy closure high. Deep duff and large amounts of surface fuel loading and elevated CWD present suppression challenges. Resulting wildfire threat rating is High. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce hazardous coniferous fuels adjacent to the Resort and ease suppression efforts in lack of other impediments to wildfire spread on this landscape.
FTU_F17	**2**	24.79	Community Resilience	High (WTA LT_F70)	UBC Alex Fraser Research Forest Critical Habitat: Woodland Caribou (Southern Mountain population); Recreation Area: Gavin Lake (0.7 ha);	The proposed TU surrounds the Gavin Lake Forestry Camp and is accessed via Gavin Lake Road. **A portion of the unit overlaps the UBC Alex Fraser Research Forest. The research forest is responsible for all forestry activities located within their boundary.** The area consists of a C-5 fuel type primarily comprised of mature Douglas-fir, hybrid spruce, and subalpine fir.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Transmission Lines: 60L300 (0009-18)-> MTP- Mount Polley Mining Corp. Sub; Guide Outfitters: Gavin Nicol; Traplines: TR0502T032; Visual Landscape Inventory: Modification, Partial Retention	Deep duff and large amounts of elevated CWD present suppression challenges. Resulting wildfire threat rating is High. Proposed treatment activities would include thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the camp and ease suppression efforts.
FTU_F7	**2**	7.45	Community Resilience	Moderate (WTA LT_F37)	Recreation Polygons: Starlike Lake; Old Growth Management Area Legal: CAR_RCA_4276; Priority Old Growth Deferral Area; Critical Habitat: Woodland Caribou (Southern Mountain population); Fish Sensitive Watershed: Deerhorn Creek, Horsefly River; Range Tenure: RAN076386, RAN077078, RAN077083; Guide Outfitter: Stuart Maitland; Traplines: TR0502T024;	The proposed TU surrounds the north and west sides of the residential community on Starlike Lake, and overlaps Starlike Lake Recreation Reserve. The area consists of a mixedwood fuel type (75% conifer) primarily comprised of Douglas-fir and hybrid spruce clumps. Understory conifer density is moderate with dead branches extending to the ground creating a continuous fuel stratum from surface to crown in hazardous clumps. Resulting wildfire threat rating is moderate. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would create a buffer between hazardous landscape level fuels and the residents on Starlike Lake.

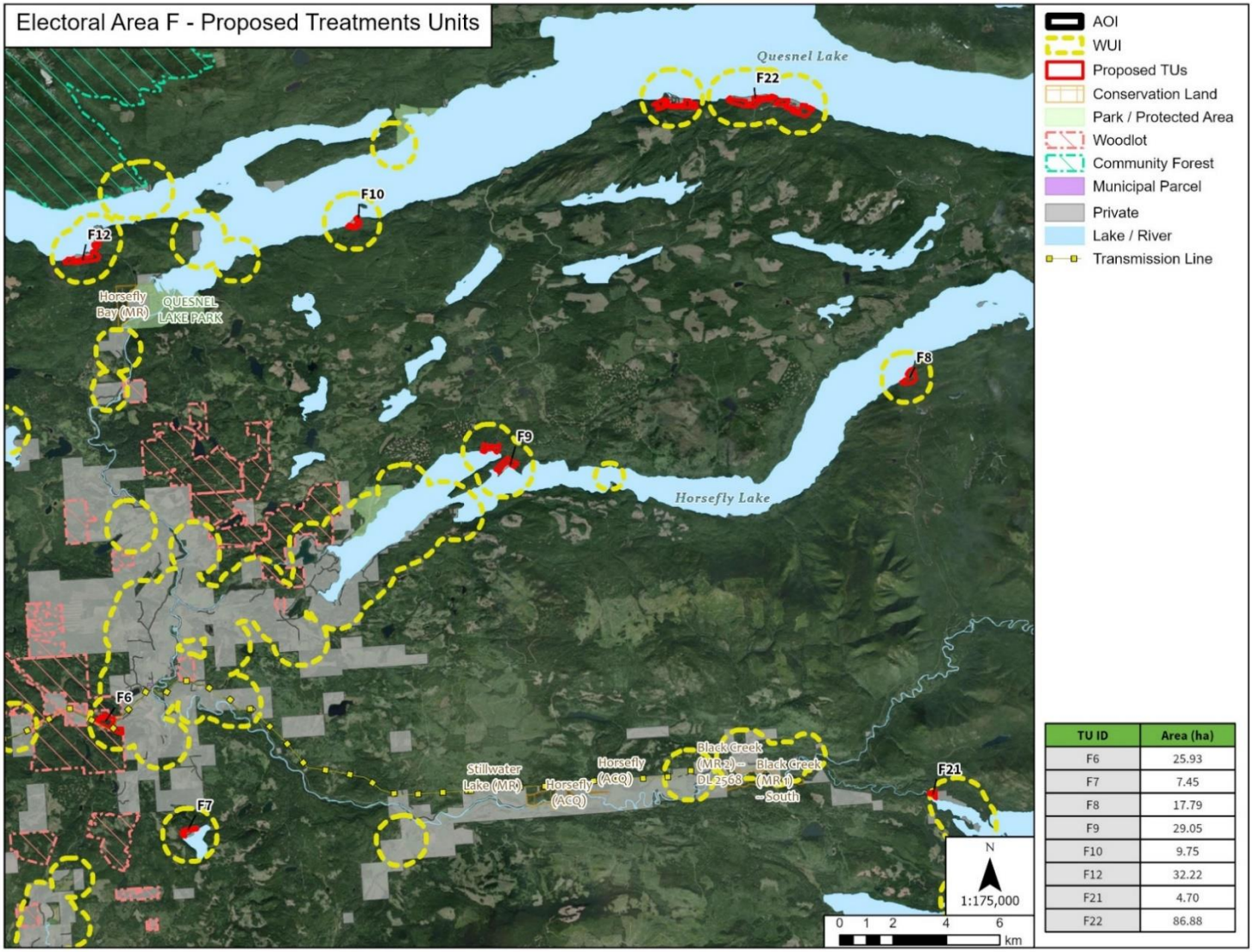
FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Visual Landscape Inventory: Partial Retention	
FTU_F19	**2**	63.41	Community Resilience, Landscape Fuel Break	High (WTA LT_F27)	Managed Licence: W1579 B Schedule B; Priority Old Growth Deferral Area; Range Tenure: RAN077086; Traplines: TR0502T021; Visual Landscape Inventory: Partial Retention	The proposed TU targets a hazardous patch of forest that is near the Dewar Lake community. The unit runs along Horsefly Road (with powerline) and **overlaps a small portion of Woodlot License W1579**. It is less than 300 m from the Miocene Volunteer Fire Hall and other rural residences located along Horsefly Road. The area consists of C-3 fuel type comprised of overstocked multi-aged Douglas-fir, hybrid spruce and lodgepole pine. Understory conifer density is high with branches extending to the ground, creating a continuous fuel stratum from ground to crown. Resulting wildfire threat rating is High. Proposed treatment activities would include a thin from below harvest, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce hazardous coniferous fuels in close proximity to the Dewar Lake community, the Miocene Fire Hall, and enhance suppression opportunities.
FTU_F20	**3**	44.74	Landscape Fuel Break	Extreme (WTA LT_F28)	Managed Licence: W0545 B Schedule B; Ungulate Winter Range Conditional Harvest: u-5-002; Priority Old Growth Deferral Area;	The proposed TU targets a hazardous patch of forest that is adjacent to a residential property near Horsefly Road (with powerline) and Bunting Lake Road. **The unit fully overlaps Woodlot license W0545 and has been identified by Woodlots BC as a priority area for fuel treatment.**

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Range Tenure: RAN077080; Traplines: TR0502T021; Visual Quality Objective: Partial Retention	The area consists of C-3 fuel type primarily comprised of overstocked multi-aged Douglas-fir. Understory conifer density is high with branches extending to the ground, creating a continuous fuel stratum from ground to crown. Lodgepole pine mortality from mountain pine beetle has fallen out of the stand and now exists as elevated woody debris, making wildfire suppression efforts more challenging. Juniper in the understory increases the hazard rating of this stand. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include a thin from below harvest, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce hazardous coniferous fuels adjacent to rural properties and along Horsefly Road, and increase overall landscape resiliency.
FTU_F1	**3**	35.8	Community Resilience, Egress Safety	Extreme (WTA LT_F2)	Old Growth Management Area Legal: CAR_RCA_5595; Range Tenure: RAN074960; Traplines: TR0502T017; Guide Outfitter: Wildlife Adventures International Inc.	The proposed runs adjacent to Knife Creek Road and borders rural residential properties to the north and east. The area consists of C-3 fuel type comprised of overstocked multi-aged Douglas-fir. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include a thin from below harvest, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to a few rural

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
						residences and enhance egress safety along Knife Creek Road.
FTU_F23	**3**	3.09	Community Resilience	Extreme (WTA LT_F59)	Managed Licence: W1452 D Schedule B; Critical Habitat: Woodland Caribou (Southern Mountain population); Guide outfitter: Jack Gushue; Traplines: TR0502T043; Visual Landscape Inventory: Partial Retention (0.5 ha)	The proposed TU runs adjacent along the north side of a rural residential property along Morehead Bootjack FSR. **The unit falls entirely within Woodlot License W1452.** The area consists of C-2 fuel type with few mature trees (<900 sph) but the understory consists of densely stocked subalpine and spruce, with branches extending to the ground. Surface fuel coverage is high, with ample potential for extreme fire intensity in this stand. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include thinning or patch cutting, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the rural residence.
FTU_F6	**3**	25.93	Community Resilience, Critical Infrastructure	Moderate (WTA LT_F35)	Managed Licence: W1648 A Schedule B (5.9 ha); Fish Sensitive Watersheds: Horsefly River (2 ha); Critical Habitat: Woodland Caribou (Southern Mountain population); Range Tenure: RAN076888;	The proposed TU runs adjacent to rural residential properties and encircles the Horsefly Cemetery and the Horsefly Transfer Station along Horsefly Road. The area consists of a mix of C-3 and M-1/2 fuel types. The stand is primarily comprised of Douglas-fir, lodgepole pine and hybrid spruce, with a component of birch. Understory conifer density is moderate (500-800 sph) with dead branches extending to the ground

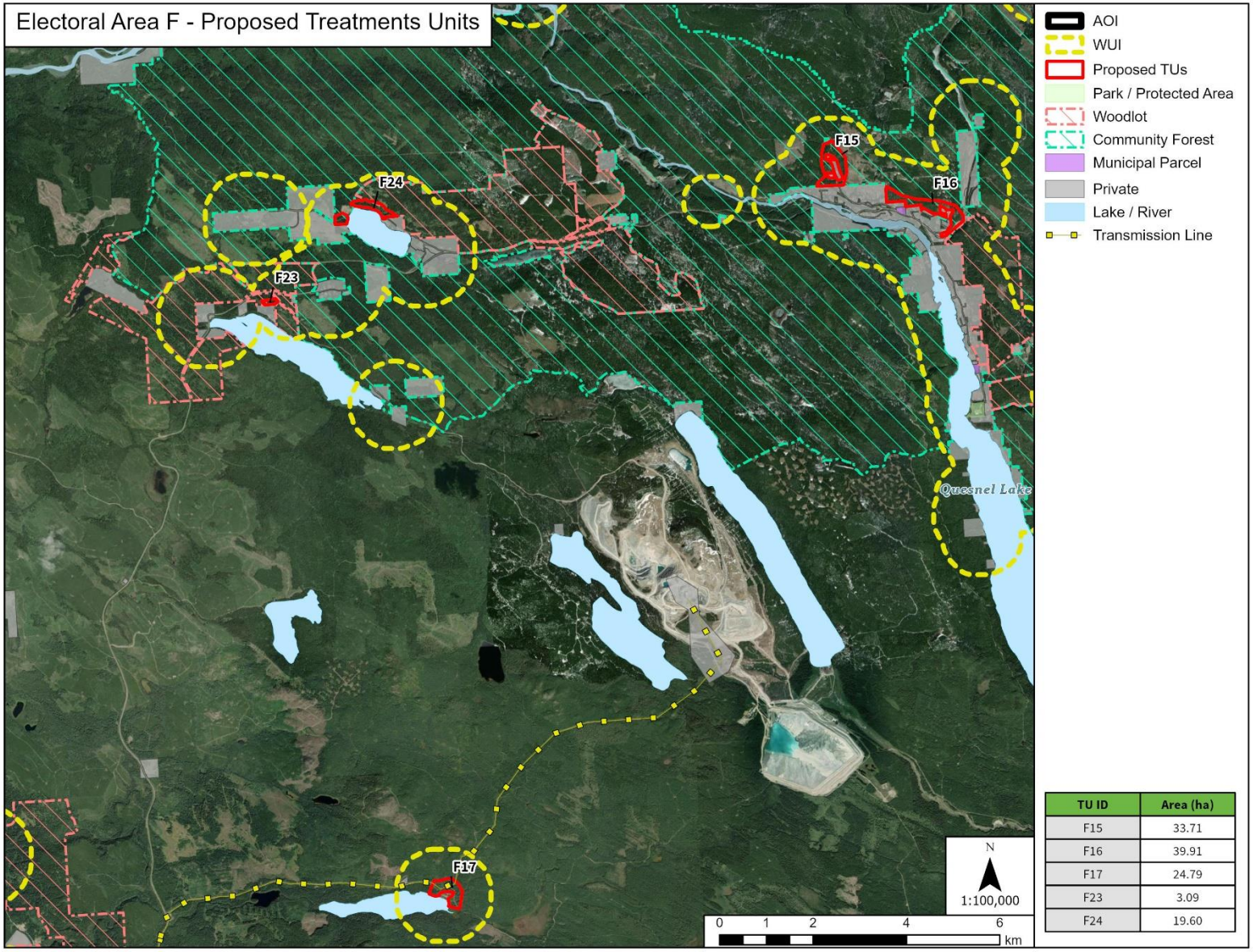
FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Traplines: TR0502T020; Visual Quality Objective: Partial Retention; Guide Outfitter: Gavin Nicol, Wildlife Adventures International Inc.	creating a continuous fuel stratum from surface to crown. Resulting wildfire threat rating is Moderate. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would help widen the buffer created by the Horsefly Road to put space between more hazardous landscape level fuels and the broader community of Horsefly.
FTU_F21	**3**	4.7	Public Education	Extreme (WTA LT_F39)	Recreation Polygons: Mckinley Lake; Ungulate Winter Range Conditional Harvest: u-5-002; Old Growth Management Area Legal: CAR_RCA_4089; Fish Sensitive Watershed: Horsefly River, McKinley Creek; Critical Habitat: Woodland Caribou (Southern Mountain population); Range Tenure: RAN077078, RAN077083; Guide Outfitter: Stuart Maitland; Traplines: TR0502T019;	The proposed TU provides surrounds the McKinley Lake Rec Site. The FTU boundary ties into private land, McKinley Lake, and riparian areas. The area consists of a C-5 fuel type comprised of mature Douglas-fir, subalpine fir and a small deciduous component. Understory conifer density is high (>1500 sph) with a low fuel strata gap. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include understory thinning, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to the rec site and reduce the probability of fire spread from the rec site into the broader landscape of uninterrupted fuels.

FTU ID	Priority Ranking Classification	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat Rating & WTA	Overlapping Values / Treatment Constraints	Treatment Rationale
					Visual Landscape Inventory: Partial Retention	
FTU_F26	**3**	65.41	Landscape Fuel Break, Egress Safety	Extreme (WTA LT_F72)	Ungulate Winter Range Conditional Harvest: u-5-002; Old Growth Management Area Legal: CAR_RCA_4645; Priority Old Growth Deferral Area; Range Tenure: RAN076891, RAN077363; Visual Landscape Inventory: Modification	The proposed TU run adjacent to Mountain House Road, and borders a rural residential property along the southeast side. The FTU boundary ties into private land, Likely Road, Mountain House Road and the fire perimeter from a 2017 wildfire. The area consists of C-3 fuel type comprised of overstocked multi-aged Douglas-fir. Resulting wildfire threat rating is Extreme. Proposed treatment activities would include a selective thin from below harvest, increase Crown Base Height (CBH) and fuel strata gap, and surface fuel reduction. Treatment would reduce coniferous fuels adjacent to Mountain House Road, a rural residence, and create a landscape fuel break for enhance suppression opportunities.

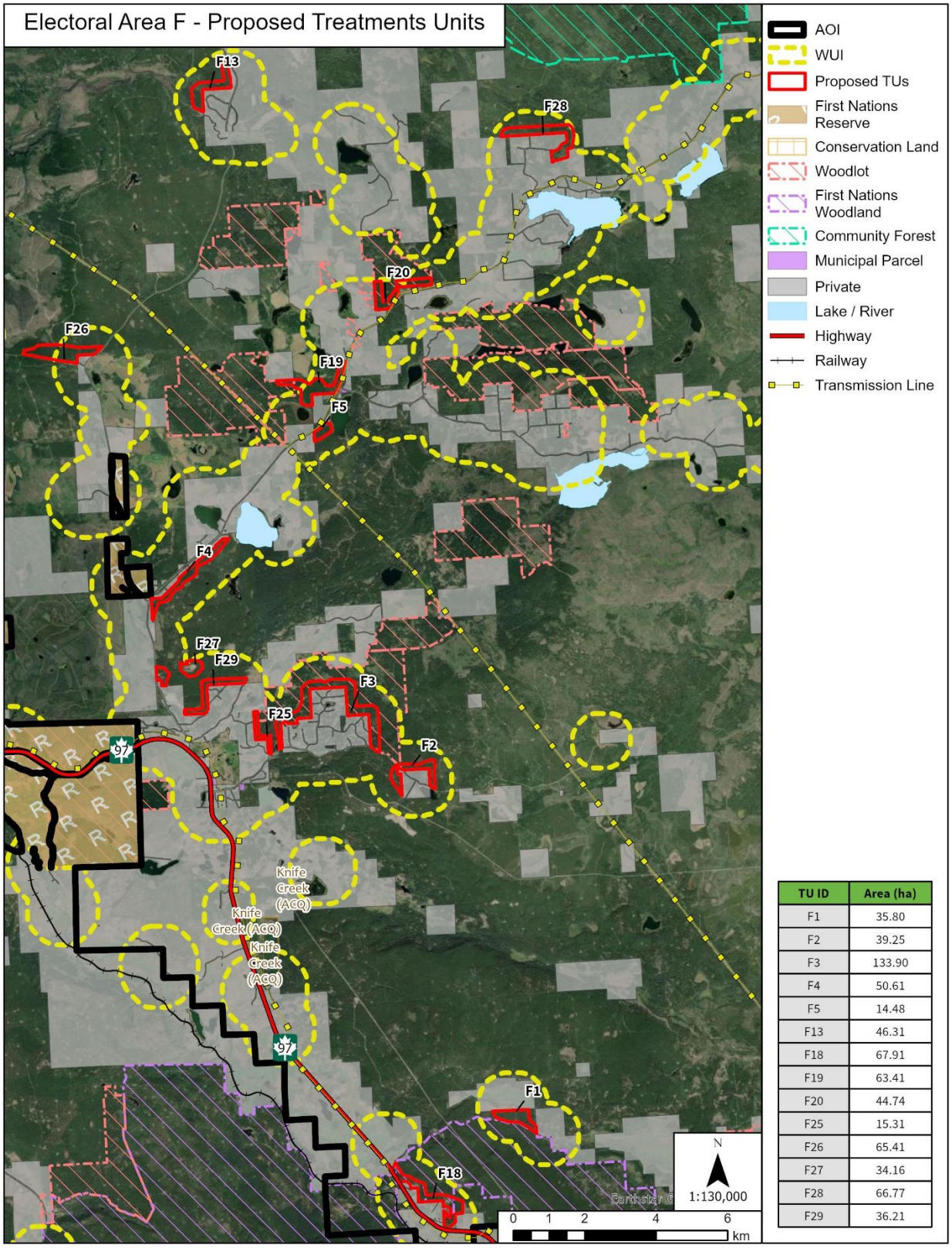


TU ID	Area (ha)
F6	25.93
F7	7.45
F8	17.79
F9	29.05
F10	9.75
F12	32.22
F21	4.70
F22	86.88

Figure 22: Locations of proposed Fuel Treatment Units throughout Electoral Area F (three figures)



TU ID	Area (ha)
F15	33.71
F16	39.91
F17	24.79
F23	3.09
F24	19.60



TU ID	Area (ha)
F1	35.80
F2	39.25
F3	133.90
F4	50.61
F5	14.48
F13	46.31
F18	67.91
F19	63.41
F20	44.74
F25	15.31
F26	65.41
F27	34.16
F28	66.77
F29	36.21

Actions: The following are recommended action items regarding FireSmart Vegetation Management and fuel treatments:

Action Number	Action/Recommendation	Priority Level
Action #35	Encourage residents to remove/reduce flammable vegetation in the Immediate, Intermediate, and Extended zones on their properties. Promote the use of the *FireSmart BC Landscaping Guide* to inform vegetation management best practices and replace flammable vegetation with more fire-resistant landscaping.	Very high
Action #36	Apply for funding to develop fuel management prescriptions for forested areas identified on provincial crown land within the eligible WUIs. It is recommended to start with Priority 1 proposed fuel treatment areas as identified within this CWRP.	High
Action #37	Apply for funding to undertake fuel management treatment operations on provincial crown land within the eligible WUIs based on completed fuel management prescription units.	High
Action #38	Develop a roster of local contractors, crews, or individuals qualified to complete vegetation management on private properties. This includes tree removal, pruning, etc. Make the roster available to residents on the CRD website or by other means suitable for the community.	High

6.0 Implementation

6.1 FireSmart Roadmap

No two FireSmart journeys are the same, however FireSmart has created a roadmap to help local governments understand where to start and general steps to take on the way to community wildfire resiliency[36]. The roadmap is broken into four different phases, and should be completed sequentially, but will depend on previous FireSmart activities and the recommended action items in this CWRP.

FireSmart Roadmap Phases

Engagement Phase

In this phase, the primary objective is awareness. The focus is on building an understanding of the risk of wildfire and the benefits of developing and growing a local FireSmart program.

Activities that could be completed in this phase are suggested below, but not limited to:

- **FireSmart Positions:** Hiring and training; local FireSmart program development.
- **Education:** Create a Public Education/Communications Plan. Develop/update signage, social media, community websites and/or newsletters; organize and host public information meetings and workshops; promote and distribute FireSmart educational materials and resources; host a Wildfire Community Preparedness Day.
- **Interagency Cooperation:** Participate in a Community Wildfire Resiliency Collaborative or Community Wildfire Roundtable; attend the annual Wildfire Resiliency and Training Summit.
- **Residential Areas:** Offer and undertake FireSmart Home ignition Zone assessments; offer off-site debris removal programs.

Initiative Phase

In this phase, the primary objective is acting and implementing local FireSmart activities. The focus is on building capacity both in local government personnel and residents, and the community's overall capacity to prepare and respond to wildfire events.

Activities that could be completed in this phase are suggested below, but not limited to:

- **Education:** Support neighbourhoods to apply for FireSmart Canada Neighbourhood Recognition Program.
- **Community Planning:** Complete FireSmart assessments for critical infrastructure, community assets, culturally significant sites and/or green spaces.
- **Emergency Planning:** Assess community water delivery ability; FireSmart structure Protection Trailer development and plan.

[36] FireSmart. (2023). The FireSmart Roadmap. Referenced from: https://firesmartbc.ca/resource/the-firesmart-roadmap/

- **Training:** Undertake training for other FireSmart positions (beyond initial FireSmart coordinator), fire departments, and emergency management staff; develop local Home Partners program.
- **FireSmart Projects:** Complete mitigation activities for critical infrastructure, community assets culturally significant sites and/or green spaces with completed assets.
- **Residential areas:** Offer local rebate programs.

Expansion Phase

In this phase, the primary objective is FireSmart activities within the Eligible WUI. The focus is on broader community planning.

Activities that could be completed in this phase are suggested below, but not limited to:

- **Education:** Support the organization of a Farm and Rach Wildfire Preparedness workshop.
- **Community Planning:** Develop FireSmart policies and practices for the design and maintenance of publicly owned land and infrastructure.
- **Fuels Management:** Develop prescriptions and/or burn plans and undertake fuel reduction treatments, including cultural and prescribed fire.

Integration Phase

In this phase, the primary objective is long-term and permanent changes to support community wildfire resiliency. The focus is on development considerations and collaboration with other partners.

Activities that could be completed in this phase are suggested below, but not limited to:

- **Education:** Support the FireSmart BC Library program at local/regional libraries.
- **Development Considerations:** Amend Official Community Plans, Comprehensive Community Plans and/or land use, engineering, and public works bylaws to incorporate FireSmart principles; revise landscaping requirements in zoning and development permit documents; establish Development Permit Areas for Wildfire Hazard; amend referral processes for new developments to ensure multiple departments, including the fire department and/or emergency management personnel, are included.
- **Interagency Cooperation:** Support the FireSmart BC Plant Program at local garden centres or nurseries; partnerships with local landscapers, developers, real-estate agents, insurance, etc.

6.2 Plan Monitoring, Tracking and Reporting

The CWRP action plan (Table 1: Cariboo Regional District Electoral Area F CWRP Risk Assessment and Action Plan Summary) should be reviewed annually to capture any significant changes that could affect implementation or priority levels, as well as to track which actions have been completed or are in progress. Completed actions should be summarized, including information on specific measurable outcomes that demonstrate reduced wildfire risk in Electoral Area F of the CRD. In addition, a five-year comprehensive review/update should take place in 2030 including specific updates on:

- How wildfire risk has changed based on recent wildfires;
- Which vegetation management activities have been completed; and
- Any significant changes to the built environment due to growth and development, economic changes, or other factors.

Table 18 provides an example monitoring plan, tracking, and update summary for the CRD Electoral Area F CWRP. Annual updates should consider renaming the plan version as 1.1, 1.2, 1.3, etc. Five-year comprehensive updates should consider renaming the plan version as 2.0, 3.0, etc. Columns for actions in progress or completed actions may refer to the action numbers listed in Table 18. Annual tracking is useful for creating accountability, as well as reporting accomplishments and successes. Summaries of specific measurable outcomes are useful for reporting to decision makers and applying for future funding.

Table 18. CRD Electoral Area F CWRP monitoring, tracking and update summary

Plan Version	Update Year	Update Type	Actions in Progress	Completed Actions	Notes
1.0	**2025**	**CWRP**	**Eg. Action # 2, 7, 15, etc.**		
2.0	**2030**	**CWRP Update**			
3.0	**2035**				

7.0 Appendices

7.1 Appendix A: Glossary of Terms

Area of Interest: The AOI for a CWRP includes the area that lies within the municipal boundary, regional district boundary, or First Nations land, including First Nation reserve land, land owned by a Treaty First Nation (as defined by the Interpretation Act) within treaty settlement lands, or land under the authority of an Indigenous National Government boundary. The AOI should reflect how the community is organized and how it approaches other similar planning projects within its jurisdictional boundaries. When communities are located close together and are geographically aligned, a "regional" approach may be most effective.

Critical Infrastructure (CI): are assets owned by the Provincial government, local government, public institution (such as health authority or school district), First Nation or Treaty First Nation that are essential to the health, safety, security or economic wellbeing of the community and the effective functioning of government, or assets identified in a Local Authority Emergency Plan Hazard, Risk & Vulnerability, and Critical Infrastructure assessment.

FireSmart Landscaping: is the removal, reduction, or conversion of flammable plants (such as landscaping for residential properties, parks, open spaces, and critical infrastructure) in order to create more fire-resistant areas in FireSmart Non-combustible Zone and Priority Zones 1 and 2 (refer to the FireSmart Guide to Landscaping).

Fuel Management Treatment: Fuel management treatment is the manipulation or reduction of living or dead forest and grassland fuels to reduce the rate of spread and fire intensity, and enhance the likelihood of successful suppression, generally outside of FireSmart Non-combustible Zone and Priority Zones.

Values at Risk (VAR): are the human or natural resources that may be impacted by wildfire. This includes human life, property, critical infrastructure, high environmental and cultural values, and resource values.

Wildfire Risk:

Likelihood of a fire occurring
Associated fire behaviour
Impacts of the fire (consequence)

Wildfire Threat: The ability of a wildfire to ignite, spread, and consume organic material (trees, shrubs, and other organic materials) in the forest. The major components used to define wildfire threat are fuel, weather, and topography.

Wildland Urban Interface (WUI): The WUI is defined in the FireSmart manual as any area where combustible forest fuel is found adjacent to homes, farm structures, or other outbuildings. This may occur at the interface, where development and forest fuel (vegetation) meet at a well-defined boundary, or in the intermix, where development and forest fuel intermingle with no clearly defined boundary.

7.2 Appendix B: Engagement Summary

Engagement activities with partners, indigenous governments, and the public were completed throughout the lifecycle of this project and the development of six Community Wildfire Resiliency Plans for CRD Electoral Areas D, E, F, G, H, and L. Engagement activities included in-person meetings, open houses, surveys, and presentations. Please see accompanying Annex B, which includes a Partner and Public Engagement Summary, and an Indigenous Government Engagement Summary.

7.3 Appendix C: Home Ignition Zone

FireSmart describes three Priority Zones around a building, collectively named the Home Ignition Zone (Figure 23) alongside descriptions of what these zones should look like, starting from the edge of a building and moving outwards.

- Immediate Zone (0 – 1.5 m) Non-combustible surface should extend around the entire home and any attachments, such as decks.
- Intermediate Zone (1.5 – 10 m) This should be a fire-resistant area, free of all materials that could easily ignite from a wildland fire.
- Extended Zone (10 – 30 m) Thinned and pruned coniferous trees, alongside routine dead surface fuel cleanup.

HOME IGNITION ZONE

THERE ARE MANY FACTORS THAT MAY IMPACT YOUR PROPERTY'S RISK TO WILDFIRE

Check out the *FireSmart Begins at Home Guide* for an in-depth look at how you can build wildfire resiliency.

IMMEDIATE ZONE
0m to 1.5m

The Immediate Zone is a non-combustible area that starts at the house and extends to a 1.5 metre perimeter around the home and attached structures, including decks. Reduce the chance of wind-blown embers igniting your home by starting with these proactive steps:

- Choose non-combustible building materials when constructing or renovating your home.
- Clear vegetation and combustible material down to mineral soil and cover with non-combustible materials like gravel, brick, or concrete.
- Avoid planting woody shrubs or trees. If any are present, prune and maintain them regularly.

INTERMEDIATE ZONE
1.5m to 10m

Elements in the Intermediate Zone are managed so they don't transmit fire to your home. Here are a few actions you can take to reduce your home's vulnerability:

- Plant fire-resistant vegetation and select non-combustible landscaping materials.
- Avoid incorporating any woody debris, including mulch.
- Keep combustible items like firewood piles, construction materials, patio furniture, tools, and decorative pieces out of this zone.
- Move trailers, recreational vehicles, storage sheds, and other combustible structures into the Extended Zone. If that is not possible, store firewood inside your mitigated garage, shed, or other ember-resistant structures.
- Create a non-combustible ground cover, like a gravel pad, underneath and 1.5 metres around trailers, recreational vehicles, and sheds.

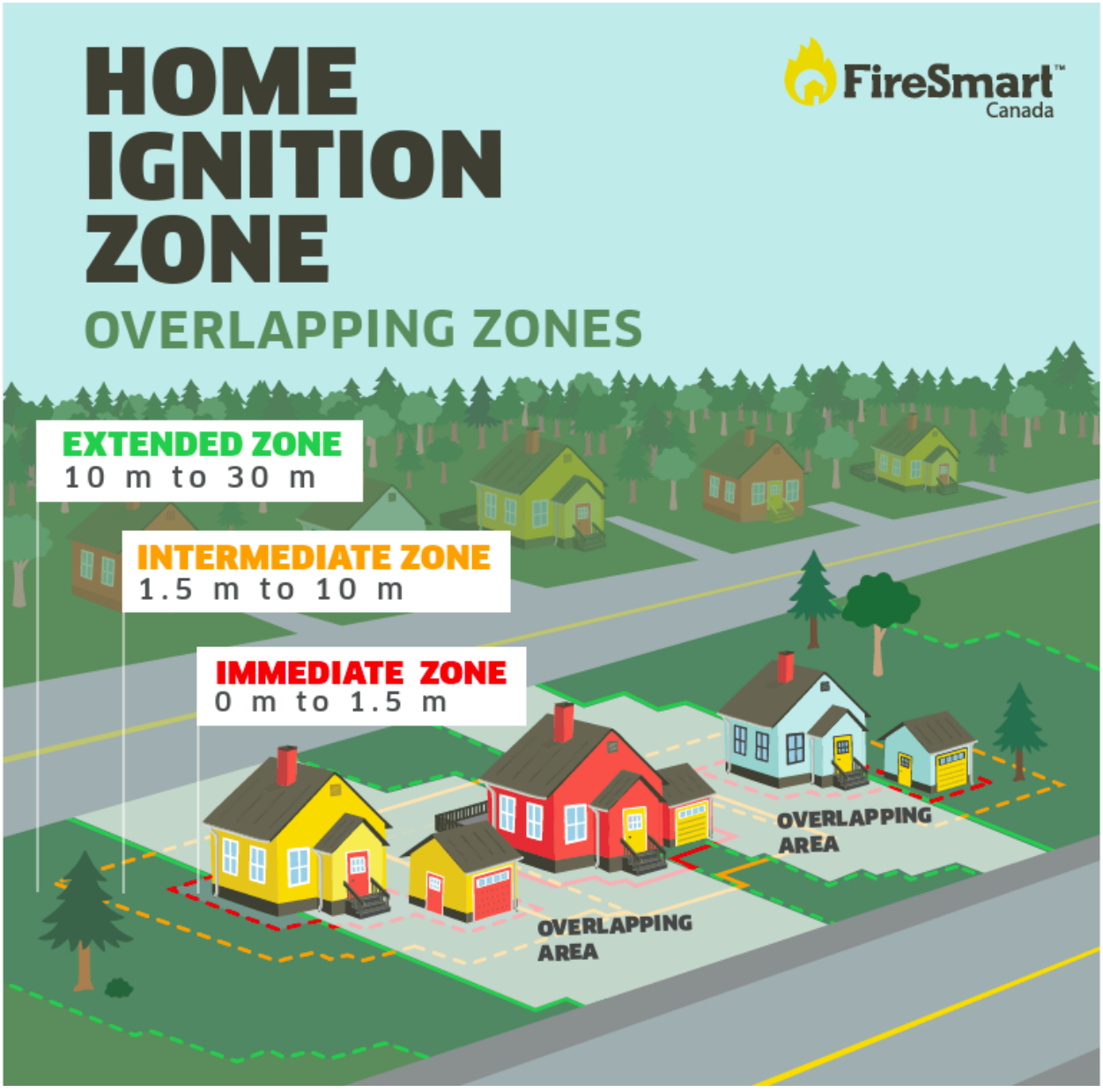
EXTENDED ZONE
10m to 30m

The goal in the Extended Zone is not to eliminate fire, but to reduce its intensity. If your property extends into this zone, a few important steps you can take include:

- Selectively remove evergreen trees to create at least 3 metres of horizontal space between the single or grouped tree crowns.
- Remove all branches to a height of 2 metres from the ground.
- Regularly clean up accumulations of fallen branches, dry grass, and needles to eliminate potential surface fuels.
- Continue to apply these principles if your property extends beyond 30m. Work with your neighbours in overlapping zones and seek guidance of a forest professional if affected by other conditions, like steep slopes.

Figure 23. FireSmart Home Ignition Zone, which is comprised of three priority zones, as illustrated in the BC FireSmart Begins at Home Manual (https://firesmartbc.ca/wp-content/uploads/2019/08/Home-Ignition-Zone-Poster-BC.pdf)

Of particular importance are neighbourhoods where homes and buildings are situated close together in a relatively higher density than more rural areas. This means that FireSmart Priority Zones frequently overlap with one another (i.e., Immediate Zone or Intermediate Zone from one building may encroach into an adjacent building's Zone Immediate or Intermediate). This highlights the importance of community resilience towards wildfire though working together to reduce wildfire hazard, especially within the WUI.



Source: https://firesmartcanada.ca/wp-content/uploads/2024/02/Home-Ignition-Zone-Overlapping-Zones-WEB.pdf

7.4 Appendix D: Wildfire Threat Assessments

See accompanying Annex D: CRD CWRP Wildfire Threat Assessment EA F spreadsheet and associated photos.

7.5 Appendix E: Maps

See accompanying Annex E: CRD CWRP AOI/VAR, Fire Risk, and Fuel Treatment Unit Maps for Electoral Area F.

7.6 Appendix G: Key Provincial and Federal Acts and Regulations, and Additional Resources for FireSmart Disciplines

Education

- FireSmart BC website
- BC Wildfire Prevention website
- First Nations' Emergency Services Society
- Programs FireSmart Canada
- Wildfire Preparedness Guide
- First Nations Forestry Council
- BC Wildfire Service
- BC Government - Wildfire
- Emergency Management in BC
- Destination BC - Emergency Preparedness
- Educational Messages Desk Reference (the National Fire Protection Association)
- BC Hydro - be prepared for emergencies

Provincial Acts and Regulations

- Emergency Management and Disaster Act (2024)
- BC Local Government Act (2015)
- BC Open Burning and Smoke Control Regulations (2023)
- BC Wildfire Act and Regulations (2005)
- Forest and Range Practices Act (2021)

Federal Acts

- Forestry Act (1985)
- Migratory Birds Convention Act (1994)
- Canadian Environmental Protection Act (1999)
- Species At Risk Act (2002)
- Fisheries Act (2019)

Development Considerations

- Information on Development Permit Areas is available at FireSmart BC - Development Considerations
- Additional guidance on land use planning tools and strategies for the Wildland-Urban Interface include the American Planning Association's PAS Report 594 Planning the Wildland-Urban Interface (2019), which available at no charge through the association's website.
- The National Research Council (NRC) Wildland-Urban Interface Technical Committee has also published National Guide for Wildland-Urban Interface (WUI) Fires (2021); this guide provides guidance to Canadian local governments and First Nations on WUI land use planning and regulation implementation.

Interagency Cooperation

- FireSmart BC
- Indigenous Services Canada
    - Emergency Management Assistance Program (EMAP), which supports communities in accessing emergency assistance services. Will provide funding for communities to build resiliency and prepare and respond to natural hazards.
- First Nation Health Authority
    - Emergency Management Branch – ensures FN communities are effectively incorporated into emergency preparedness, prevention, response and recovery initiatives.
- First Nation Emergency Services Society
    - Emergency Management department provides community-based emergency management guidance, support, and assistance to BC First Nation communities.
    - Fire Services Department assists communities to increase level of fire protection.
    - Forest Fuel Management Department liaises with governments and other agencies to assist with wildfire prevention activities.
- Emergency Management BC
    - BC Wildfire Service and Emergency Management BC (EMBC), along with several other Ministries and agencies, are working in close collaboration to provide First Nation training, equipment, and capacity support

Cross-Training

- UNBC - Wildland Firefighting Training Certificate
- OH&S (06) - Fire Safety Planning & Systems
- FireSmart training courses
- Recognized British Columbia S-100 instructors

Emergency Planning

The following resources are available for reference and to assist with emergency planning:

- National guide for wildland-urban-interface fires - which provides guidance to Canadian local governments and First Nations on WUI land use planning and regulation implementation, as well as guidance on wildfire response preparedness planning.
- FireSmart BC Emergency Planning

- Emergency management in B.C. – which contains several valuable resources including fire services, education and toolkits, and preparedness and recovery information.

Vegetation Management

- The BCWS Fire and Fuel Management web page offers a number of tools that support fuel management planning and implementation and can be accessed here.

Contact your local BC Wildfire Service Fire Centre office to learn more about, engage and collaborate on Landscape Zone vegetation management planning.

- FireSmart Guide to Landscaping
- Funding resources for fuel management treatments can vary from year to year as funding pots change over time. Current available funding opportunities can be initiated through conversation with First Nation Emergency Services Society (FNESS) prior to completion of treatments.