

2024 qathet Regional District Community Wildfire Resiliency Plan



qathet
REGIONAL DISTRICT



Tla'amin Nation
ᑕaʔəmen Nation



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BRITISH COLUMBIA
FireSmart

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Document Navigation

This Community Wildfire Resiliency Plan consists of a comprehensive analysis of wildfire risk and recommendations to reduce wildfire risk for the qathet Regional District, City of Powell River, and Tla'amin Nation. This document is designed for a wide variety of audiences, including elected officials, government and Nation staff, and the general public.

The Executive Summary and Action Plan & Implementation section provide a simple summary of this CWRP, key factors driving wildfire risk, and recommended actions to build wildfire resiliency.

Sections 1-5 are an overview of the Region and all-encompassing jurisdictions. Section 6 introduces the seven FireSmart disciplines, key concepts of FireSmart, and the key foundations of FireSmart for building resiliency to wildfire for each Jurisdiction. Sections 7-12 include FireSmart status and recommendations for each jurisdiction, aligned with the seven disciplines of FireSmart. For a detail version of maps found in this document please see [the qRD webmap for details](#).

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Frequently Used Acronyms

AOI	Area of Interest
BCWS	British Columbia Wildfire Service
BEC	Biogeoclimatic Ecosystem Classification
CFFDRS	Canadian Forest Fire Danger Rating System
CFRC	Community FireSmart and Resiliency Committee
CFS	Community Funding and Support
CI	Critical infrastructure
CRI	Community Resiliency Investment
CWRP	Community Wildfire Resiliency Plan
DP	Development Permit
DPA	Development Permit Area
EMCR	The Ministry of Emergency Management and Climate Readiness
FBP	Fire Behaviour Prediction System
FESBC	Forest Enhancement Society of British Columbia
FMP	Fire Management Plan
FSCCRP	FireSmart Canada Community Recognition Program
FNESS	First Nations Emergency Services Society
GBVFD	Gillies Bay Volunteer Fire Department
HIZ	Home Ignition Zone (also see Structure Ignition Zone)
LIVFD	Lasqueti Island Volunteer Fire Department
MVFD	Malaspina Volunteer Fire Department
MOF	Ministry of Forests
MOTT	Ministry of Transportation and Transit
NVFD	Northside Volunteer Fire Department
OBSCR	Open Burning Smoke Control Regulation (Provincial)
OCP	Official Community Plan
OFC	Office of the Fire Commissioner
PRFR	Powell River Fire Rescue
PSTA	Provincial Strategic Threat Assessment
qRD	qathet Regional District
SIVFD	Savary Island Volunteer Fire Department
Tišosəm	(T'ishoshum) The modern community of Tla'amin Nation
UBCM	Union of British Columbia Municipalities
VAR	Values at Risk
VAVFD	Van Anda Volunteer Fire Department
WRR	Wildfire Risk Reduction
WTA	Wildfire Threat Assessment
WUI	Wildland Urban Interface

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Executive Summary

Wildfire is becoming increasingly prevalent across the BC landscape, with climate change impacting moisture regimes, temperatures, and weather patterns. Wildfire threat and its associated risk to communities within the Wildland Urban Interface (WUI) is likely to increase due to climatic changes, making it more critical than ever to understand wildfire risk and identify the most effective strategies for mitigation. The qathet Regional District (qRD), Tla'amin Nation, and City of Powell River (collectively referred to as "the Region" in this CWRP) have commissioned this Community Wildfire Resiliency Plan (hereinafter referred to as 'CWRP' or 'Plan') to identify current and future wildfire risks and identify measures to build community resiliency to wildfire and reduce its future impacts.

The presence of wildland urban interface fires throughout British Columbia offers learning opportunities in mitigation, prevention, preparedness, response, and recovery. The qRD can learn from these events, share the knowledge, and improve resilience to WUI fires in the region through FireSmart initiatives.

This CWRP identifies wildfire risk in and around the Region, assesses vulnerability to wildfire, and quantifies potential impacts. This CWRP's core objective is to outline strategies to reduce wildfire probabilities, enhance wildfire response, and minimize potential impacts. The CWRP serves as a guide for local government and First Nation staff, and a resource to engage and empower residents to adopt FireSmart practices.

The framework of this CWRP consists of a wildfire risk assessment, followed by detailed discussion of the FireSmart program's seven disciplines for strategy development:

- **Education:** Informing and engaging the community about wildfire risks and mitigation measures.
- **Legislation and Planning:** Enacting policies and plans to integrate wildfire risk reduction into community regulations and bylaws.
- **Development Considerations:** Building resilient land use and construction practices.
- **Interagency Cooperation:** Fostering collaboration among various agencies for comprehensive wildfire management.
- **Cross-training:** Enhancing wildfire response capabilities through shared training and knowledge exchange among emergency responders.
- **Emergency Planning:** Preparing robust and actionable emergency response plans.
- **Vegetation Management:** Reducing wildfire fuel through strategic vegetation control.

The risk assessments outlined in Table 1 summarizes key factors driving wildfire risk for the Region. These risks consider the unique landscape, vegetation, fire history, and climatic conditions to identify specific wildfire threats. These risks are integrated into actionable steps summarized in Table 2, categorized by the seven FireSmart Disciplines. The plan prioritizes recommended actions across the FireSmart disciplines, categorizing them by their potential impact on reducing wildfire hazards as 'Moderate', 'High', or 'Very High'.

The CWRP is a strategic blueprint designed to mitigate wildfire threats through informed action and community engagement. By implementing the recommended FireSmart disciplines and actions, qRD, the City of Powell River, and Tla'amin Nation aim to enhance their resilience against the increasing risk of wildfires, protecting the key values within the Region.

Overarching all of the recommended considerations in the Action Plan are three significant evolutions in the governance and delivery of FireSmart and community wildfire preparedness and coordination in our Region; which includes:

1. Tla'amin Nation will go forward with intent to directly manage its own FireSmart programming for Tla'amin Lands. This evolution respects Tla'amin Nation's priorities and rightful position as a self-governing Nation in managing its lands.
2. The FireSmart BC and FireSmart Canada programs continue to evolve with increasing opportunities. The qathet region, with its generally moderate risk, is eligible for provincial funding pending successful management of grant funding applications. The funding limits for qRD is understandably different from the identified higher risk communities that may receive grant funding through the more generous and flexible allocation basis however all of the broad spectrum of potential initiatives identified within the FireSmart disciplines are available to the qRD. The qRD should carefully consider its relative risk and FireSmart priorities in relation to the administrative workload and capacity as a small local government in order to determine and clarify the level of FireSmart service that it will provide.
3. The Province of BC Order of the Lieutenant Governor in Council 435, on July 6, 2024, confirmed the Ministry of Forests is responsible for the BC Wildfire Act and for overseeing the implementation of plans pertaining to wildfire and interface fires. The Ministry of Forests has now created its Wildfire Risk Reduction department within the local forest district and continues to lead wildfire suppression through the BC Wildfire Service. This CWRP recognizes the role of Provincial, Local Government, and Nation government in their respective jurisdictional roles and responsibilities and the desire to work together to collaborate wherever applicable.

Table 1. Identified Risks

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 and an update to this CWRP in at least 10 years.
The currently identified risks in order of highest to lowest priority include: 1. Wildfire risk and FireSmart principles are not widely understood and accepted by community members. A FireSmart program has been created by the qRD, and although education and training initiatives are ongoing, many residents may not understand FireSmart principles. 2. Public perception of wildfire risk is higher than the actual threat level, driven by media influence, stress, and limited understanding of coastal wildfire behavior. This may lead to misaligned community expectations and challenges in prioritizing risk reduction efforts. 3. Human caused fires, versus lightning, are the current and future predominant ignition source for wildfire in the area. 4. Islands within the qRD pose a unique risk due to their vulnerability factors such as lack of firefighting and emergency service personnel, Limited evacuation potential, and occasionally lack of available water for firefighting. 5. The BC building code currently does not require new structures be built to meet FireSmart principles. 6. Minimal cross-training between response agencies currently exists. Local fire services and BCWS should commit to more regular cross training. • Lack of wildfire could lead to complacency and lack of real emergency situation training and experience. 7. There are significant debris accumulations in recently cleared areas, such as slash piles along roads and utility lines throughout the Region, these accumulations increase wildfire risk. 8. Evac plans appear to not be tested or updated sufficiently which is putting some communities at additional risk. 9. The qRD, the City of Powell River, and Tla'amin Nation govern independently but coordinate together. Continued efforts to include all jurisdictions in committees, emergency planning and funding efforts should be supported as difficulty can arise in coordinating efforts during evacuation or disturbance response efforts. 10. The coordination of increased FireSmart opportunities across a large area, involving multiple agencies and community members, presents a risk of administrative and response inefficiencies as well as possible fragmented implementation.

Action Plan & Implementation

Table 2. Action Items for all Jurisdiction in the qRD, by FireSmart Discipline.

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
Education						
Education is a critical piece of resiliency planning as it relates directly to the recruitment and retention of community members in the FireSmart program as well as reduces the probability of wildfire ignitions within the WUI.						
1. Continue to emphasize FireSmart education events and open houses Focused on FireSmart concepts and activities occupants can do around their homes to reduce fire hazard.	FireSmart Coordinator	Very High	Annually May - October	Social media, posters, resources to run the event (ie. tent, food, etc.). Funding is available through UBCM's CRI FCFS program	Participation by minimum of 25 residents.	qRD Tla'amin Powell River
2. Continue to participate in a FireSmart Resiliency Committee comprised of leaders in the community, with a designated committee chair. The Committee should discuss future FireSmart programming, accountability, and structure moving forward.	FireSmart Coordinator	Very High	Immediately	Communication resources	Committee is operational in 2025 and for the duration of this plan.	qRD Tla'amin Powell River
3. Confirm communication plan, (previously completed with regional partners) and communicate key risks and	Regional District emergency manager, Tla'amin	Moderate	Ongoing	Communication resources	Confirmed Communications plan	qRD Tla'amin Powell River

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
recommendations each community can take.	Emergency Manager					
4. Work with BCWS to improve communication during wildfire incidents and improve real time information	Regional District emergency manager, Tla'amin Emergency Manager, BCWS staff	Moderate	Ongoing	Communication resources	Completed provincial/local Communications plan	qRD Tla'amin Powell River Province of BC
5. Promote education to: - Support fuel management activities and including prescribed and cultural burning - Maintain current fuel breaks; irrigating and mowing sports fields, - Planting more deciduous shade trees - Distribute FireSmart educational resources - Increase awareness of local fire regime included in this plan. (Speak to historical fire in the area, return intervals and coastal ecosystems)	FireSmart Coordinator	Moderate	Ongoing	Communication resources	Community supports	qRD Tla'amin Powell River

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
6. Organize annual Community Cleanup Day(s), with assistance to community members in cleaning their yards of combustible materials as well as assistance disposing of these materials (chipper rental if required, trailers for moving waste).	FireSmart Coordinator	Moderate	Annually	Chipper, disposal bins. Funding is available through UBCM's CRI FCFS program	Removal of hazardous vegetation, invasive plants and other flammable materials around homes.	qRD Tla'amin Powell River
7. Support the FireSmart BC Plant Program at local garden centres or nurseries. Includes plant tags, banners, staff buttons and in-store advertising.	FireSmart Coordinator	Moderate	Annually	Funding is available through UBCM's CRI FCFS program	Plant program implemented at local nurseries.	qRD Tla'amin Powell River
Legislation and Planning						
Legal or regulatory changes and community planning will improve community resiliency by encouraging members to change their decisions to build a more resilient community.						
8. Ensure the design and maintenance of public land such as parks and greenspaces consider FireSmart practices.	FireSmart Coordinator	High	Immediate	FireSmart Coordinator guidance and parks and properties staff	Newly developed internal landscaping and design guidelines for public land and greenspaces that follows FireSmart Principles	qRD Tla'amin Powell River

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
9. Renew FireSmart assessments for eligible buildings, publicly and First Nations owned critical infrastructure, culturally significant sites and/or green spaces.	FireSmart Coordinator	High	Ongoing	FireSmart Coordinator	Funding is available each year through the UBCM's CRI program ¹	qRD Tla'amin Powell River
10. Review vegetation management practices with MOTT and BC Hydro. Ensure right of ways and debris management is compliant with provincial regulations.	FireSmart Coordinator	Low	Next 5 years	FireSmart Coordinator	Practices reviewed and implemented.	qRD Tla'amin Powell River
Development Considerations						
Development considerations deal with how planned development (home, business and critical infrastructure) should be designed to optimize the qRD's resiliency to wildfire.						
11. Ensure awareness and consideration of FireSmart principles into the design of subdivisions	FireSmart Coordinator, Tla'amin Emergency Manager,	Moderate	Immediately	Staff time FireSmart Coordinator and firefighters time, internal capacity,	referral process confirmed	Powell River

¹ Union of BC Municipalities. "FireSmart Community Funding and Supports," n.d. <https://www.ubcm.ca/funding-programs/local-government-program-services-funding/community-resilience/firesmart-community>.

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
12. Advocate for BC building code to require FireSmart principles.	FireSmart Coordinator	Low	Next 5 years	Staff time	New Building Code implemented.	qRD Tla'amin Powell River
Interagency Cooperation						
To increase and share local knowledge, develop relationships and to collaborate on future projects.						
13. Provide Indigenous cultural safety training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.	FireSmart Coordinator	Moderate	annually	Communication Resources	Indigenous cultural safety training session in 1 area each year	qRD Tla'amin Powell River
Cross-Training						
Cross-training increases the Nation's wildland firefighting capacity while simultaneously supporting the structural volunteer fire department.						
14. Training for FireSmart Positions held by the various jurisdictions such as: - Tla'amin Nation to apply for their own FireSmart Coordinator position. - Grow the Home Partner's program.	FireSmart Coordinator	High	Immediate	N/A	Complete funding application for submission in 2025.	qRD Tla'amin Powell River

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
15. Continue Cross-training of fire department members, including structural fire and interface wildfire training. Ensure that local and provincial fire services work together to develop and test coordinated response.	FireSmart Coordinator, Fire Chiefs	Moderate	Annually	Communications Resources, interested participants, and funds available to conduct training session(s)	Hold regular multi-agency exercises in various service areas around the region.	qRD Tla'amin Powell River
Emergency Planning						
Emergency Planning informs community leaders and members on how to respond to different types of emergencies.						
16. Consider purchase of FireSmart structure protection equipment for Island communities and Tla'amin Nation. Currently lacking SPU's for Savary, Lasqueti, Tla'amin. Logistically, the islands would greatly benefit from having access immediately should they need it due to structure density. Tla'amin should also consider purchasing their own.	FireSmart Coordinator, Fire Chief	Very High	Immediate	Grant funding and/or source of capital currently available from province of BC	SPU improvements	qRD Tla'amin

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
17. Assess TN community water delivery ability as required for suppression activities, limited to current water system evaluation and available flow analysis. • Improve Tla'amin Nation's water distribution, access and facilities to better respond to wildfire and structure fire.	Tla'amin Emergency Manager	High	Immediately	Staff time, Contractor	-An updated water assessment needs report. -New water treatment facility and infrastructure	Tla'amin
18. Participate in a series of cross-jurisdictional meetings focusing specifically on tabletop exercises relating to wildfire preparedness and suppression with the goal of leading toward an actual multi-agency/mutual aid exercise.	FireSmart Coordinator, Tla'amin Emergency Manager, Fire Chiefs, BCWS	High	Immediately	Staff time, communication resources	Cross training occurs	qRD Tla'amin Powell River
19. Purchase ancillary equipment including hoses, fittings, portable pumps for outdated equipment.	Fire Chiefs	High	Immediate	Funding to purchase fire equipment.	Resources secured and desired fire equipment purchased	qRD Tla'amin Powell River
20. Use all local materials to promote community emergency preparedness events focused on wildfire.	qRD Evacuation planning assistant, Tla'amin	Moderate	Annually	Staff time, Communication resources	Guide is created.	qRD Tla'amin Powell River

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
• Include priority understanding for shelter in place vs. evacuations.	Emergency Manager					
21. Create a guide to re-entry after evacuation/ Emergency Recovery Plan.	qRD Evacuation planning assistant, Tla'amin Emergency Manager	High	Next 1-3 years	Staff time	Guide is created.	qRD Tla'amin
Vegetation Management						
The purpose of vegetation management is to reduce wildfire risk through the reduction of vegetative fuels available for consumption, while supporting forest values and healthy ecosystems.						
22. Recognize the potential for trails in parklands and establish hand guards/fuel breaks and access/anchor points. Look to enhance wherever possible.	FireSmart Coordinator	Very High	1-3 years	Grant Funding	Trails maintained with fuel mitigation techniques	qRD Tla'amin Powell River
23. Apply for provincial funding to support maintenance for existing fuel treatments and areas that are low risk to maintain this status: • Penticton Trails • Savary Island • Mount Pocahontas	Ministry Staff, Regional District staff	Moderate	1-5 years	Ministry approval, Funding applications	Maintenance of existing fuel treatments scheduled and implemented.	qRD Powell River Tla'amin

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
stretch of Highway 101 between Wildwood to Tishosum						
24. Implement and encourage landscaping using FireSmart vegetation management principles. - Advocate for good deciduous species versus high risk- low growing conifers (cedar hedges, juniper) - Implement landscaping efforts towards pruning for mature conifers and mitigating ladder fuels next to sheds. Clearing low lying branches, piles, saplings and coniferous species next to structures.	FireSmart Coordinator	Moderate	Annually	Communications Resources, interested participants, and funds available to conduct training session(s)	Local FireSmart plant program implemented. High hazards plants begin to be replaced.	qRD Tla'amin Powell River
25. Work with FNESS to incorporate cultural prescribed burning	Tla'amin staff, FireSmart Coordinator	High	Ongoing	Interagency coordination, communication	Funding acquired from FNESS for operational fuel treatments	Tla'amin First Nation
26. Work closely with all local forest industry operators, such as Powell River Community forests to	Ministry of Forests	High	Immediately	Funding and/or source of capital available to	Collaboration occurs between PRCF and MOF WUI WRR plan	qRD Powell River

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
maximize on fuel treatment areas and incorporate wildfire planning into their management plans.				allocate time for this plan's development		Province of BC, Ministry of Forests
27. Work closely with Tla'amin Forestry partners in Industry to maximize on fuel treatment areas and incorporate wildfire planning into their management plans.	Tla'amin Staff	High	Immediately	Funding and/or source of capital available to allocate time for this plan's development	Collaboration between Tla'amin Forestry sector and qRD for Fuel treatments.	Tla'amin
28. Road allowances should be addressed for fire truck safety and as an opportunity to showcase fuel treatments on right of ways.	MOTT, Fire Chief, FireSmart Coordinator	Moderate	Immediately	Interagency coordination, communication	Rural road right of ways maintained, especially on Savary Island	MOTT
29. CWRP should advocate for high voltage line corridors be turned into a fire break. This will require a multi year treatment regime by powerline operators to permanently remove flammable vegetation from the corridor.	BC Hydro, FireSmart Coordinator	Moderate	Immediately	Interagency coordination, communication	Powerline Invasive species maintenance is continually ongoing	Province of BC
30. Promote mitigating flammable invasive species on vacant lots in the municipality.	FireSmart Coordinator	Moderate	Immediately	Interagency coordination, communication	Invasive species treatment schedule	City of Powell River

Action	Lead(s)	Priority	Time frame	Resources Required	Metric for Success	Jurisdiction
31. (Ministry of Forests) Licensees should consider planting deciduous species post-harvest in areas near the WUI to lower the number of high-risk conifers. consider wildfire stocking and	Forest Licensees	Moderate	Immediately	Interagency coordination, communication	Pilot projects and deciduous species successfully utilized in block reestablishment.	qRD Tla'amin, Ministry of Forests

1 Introduction

Wildfire is a natural and many times beneficial disturbance agent on BC landscapes, however, with warming temperatures and changing precipitation regimes due to climate change, the frequency, severity, and size of wildfires in British Columbia has been increasing in the last decade. This can be seen in 2017 and 2018, which were two of the worst wildfire seasons in BC history, with 1.2 and 1.3 million hectares burned, respectively². The 2021 wildfire season was notable as well, with approximately 868,000 hectares burned, 181 community evacuation orders, and 304 community evacuation alerts³. The 2023 wildfire season in British Columbia continued this distressing trend, with almost 3 million hectares burned across the province.

Human encroachment into forested areas has resulted in an expansion of the wildland-urban interface (WUI), exposing more values to the risk of wildfire. As communities push further into natural settings, the interface between human habitation and flammable vegetation broadens, increasing the risk of wildfires and the potential for significant property and ecological damage. These developments, set against the backdrop of a warming planet, underscore the urgent need for comprehensive wildfire management and prevention strategies to safeguard both the natural environment and human communities in British Columbia.⁴

These trends are particularly relevant to the qathet Regional District (qRD), City of Powell River, and Tla'amin Nation because of the unique geography and low historical wildfire frequency. There is growing concern in the general public regarding wildfire risk within the region, and a growing desire for increased wildfire risk mitigation. Fires of the early 20th century were very stressful events with significant impacts on local residents and their homes and properties. There are persistent myths in the qRD of wildfires that burned from one end of the Region to the other, or from one end of the island to another: these myths continue to misrepresent the history, defy fire science, and mislead residents in relation to risk in the region.

This plan is organized for all governing bodies within the Region (Table 3). This collective framework facilitates coordination and cooperation on issues of mutual interest, from regional planning and environmental stewardship to economic development and emergency services. Most importantly for this CWRP and wildfire management, emergency planning is lead by the qRD with support from the Tla'amin Nation and City of Powell River. Thus, this CWRP is organized to coordinate with the existing emergency management framework for the Region.

² BC Wildfire Service. "Wildfire Season Summary - Province of British Columbia," April 11, 2025. <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary>.

³ "Wildfire Season Summary - Province of British Columbia," April 11, 2025. <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary#provstat>.

⁴ "About FireSmart | FireSmart Canada," n.d. <https://www.firesmartcanada.ca/what-is-firesmart/understanding-firesmart/what-is-the-wui/>.

Within the Region, three governments are present. The Tla'amin Nation, with its self-governing authority, upholds its cultural heritage, rights, and responsibilities over its traditional territories, following the principles laid out in the Tla'amin Final Agreement. Incorporating the governance of the Tla'amin Nation into this plan signifies a collaborative approach, respecting the sovereignty and self-determination of the Tla'amin people within their treaty lands. This integration aims to harmonize regional planning efforts within the Tla'amin Nation's governance structures, policies, and cultural values, ensuring that development and conservation initiatives align with their vision for their territories. The qRD and City of Powell River must ensure engagement with Tla'amin Nation and other nations through all its community wildfire planning and FireSmart initiatives. Respecting and promoting cultural burning and other traditional knowledge and practices should be an integral part of building resilience to wildfire across the qathet region.

The City of Powell River is the only incorporated municipal government within the qRD, and serves its urban population, focusing on municipal services, infrastructure, and urban development. The City of Powell River forms the key service centre for the Region and is of critical importance to residents both within the City, as well as residents of the Tla'amin Nation and the surrounding rural areas.

The Electoral Areas are unincorporated and administered by the qRD. Under the qathet Regional District's umbrella, these areas collaborate to leverage their strengths, share resources, and address regional challenges that transcend their boundaries. However, within these Electoral Areas there are distinct communities, including three island communities. Although these communities are distinct, most emergency planning and preparedness occurs collaboratively through the qRD. This partnership recognizes the importance of respecting each other's uniqueness while finding common ground for the collective benefit of the region.

Table 3. Jurisdiction Description.

Governing Body Local Area for CRI Funding Purposes	Community
Tla'amin Nation	Tla'amin
City of Powell River	City of Powell River
qRD Electoral Area A	Mainland (Lund)
qRD Electoral Area B	Mainland (South of Town)
qRD Electoral Area C	Mainland (South of Town)
qRD Electoral Area A	Savary Island
qRD Electoral Area D	Texada Island
qRD Electoral Area E	Lasqueti Island

1.1 CWRP Overview

In 2023, Frontera Forest Solutions Inc. was retained by the qRD to develop a CWRP for the Region, including the City of Powell River and Tla'amin Nation. CWRPs are a comprehensive and science-based approach toward wildfire risk reduction planning that reflects local priorities and provincial goals for wildfire mitigation⁵.

Specifically, the CWRP process addresses the seven disciplines of FireSmart Canada⁶:

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

In developing this CWRP, the consultants worked through these key phases:

1. **Gathering background information:** This included consultation with the qRD, City of Powell River, and Tla'amin First Nation, including the band manager, forestry managers, emergency managers, and government staff. Existing higher-level community plans were consulted to ensure linkages with these existing plans (See Table 4 below).
2. **Identification of the values at risk and assessment of wildfire risk:** wildfire threat assessments were completed in forested areas within and around the reserve. Wildfire threat assessments take into consideration the natural fire regime and ecology, Provincial Strategic Threat Analysis (2023 dataset), forest fuel type verification, location of fuels in relation to values, and GIS wildfire behaviour analyses (see Wildfire Risk Assessment). Additionally, local BCWS wildfire officers were consulted to identify primary wildfire concerns for the area.
3. **Developing a risk mitigation strategy and recommendations:** a comprehensive guide for the Region to implement wildfire mitigation and risk reduction activities based on identified hazards. The risk mitigation strategy focuses on FireSmart activities around homes and structures, legislation and planning around emergency management, prioritization of fuel treatments, and wildfire response recommendations.

1.2 CWRP Goals

The purpose of this CWRP is to identify wildfire threat within and surrounding the Region, to quantify the potential risks and impacts to its communities from wildfire, and provide strategies for reducing

⁵ British Columbia Wildfire Service and BC FireSmart Committee. "Community Wildfire Resiliency Plan Instruction Guide," 2020.

⁶ "The Seven FireSmart Disciplines | FireSmart Canada," n.d. <https://www.firesmartcanada.ca/what-is-firesmart/understanding-firesmart/seven-firesmart-disciplines/>.

identified threats and risks. Specifically, the landscape-level wildfire risk assessment methods of this CWRP will inform strategies that will aim to:

1. Increase the safety of community members in the event of a wildfire, including evacuation safety.
2. Reduce the impacts/losses to homes and critical infrastructure by employing FireSmart principles.
3. Reduce the potential fire intensity, behaviour and spread of wildfire into the community.
4. Provide recommendations to reduce the overall negative economic, social, and environmental impacts of wildfire to the qRD, City of Powell River, and the Tla'amin Nation.
5. Increase communities' capacity and understanding of wildfire threat and risk.
6. Foster greater interagency collaboration across administrative boundaries.

1.3 Current Situation

The effects of climate change are increasingly evident within the qRD, contributing to rising wildfire risks across the region. Warmer temperatures, drier conditions, and shifting seasonal patterns have created conditions that increase the likelihood and severity of wildfires.⁷ These changes are not only affecting fire behavior but also regional ecosystems. An example of this, tree species, such as western red cedar trees; a culturally and ecologically significant species in the area, are showing signs of stress and declining health due to warmer temperatures and drier conditions.⁸ Such impacts highlight the complex challenges posed by climate change and the need for ongoing research and monitoring to better understand how these shifts may influence wildfire resilience and natural resource management within the qRD.

The qRD has already made significant strides in enhancing wildfire resilience through established programs and partnerships. Building on the existing 2015 qRD Community Wildfire Protection Plan (CWPP), the qRD has implemented targeted strategies for wildfire risk assessment and mitigation. This proactive approach has identified high-risk areas and has carried out fuel reduction treatments, and continues to work towards planning future areas for mitigation.⁹

Ongoing FireSmart initiatives help participating community members to gain valuable knowledge about wildfire preparedness, and steps they can take to protect their properties. The qRD leads a FireSmart program for supporting local residents, with a dedicated FireSmart Coordinator managing this program. The qRD FireSmart program has made significant efforts to train multiple members of the qRD in the

⁷ Clean BC. "About Climate Change - CleanBC." CleanBC, January 22, 2025.

<https://cleanbc.gov.bc.ca/about-climate-change/>.

⁸ Seebacher, T. M. (2007). Western redcedar dieback : possible links to climate change and implications for forest management on Vancouver Island, B.C. (T). University of British Columbia. Retrieved from

<https://open.library.ubc.ca/collections/ubctheses/831/items/1.0074955>

⁹ qathet Regional District. "Regional FireSmart Program - qathet Regional District." qathet Regional District, May 6, 2024.

<https://www.qathet.ca/services/emergency-services/regional-firesmart-program/>.

home partners program.¹⁰ These programs emphasize the importance of creating defensible spaces and reducing fuel loads around homes.

Many areas within Powell River are also currently quite resilient and have the ability to shelter in place. Many areas such as schools, hospitals, and parks contain large fuel free areas that would likely be considered safe zones from any significant wildfire threat. (**Appendix A: Positives In the Current Situation**).

Collaboration between the BC Wildfire Service (BCWS), Tla'amin Nation, the City of Powell River, and the qRD has created strong partnerships focused on wildfire management. This collaboration has facilitated knowledge sharing, resource allocation, and joint training exercises, strengthening the overall capacity to respond to wildfire threats. Building on these partnerships within the Region and collaboration through regular emergency preparedness meetings have been important components in maintaining communication with many important collaborators within the region. Municipal planners, Vancouver Coastal Health authority, Ministry of Forests, RCMP, BC Ferries, Ministry of Transportation BC Hydro, utility operators, community forests, and many other collaborators are welcomed at these emergency preparedness meetings and interact cohesively to bolster an all-hazards approach to planning.

¹⁰ FireSmart BC. "Wildfire Mitigation Program Hub | FireSmart BC," March 24, 2025. <https://firesmartbc.ca/wmp/>.

2 Relationship to Other Plans

The Community Wildfire Resiliency Plan (CWRP), as well as any wildfire risk mitigation plan or activity, relates to many plans that inform, or may be informed by the CWRP. Community Wildfire Protection Plans (CWPP) or CWRPs may exist for the community or neighbouring communities. For communities that are surrounded by crown land, [Wildfire Risk Reduction Tactical Plans](#)¹¹ have been developed by the provincial government. These landscape level plans identify the wildfire risk for a region, and identify areas for vegetation management to reduce wildfire risk. As of the writing of this CWRP, the Sunshine Coast Natural Resource District are developing a Wildland Urban Interface Wildfire Risk Reduction (WUI WRR) Tactical Plan for the study area.

This is an updated CWRP for both the Mainland CWPP (2015) and Savary Island CWPP (2009). They were BC's first iteration of community wildfire protection and created the foundation for today's CWRP. These CWPPs have been reviewed, and broad discussion of their findings have informed this CWRP. Many hazardous fuel types and areas were identified in the previous CWPP and led to fuel management prescriptions in areas such as Penticton trails. Many action items were recommended and emergency managers relied on these CWPPs to guide the last decade of wildfire resiliency planning.

Table 4 summarizes the plans that were consulted for the development of this CWRP. This includes qRD, City of Powell River, and the Tla'amin Nation plans and policy documents, neighbouring government plans and documents, and provincial agency plans and policies. Where possible recommendations in this CWRP are aligned with objectives of these plans. Objectives or policies within these plans that conflict with CWRP objectives have also been identified where applicable, and are discussed fully in the relevant action recommendation within the FireSmart discipline section of this CWRP.

¹¹ British Columbia Wildfire Service. "CROWN LAND WILDFIRE RISK REDUCTION PLANNING GUIDE 2023-2024." Report, 2023. https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/crown_land_wildfire_risk_reduction_planning_guide_2023_2024_final.pdf.

Table 4. Key Plans and Relationships to CWRP

Governing body	Plan Type	Description	Relationship to CWRP
Tla'amin	2023-2028 Comprehensive Nation Plan	An overarching document that shapes all other nation plans and strategies.	Provide government with understanding of priorities and implementing safety guards to protect their community from wildfire.
	Tla'amin Nation Forest Resource Plan August 2024	The FRP describes Tla'amin's commitment to sustainable forest resource management throughout ʔəmsgijə. It aims to balance economic development with sustainable forest management practices, while integrating values related to good stewardship.	The Tla'amin Nation will develop additional tactical planning outcomes related to wildfire risk reduction, which may prioritize the use of cultural burning.
	Slammon Comprehensive Community Plan (CCP) March 2007	This CCP provides a long-term vision for the Tla'amin Nation. All rules and regulations enacted within must comply with this plan. Any bylaw recommendations included in this CWRP must comply with this plan.	This plan highlights Fire Departments needs and requirements. It highlights the water treatment plant and overall goals for community development and resources.
	Tla'amin Nation Strategic Plan March 2017	This plan outlines and prioritizes all values that are important to Tla'amin Nation A guiding document for the vision of the Nation.	Wildfire has been identified as an important value to become resiliency against.
	Tla'amin Watershed Protection Plan March 2021	This Watershed Protection Plan provides an overview of the current risks to watershed health in all three main Tla'amin watersheds: Tla'amin River; Okeover River; and Theodosia River.	Wildfire poses a risk to the Tla'amin watersheds and water quality. Discussed further in Environmental Values section.
	Community Infrastructure Services Plan (CISP) May 2022	Provides context for planning and managing community infrastructure within Tla'amin Nation's Community Infrastructure service areas.	The CISP relates to water, roads, bridges and other important variables when responding to wildfire.

Governing body	Plan Type	Description	Relationship to CWRP
City of Powell River	Sustainable Official Community Plan 2014 (Latest amendment 2023)	This OCP provides a long-term vision for the City of Powell River. All bylaws enacted within Powell River must comply with this plan. Any bylaw recommendations included in this CWRP must comply with this plan.	Recommendations from the OCP related to open burning bylaws, development consideration, legislation and planning sections are found within the FireSmart recommendations portion of this CWRP.
qathet Regional District	qathet Regional Housing Needs Report December 2023	This assessment provides insight onto housing needs in qathet, which in turn impacts future development patterns	This plan notes growing development pressure within qRD. Future development may present opportunities to reduce wildfire risk, discussed further in the Development Considerations sections of this CWRP.
	Powell River Regional District Community Wildfire Protection Plan June 2015	This CWPP identifies wildfire risk and mitigation options for the qRD Mainland.	CWPPs were the precursor to CWRPs, and follow a different wildfire risk methodology and planning process. However, this plan does provide useful insight into wildfire risk throughout the Region.
	Savary Island Community Wildfire Protection plan March 2009	This CWPP identifies wildfire risk and mitigation options for the Savary Island.	This CWPP was the precursor to CWRPs, and focused on identifying risks to only Savary. However, this plan does provide useful insight into wildfire risk throughout the Region.
	Community Evacuations Guides Spring 2024	The qathet Regional Emergency Program has developed eight community evacuation guides as a result of the communities' input at their Community Evacuation Planning meetings held in spring and summer of 2019. These guides will help prepare household emergency plans.	Public education tool in the result of a wildfire.

Governing body	Plan Type	Description	Relationship to CWRP
Electoral Area A	Electoral Area A Official Community Plan Schedule A to Bylaw No. 500, 2015	This OCP provides a long-term vision for Electoral Area A. All bylaws enacted within Electoral Area A must comply with this plan. Any bylaw recommendations included in this CWRP must comply with this plan.	Any bylaw recommendations included in this CWRP must comply with this plan.
	Savary island official community plan bylaw no. 403, 2006	This OCP provides a long-term vision for Savary Island.	Any bylaw recommendations included in this CWRP must comply with this plan.
Electoral Area B	Electoral Area B Official Community Plan Bylaw No. 465, 2012	This OCP provides a long-term vision for Electoral Area B.	Any bylaw recommendations included in this CWRP must comply with this plan.
Electoral Area C	Electoral Area C Official Community Plan Bylaw No. 467, 2012	This OCP provides a long-term vision for Electoral Area C.	Any bylaw recommendations included in this CWRP must comply with this plan.
Electoral Area D	Texada Island Official Community Plan Schedule A to Bylaw No. 551, 2019	This OCP provides a long-term vision for Electoral Area D.	Any bylaw recommendations included in this CWRP must comply with this plan.
Islands Trust (Electoral Area E – Lasqueti)	Lasqueti Island Local Trust Committee Official Community Plan Bylaw No. 77, 2005	This OCP provides a long-term vision for Electoral Area E.	Any bylaw recommendations included in this CWRP must comply with this plan.
Community Forest	Forest stewardship plan for Community Forest License K3G	These plans set out objectives for sustaining biodiversity within the Forest License.	Some areas within these plans, require wildfire management abatement and hazard reduction.
Ministry of Forests	Sunshine Coast Landscape Unit Plans 2000-2014 (Last Updated July 2019)	Twenty-five landscape units have been delineated within the Sunshine Coast Natural Resource District. Plans for sustaining elements of biodiversity (e.g. old growth forest, wildlife trees) have been developed for 18 landscape units.	All vegetation management activities recommended within this plan must comply with the goals and objectives set out in these landscape management plans.

3 Regional District Description

3.1 Community Information

The Region is a large area on the south coast of BC's mainland. Despite its location on the mainland, the Region is only accessible by ferry and airplane, due to significant mountain ranges, inlets, and the Salish Sea limiting access to the broader mainland and Vancouver Island. As such, the community is isolated, from neighbouring communities. Ferries link the community to the Sunshine Coast, Vancouver Island, and provide service to the adjacent small inhabited islands. The main population lives in the area spanning from Saltery Bay north to Lund, with most residents living within 1km of the coast. The qRD also includes island communities including Savary, Texada, Lasqueti and Hernando.

The qathet Regional District is on the traditional territories of the Tla'amin, shíshálh, Klahoose, Nanoose, and K'ómoks First Nations who have stewarded the land for millennia. Engaging with these Nations through community wildfire planning and FireSmart initiatives, and respecting and promoting cultural burning and other traditional knowledge and practices should be an integral part of building resilience to wildfire across the qRD.

The Region's total population as of 2021 was 21,496 with a population density of 4.24/km² (Table 5). However, this density varies widely, with portions of the City of Powell River having relatively high density typical of an urban community. In contrast, portions of the qRD Electoral Areas are much more rural, with low population density.

Table 5. Community information for the Jurisdictions within qRD

Jurisdiction	Area (km ²)	2021 Population (2021 Census, StatsCan) ¹²
Tla'amin Nation	83	797
The City of Powell River	30	13,943
qRD- Electoral Area A	3,951	1,250
qRD- Electoral Area B	153	1,664
qRD- Electoral Area C	708	2,197
qRD- Electoral Area D	300	1,126
qRD- Electoral Area E	73	498
Totals	5,075	21,496

¹² Government of Canada, Statistics Canada. "Select From a List of Geographies - British Columbia," November 15, 2023. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/search-recherche/lst/results-resultats.cfm?Lang=E&GEOCODE=59>.

3.2 Area of Interest

The qathet Regional District is located largely within the traditional territory of the Tla'amin Nation. The Regional District includes seven jurisdictions: Tla'amin Nation lands, five unincorporated Electoral Areas administered by the qRD, and one incorporated municipality (City of Powell River), and covers an area of approximately 5,000 km² (Figure 1). The composition of the qRD Electoral Areas varies significantly, and includes several island communities, as well as rural acreage style development just outside Powell River City limits. The City of Powell River is the main settlement within the Region, with the highest population and population density.

The Tla'amin Nation is considered part of the Coast Salish Indigenous people. The main residential area, Tišosəm (milky waters from herring spawn), is located between the City of Powell River and Lund. The Tla'amin community has over 1,100 members,¹³ with most living in Tišosəm. The Tla'amin Nation comprises approximately 3.7% of the Region's population. The majority of the treaty land lies northwest of Powell River, extending up the east side of the Okeover Arm to Theodore Arm. Ahgykson island has also been included within Tla'amin's AOI. Although without a technical 'WUI' associated with it, the island has cultural values that they desire to protect and will be discussed further in **Cultural Values**.

All portions of Electoral A, B and C that are on the mainland have been considered part of the **Regional District Mainland (Electoral Area A, B & C)** FireSmart recommendations portion of this plan.

Geographical distinctions make these areas similar, and distinct from the Island communities. This area includes the communities from Lund to Saltery Bay.

Several islands are part of the qRD, including Savary, Texada and Lasqueti. Savary Island is the most highly subdivided island in North America at 1,800 land parcels. Savary has been examined independently within the **Savary Island (Electoral Area A)** FireSmart section of this plan. **Texada (Electoral Area D)** is the largest island in the qRD and is also discussed independently. **Lasqueti (Electoral Area E)** is located between Vancouver Island and the mainland. It is part of the Islands Trust, an organization that oversees the planning and land use in the Trust Area, which includes several islands between Vancouver Island and the mainland.

Hernando Island is not included in the Area of Interest for this project. It is a smaller, private island located north of Savary Island, and all land is privately owned. The FireSmart Coordinator has been in contact with this island ahead of this plan. Hernando Island residents have created a separate wildfire response plan independent of the CWRP. In addition to this, the qRD FireSmart Program has provided Hernando residents with FireSmart guidance for their residential and recreational properties

¹³ "Community," n.d. <https://www.tlaaminnation.com/home-page/community/>.

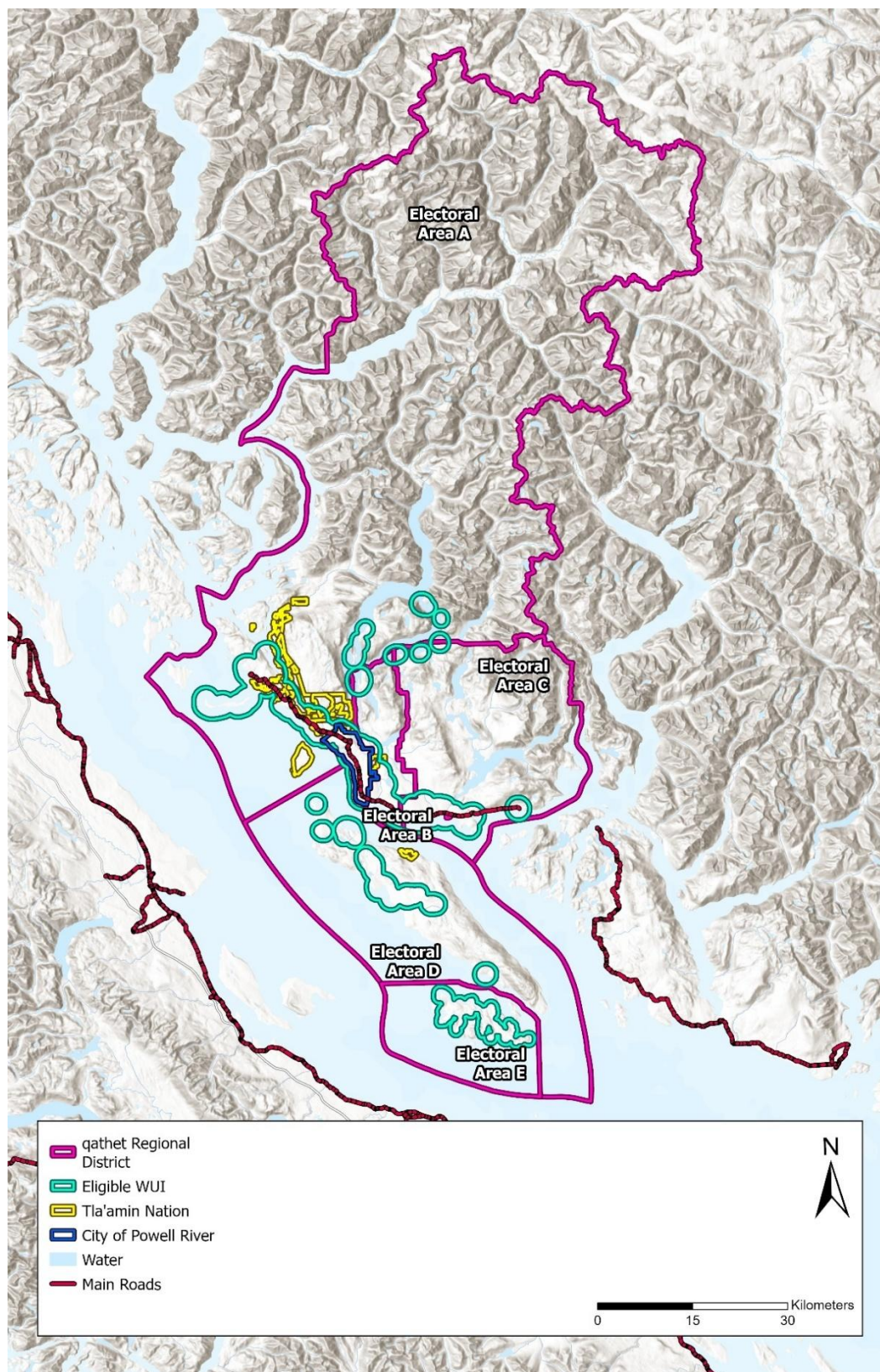


Figure 1. General overview map of jurisdictions and WUI.

3.3 Wildland-Urban Interface

The Area of Interest (AOI) includes the qRD, City of Powell River, and the Tla'amin Nation lands. It is important to understand that while the AOI for this Plan consists of the jurisdictional boundaries of these governments, this CWRP focuses on the Wildland Urban Interface (WUI) areas within the Region. The Wildland-Urban Interface (WUI) occurs where homes, structures, and critical infrastructure are found adjacent to or intermixed with combustible vegetated lands. For the purpose of the provincial FireSmart Community Funding and Support (FCFS) program¹⁴, the eligible WUI is defined as a one-kilometer buffer from areas where structure density is greater than 6 structures/km². Under the terms of this Plan's grant funding (UBCM's Community Resilience Investment), CWRP planning efforts are limited to the WUI. This one-kilometer buffer represents a reasonable distance that embers from a wildfire could be able to travel and ignite a structure. Figure 1 illustrates the eligible WUI for this CWRP.



Figure 2. Example of the WUI, where structures meet the wildland.

¹⁴ Union of BC Municipalities. "FireSmart Community Funding and Supports," n.d.
<https://www.ubcm.ca/cr/firesmart-community-funding-supports>.

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 WUI. VAR are the human or natural values that may be impacted by wildfire; this includes human life, property, critical infrastructure, high environmental and cultural values, and resource values.

4.1 Human Life and Safety

Human life and safety are the highest priorities in the event of a wildfire. A key consideration is the evacuation of at-risk areas and safe egress. Evacuation can be complicated by the unpredictable and dynamic nature of wildfire. Orderly evacuation takes time and safe egress routes can be compromised by quickly moving/changing wildfire, or by traffic congestion and accidents.

A main concern for the Region is its remote nature, as well as the even more remote island communities within the Region. The island communities bear additional logistical challenges in all aspects of wildfire resiliency and response, and will need community evacuation supports in times of need. In the event of a large-scale evacuation, ferries may become a primary method of egress for both the Region and the island communities, moving residents and fire resources. BC ferries have two terminals for supporting egress from the Region, one at Saltery bay and one in Powell River. Texada Island is serviced by a regular vehicle ferry from Powell River, while other smaller islands rely on water taxis, private watercraft, and chartered boats. Lasqueti Island is served by a contracted ferry service providing passenger only transportation. These access and egress limitations are a significant issue for wildfire response, and a large-scale wildfire evacuation will be extremely challenging to manage.

On the Mainland of the Region, many areas are also similarly isolated. This includes areas north of Powell River. The Tla'amin Nation and Lund are highly vulnerable to isolation in the event of a large wildfire, as they are serviced by a small highway, with limited road redundancy for alternative routes should the road be blocked. There are positives to the local landscape though - having access to lots of water bodies throughout the mainland and vegetated areas with moderate to low fire risk.

Human life and safety should be at the forefront of planning for any cross-training exercise and emergency planning scenarios. For this Region, the primary focus should be having wildfire specific plans in place for evacuation particularly at the smaller neighbourhood scale while also considering broader community evacuations. This will likely require staging from "Safety Zones", where residents can safely shelter while awaiting evacuation.

4.2 Critical Infrastructure

Critical infrastructure (CI) are structures or facilities that are essential to the health, safety, security, economic wellbeing, and/or effective functioning of a community or government. Protection of critical infrastructure during a wildfire event is an important consideration for emergency response preparedness and effectiveness, ensuring that coordinated evacuation can occur if necessary, and that essential services can be maintained and/or restored quickly after an emergency event. Critical infrastructure includes emergency and medical services, electrical and gas services, transportation and primary road networks, drinking and wastewater systems, social/support services, and communications infrastructure. Completing FireSmart activities around critical infrastructure will help to reduce losses and impacts related to wildfire. The following CI were identified within the Region. (Figure 3).

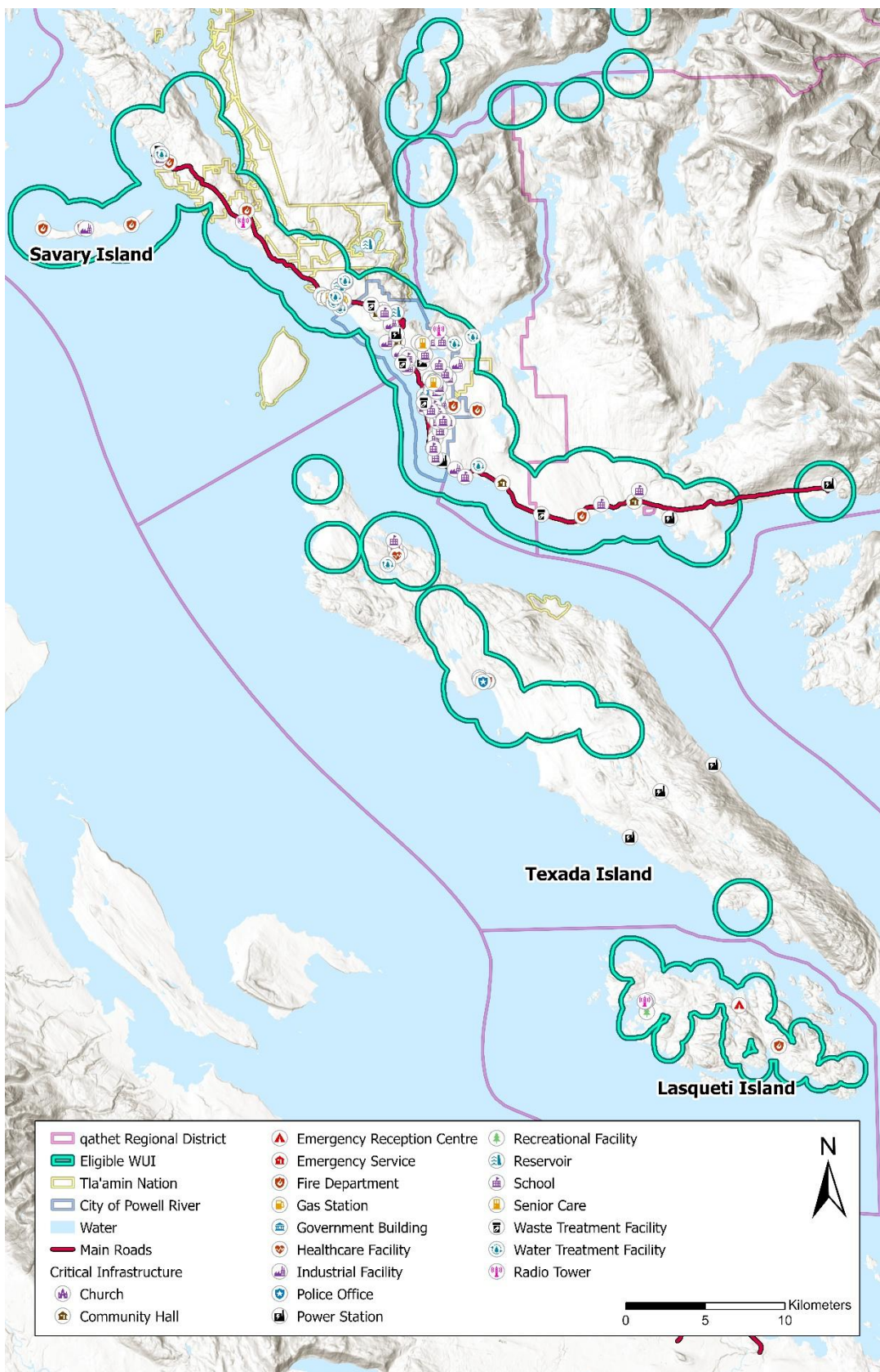


Figure 3. An Overview of Structures and Critical Infrastructure

4.3 Community Water Supply

Wildfires can have severe and long-lasting impacts on water supplies, leading to decreased water quality and even disrupting water systems entirely. The intense heat from fires can cause soil to become hydrophobic, increasing runoff and erosion, which in turn leads to sediment and debris entering waterways. This can result in the contamination of drinking water sources with ash, nutrients, and heavy metals, posing risks to both human health and aquatic ecosystems. In the years following a fire, landslides triggered by soil erosion can further degrade water quality and disrupt water supply infrastructure, complicating recovery efforts and affecting community resilience.

The qRD, Tla'amin and the City of Powell River operate independently for their water resource needs. These networks can be quite complex, and in many cases regional districts do not provide drinking water for residents. The qRD Electoral Areas are serviced by multiple small potable water systems that are delivered by local improvement districts or societies. Each community is discussed separately below.

Tla'amin Water Supply

Tla'amin Nation's community water supply is described in the Tla'amin Watershed Plan¹⁵. The goal of this watershed plan is the protection of watershed health including drinking water quality, as well as protecting fish and all aquatic habitat. This water supply includes the three main watersheds: Tla'amin River, Okeover River and Theodosia River watershed areas.

All residents within Tla'amin Nation are connected to Tla'amin's water supply. There are hydrants present throughout Tla'amin's townsite. A priority for Tla'amin is replacing the existing water infrastructure for the community. The current pipes do not have meters on them and have not been tested for capacity and run the risk of failing during a wildfire event. Issues with water infrastructure are currently being assessed, and the water supply network in the process of being upgraded.

A concern about the rise in temperatures affecting water temperatures, and drought conditions in the Theodosia River Watershed have been raised and wildfires would further exacerbate the negative impacts in this area. Coastal forest canopy cover is the best way to maintain cool moist soil temperatures. The potential loss of canopy adjacent waterways in the event of a wildfire could impact water quality through increased water temperatures. This is discussed further in the **Environmental Values** section of this plan.

¹⁵ "Tla'amin Watershed Protection Plan," n.d.
<https://www.tlaaminnation.com/tlaamin-watershed-protection-plan/>.

City of Powell River

The City of Powell River's water is sourced from Haslam Lake, with Powell Lake used as a backup supply. Haslam currently has capacity to provide water for over 22,000 people¹⁶, providing drinking water as well as supply for wildfire suppression. Hydrant systems that are in place would fulfill the cities structural fire fighting needs, and are expected to be adequate to supply water for wildfire suppression. Hydrants are present throughout the city limits and no areas of concern have been identified. Wildwood, however, has been identified as an area that may have difficulties accessing hydrant water during a wildfire event.

Regional District Electoral Areas

Many rural residences operate independently on wells, septic tanks, and onsite sewage systems.

The community water systems within the qRD Electoral Areas are extremely diverse, with varying infrastructure, supply volumes, and systems. The Regional District owns and operates one small water system – Myrtle Pond - located southeast of Powell River in Myrtle Creek Estates on Bradford Rd.

Individual water systems may have limitations due to supply of infrastructure but the overall regional water supply is not expected to be limited throughout the qRD as a whole in the event of a wildfire due to the proximity of lakes, rivers and even the ocean if necessary.

¹⁶ "Southern Region Water Source Study," November 25, 2009. <https://www.qathet.ca/wp-content/uploads/2020/07/2009-Southern-Region-Water-Source-Study-with-Appendices.pdf>

4.4 Fire Suppression Capabilities

There are a variety of agencies providing fire suppression within the Region. The Tla'amin Nation and City of Powell River provide fire suppression services for their communities through fire departments that operate independently of the qRD. The qRD directly manages four fire volunteer fire departments: Northside Volunteer Fire Department, Savary Island Volunteer Fire Department, Malaspina Volunteer Fire Department, and Lasqueti Island Volunteer Fire Departments. Texada Island has two fire departments, the Gillies Bay Volunteer Fire Department and the Van Anda Volunteer Fire Department. These two departments function through an Improvement District model for their fire protection areas, and operate independently of the qRD. All fire departments within the Region are discussed below.

The BC Wildfire Service (BCWS) is responsible for wildfire suppression and management in the Region. The BCWS operates a fire base located in the City of Powell River at the airport, and is responsible for all fire response outside of the established local fire protection service areas. This BCWS base has two wildfire officers, and two Initial Attack fire crews.

Fostering relationships with BCWS in all community aspects of wildfire response, FireSmart initiatives, and communications is important to the qRD. This includes continued work with the Ministry of Forest staff on Wildfire Risk Reduction (WRR) plans, hazard abatement on Crown lands, and accessing provincial grant funding.

Tla'amin

The Tla'amin Fire Department currently has eight regular on-call staff. This department currently has one fire tender and limited wildland equipment. Tla'amin currently has no structure protection unit. There is a desire within this department in increased collaboration with the City of Powell River and qRD, as well as the BCWS in cross training and table top exercises to enhance interagency cooperation and cross training between departments. This department is also exploring acquiring a structure protection unit to increase interface wildfire response capabilities.

Powell River

Powell River Fire Rescue has a full array of firefighting equipment, four fire engines, one ladder truck and light vehicles for responding to emergencies¹⁷. The department is composed of career and paid-on-call members with two Chief Officers, 15 International Association of Fire Fighters (IAFF) career personnel consisting of 14 suppression firefighters, as well as approximately 20 paid-on-call auxiliary firefighters. This department includes several former BCWS firefighters with significant interface wildfire experience. Although the department does have wildfire suppression equipment, much of it is dated and considered unreliable.¹⁸

¹⁷ "Fire Halls, Stations, & Apparatus - City of Powell River," n.d. <https://powellriver.ca/pages/fire-halls-stations-apparatus>.

¹⁸ "Fire Rescue - City of Powell River," n.d. <https://powellriver.ca/pages/fire-rescue-department>.

qathet Regional District Electoral Area Fire Departments

Fire protection within the qRD Electoral Areas is provided through six distinct fire departments, each with their own fire protection areas¹⁹. On the Mainland there is the Northside and Malaspina departments, while each island has their own fire departments. None of these halls have dedicated wildfire suppression equipment. The Region currently has one regional structure protection unit (SPU) trailer which is housed at the qRD's works yard and was staged more centrally at the BCWS Fire Base in 2024. A second SPU was developed on Texada Island and generally located in Gillies Bay.

The Northside Volunteer Fire Department (Figure 4) has two active fire halls and a roster of 25-30 volunteer paid-on-call firefighters, which include one Deputy Officer and a Chief Officer.

The Malaspina Volunteer Fire Department has two active fire halls with generally over 25 volunteer paid-on-call firefighters including one Deputy Officer and a Chief Officer. All departments have a range of engines and firefighting equipment.



Figure 4. Northside Fire Hall

The Savary Island Volunteer Fire Department has between 12 and 20 volunteer firefighters and first responders. There is one large structural fire engine, but the community is better served by their three smaller wildland equipped water tenders. Road turn arounds and access is quite difficult and limited on Savary, therefore smaller and more maneuverable vehicles can improve response times. During medical emergencies the fire engine cannot go faster than five km/hr due to potholes in the road.

¹⁹ Qathet Regional District. "Fire Protection | Fire Protection Services | Qathet Regional District." Qathet Regional District, February 21, 2023. <https://www.qathet.ca/services/emergency-services/fire-protection-services/>.



Figure 5. Savary Island firetruck

Texada Island is serviced by the Gillies Bay Volunteer Fire Department and Van Anda Volunteer Fire Department. These departments work closely together, enabled through an Automatic Aid Agreement. This agreement enables both departments to deploy immediately to a fire in either protection area. Given the isolation and capabilities of these departments, they frequently respond to wildfires on Texada Island much more quickly than the BCWS.

Gillies Bay Volunteer Fire Department has twenty volunteer firefighters. GBVFD has a 2015 pumper (1000 gal. capacity), a 2002 tender (1700 gal. capacity), and a 1989 pumper (800 gal. capacity) that is used as backup vehicle and also carries most of the wildfire equipment.

The Lasqueti Island Volunteer Fire Department is staffed by a dedicated crew of volunteers, including: first responders, fire fighters, emergency response coordinators, coordinators and administrative assistants. Public awareness of wildfire safety is made available on the Lasqueti website²⁰. Lasqueti has 2 engines and no structure protection unit trailer.

²⁰ "Fire Safety | Lasqueti Island," n.d. <https://lasqueti.ca/fire-safety>.

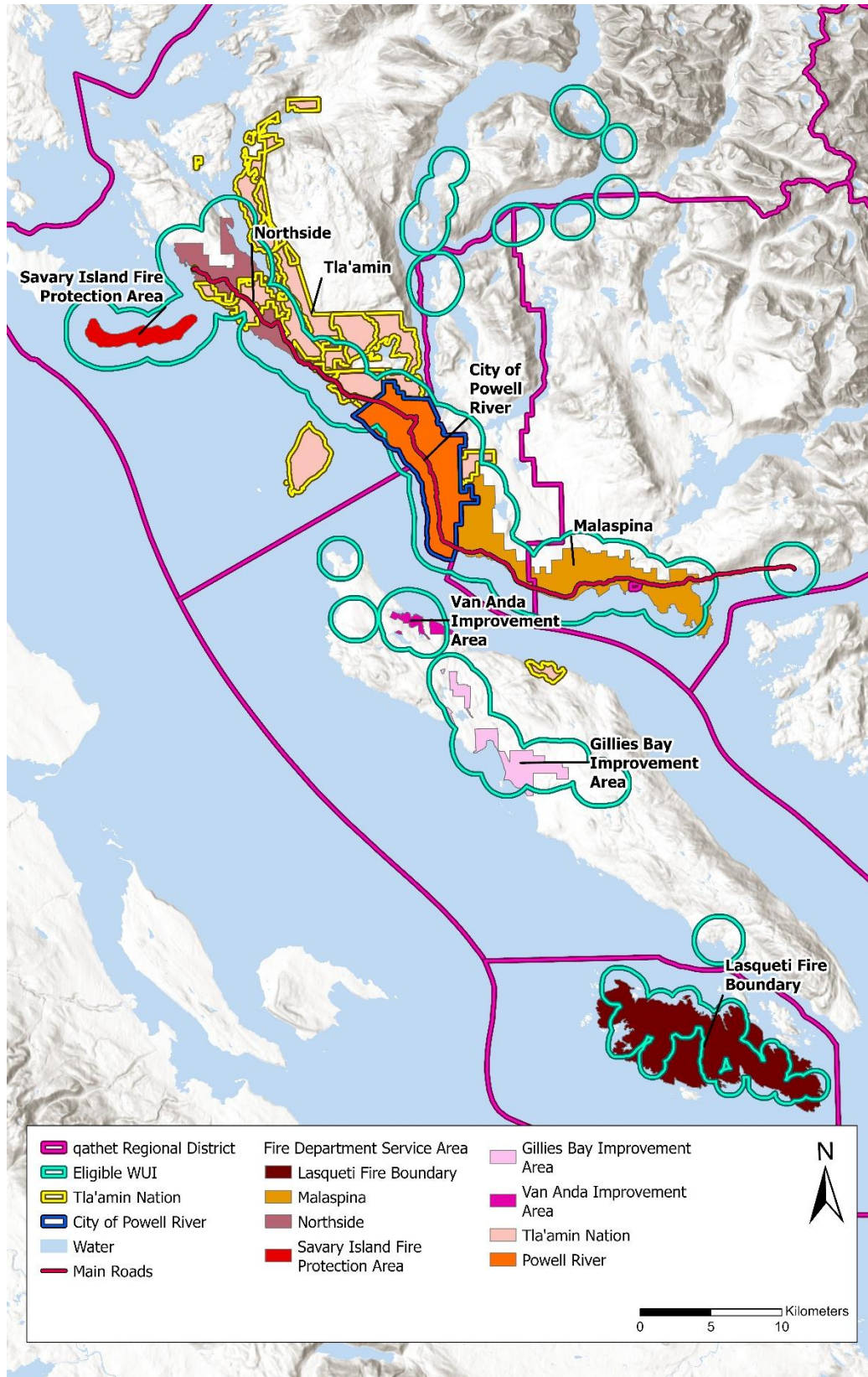


Figure 6. Fire Protection Zones.

4.5 Electrical Infrastructure and Supply

Electricity is critical to the functioning of communities, particularly during an emergency response. Power lines pose both an ignition concern, through vegetation falling onto power lines and igniting wildfires, as well as a safety concern for first responders. No wildfire can be safely actioned near a powerline until the lines have been de-energized, as per BC Hydro policy. Large wildfires often require shutdowns of entire networks, which can complicate emergency response when support facilities lack backup power.

BC Hydro has a comprehensive vegetation management program to reduce the likelihood of trees falling on powerlines. Crews regularly assess right of ways, identify trees that may require proactive removal, and coordinates removal of these trees. BC Hydro also dedicates staff in the event of a wildfire for strategically de-energizing lines to ensure first responder staff safety.

Evolugen is a private power company that has right of way parallel with the BC Hydro transmission lines. Evolugen is in the process of creating their wildfire risk mitigation plan that will be up to industry standards. The length and width of these right of ways could act as a substantial fuel free area without forest canopy. When managed properly to maintain invasive species like Scotch broom and other tall vegetation both of these rights of ways could be effective fuel free areas.

Most of the electricity within the Region is provided by BC Hydro, however there are some exceptions, particularly on the island communities of Savary and Lasqueti. Mainland power is provided through transmission and distribution power poles. Many of these are wooden poles that access the rural communities such as Lund and surrounding areas. There is also a wide transmission line that runs east to west and parallels the highway from the airport all the way to Saltery Bay. BC Hydro has an internal vegetation management program to reduce vegetation interference with powerlines, as well as to limit fuel accumulations in their transmission rights-of-way (ROW). These ROWs benefit the Region by disrupting vegetation that might carry wildfire. However, the flammable invasive Scotch Broom is extensive within these ROWs and is discussed further in the section 4.1.5 Forest Health section of this document.

Savary Island and Lasqueti Island are both completely off-grid and rely on independent energy sources. Residents primarily use solar panels, wind turbines, and generators to meet their electricity needs.

4.6 Cultural Values

Given the long history of Indigenous use, the land within the Region has a high density of important cultural sites. These include culturally modified trees, grave sites, fisheries, and water sources.

Ahgykson (Harwood Island) is a culturally significant site for the Tla'amin Nation, used traditionally for fishing, hunting, and gathering. It holds sacred sites and has been a venue for cultural ceremonies and seasonal camps. The island features prominently in Tla'amin oral histories and legends, representing their ancestral lands and heritage. Contemporary efforts focus on cultural revitalization, environmental stewardship, and educational programs to preserve and celebrate Tla'amin culture and traditions.

Cultural values are a very high priority for protection within the Region. Many of these sites are highly sensitive, and thus a complete mapping of them is not appropriate in a public facing document such as the CWRP. In the event of a wildfire, the Tla'amin Nation should be included in value protection planning by the BCWS to ensure these values are adequately protected.

Cultural burning is a practice that Indigenous communities have been using to manage the land for millennia. Working with local First Nations and BCWS to bring fire back to the landscape in the form of low intensity cultural burns will mitigate wildfire risk, while respecting reconciliation efforts.

4.7 Environmental Values

There are a multitude of important environmental values within the Region's AOI and WUI. This includes protected areas, sensitive watersheds, and species and ecosystems at risk including old growth management areas (OGMAs) and wildlife habitat areas (WHAs). Wildfire has the potential to significantly impact these sensitive environmental values.

Protected Areas

These areas are of significant environmental value to society and provide many ecosystem benefits. They are also a major land base within the Region (Figure 7). Protected areas include Duck Lake protected area and Lasqueti island ecological reserve. There are several areas that require special consideration if vegetation management were to occur in the Region outside of the WUI. Plans for sustaining elements of biodiversity (e.g. OGMA's, WHA's) have been developed for 18 landscape units.²¹

²¹ Ministry of Forests. (2019, July 2). *Sunshine Coast Landscape Unit Plans - Province of British Columbia*. <https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/south-coast-region-plans/sunshinecoast-lu>

Watersheds

There are several watersheds within the Region. Tla'amin and the qRD both have watershed plans to guide their management. These watersheds include Haslam Lake and Lang Creek,²² as well as the Sliammon Creek watershed, The Okeover Creek watershed, the Okeover-Theodosia Inlets watershed and the Theodosia River watershed.²³ Broadly speaking, management of these watersheds focuses on preserving water quality and ecosystem health as it relates to water supply. Full detail descriptions can be found in the Watershed protection and management plans.

Concerns have been raised about the health of the Theodosia River watershed area, particularly within vegetated areas near water sources. Tla'amin government is actively collaborating with the Ministry to address these issues. Rise in temperatures are affecting flora and fauna negatively in recent years²⁴. Short-term action items that have been identified to mitigate immediate concerns, need to continue to be implemented as they relate to forest health and resiliency to wildfire. The reduction in drought conditions, rising water temperatures and ensuring the river's ecosystem remains stable are all important variables in minimizing variable wildfire conditions.

²² Haslam Lake and Lang Creek Integrated Watershed Management Plan. (1999). In *Haslam Lake and Lang Creek Integrated Watershed Management Plan [Report]*. <https://prcommunityforest.ca/wp-content/uploads/2017/04/HASLAM-LAKE-LANG-CREEK-IWMP-FINAL-REPORT-for-Website.pdf>

²³ Chapman, K., & Patrick, R. (2021). TLA'AMIN WATERSHED PROTECTION PLAN. In *Tla'amin Nation, Tla'amin Nation*. https://www.tlaaminnation.com/wp-content/uploads/2021/08/TLAAMIN-WATERSHED-PLAN_MAR-30-2021-FINAL.pdf

²⁴ Chapman, K., & Patrick, R. (2021). TLA'AMIN WATERSHED PROTECTION PLAN. In *Tla'amin Nation, Tla'amin Nation*. https://www.tlaaminnation.com/wp-content/uploads/2021/08/TLAAMIN-WATERSHED-PLAN_MAR-30-2021-FINAL.pdf

Species at Risk

Species and ecosystems at risk are legally protected under various federal and provincial acts, including the *Species at Risk Act*,²⁵ *Fisheries Act*,²⁶ and *Migratory Birds Convention Act*,²⁷ as well as the *Wildlife Act* (1996) and *Forest and Range Practices Act* (2002). The Conservation Data Centre (CDC) provides crucial data on plants, animals, and ecosystems at risk, categorizing them as Red, Blue, or Yellow Listed based on their conservation status²⁸. Red-Listed species are of particular concern, as they are at risk of being lost; within the WUI of the qRD, this includes vascular plants, ecological communities, vertebrate animals and invertebrate animals. These species and ecosystems are listed in Table 6.

When conducting future site-level vegetation management activities and operational treatment plans, it is vital to follow best management practices for these at-risk species and their habitats. Prior to implementing any wildfire risk reduction activities, consulting with a Registered Professional Biologist or other qualified professionals may be necessary to evaluate potential impacts and guide effective treatment strategies.

²⁵ *Species at Risk Act*, Statutes of Canada 2002, c. 29. <https://laws.justice.gc.ca/eng/acts/s-15.3/>

²⁶ *Fisheries Act*, Revised Statutes of Canada 1985, c F-14. <https://laws-lois.justice.gc.ca/eng/acts/f-14/>

²⁷ *Migratory Birds Convention Act*, Statutes of Canada 1994 c.22. <https://laws.justice.gc.ca/eng/acts/M-7.01/>

²⁸ "Search Criteria," n.d. <https://a100.gov.bc.ca/pub/eswp/search.do?method=change>.

Table 6. Provincial Publicly Available Occurrences of Red, Blue, and Yellow-Listed species Identified and Recorded Within the qRD WUIs.

Scientific Name	English Name	BC List	Survey Site	Element Type
<i>Abies grandis</i> / <i>Tiarella trifoliata</i>	grand fir / three-leaved foamflower	Red	Cook Bay, Texada Island	Ecological Community
<i>Pinus contorta</i> var. <i>contorta</i> / <i>Juniperus communis</i> - <i>Arctostaphylos columbiana</i>	shore pine / common juniper - hairy manzanita	Red	Cranberry Lake	Ecological Community
<i>Cercyonis pegala incana</i>	Common Wood-nymph, <i>incana</i> subspecies	Red	Larsons Landing	Invertebrate Animal
<i>Pseudotsuga menziesii</i> - <i>Arbutus menziesii</i>	Douglas-fir - arbutus	Red	Lasqueti Island	Ecological Community
<i>Pseudotsuga menziesii</i> / <i>Mahonia nervosa</i>	Douglas-fir / dull Oregon-grape	Red	Lasqueti Island	Ecological Community
<i>Picea sitchensis</i> / <i>Rubus spectabilis</i> Very Dry Maritime	Sitka spruce / salmonberry Very Dry Maritime	Red	Lois River	Ecological Community
<i>Apantesis complicata</i>	Island Tiger Moth	Red	Savary Island, Duck Bay	Invertebrate Animal
<i>Artemisia campestris</i> - <i>Festuca rubra</i> / <i>Racomitrium canescens</i>	northern wormwood - red fescue / grey rock-moss	Red	Savary Island, Goose Pasture	Ecological Community
<i>Carex macrocephala</i> Herbaceous Vegetation	large-headed sedge Herbaceous Vegetation	Red	Savary Island, Indian Point	Ecological Community
<i>Lathyrus littoralis</i>	silky beach pea	Red	Savary Island, Indian Point	Vascular Plant
<i>Leymus mollis</i> ssp. <i>mollis</i> - <i>Lathyrus japonicus</i>	dune wildrye - beach pea	Red	Savary Island, Indian Point	Ecological Community
<i>Camissonia contorta</i>	contorted-pod evening-primrose	Red	Savary Island, Southwest Side	Vascular Plant
<i>Thuja plicata</i> / <i>Symphoricarpos albus</i>	western redcedar / common snowberry	Red	Slammon Creek, From Mouth To 2.9 Kilometres Upstream	Ecological Community
<i>Abies grandis</i> / <i>Mahonia nervosa</i>	grand fir / dull Oregon-grape	Red	Texada Island, Comet Mountain	Ecological Community
<i>Gasterosteus</i> sp. 4	Paxton Lake Limnetic Stickleback	Red	Texada Island, Paxton Lake	Vertebrate Animal

Scientific Name	English Name	BC List	Survey Site	Element Type
Gasterosteus sp. 5	Paxton Lake Benthic Stickleback	Red	Texada Island, Paxton Lake	Vertebrate Animal
Chrysemys picta pop. 1	Painted Turtle - Pacific Coast Population	Red	Texada Island, Priest Lake	Vertebrate Animal
Gasterosteus sp. 17	Vananda Creek Benthic Stickleback	Red	Texada Island, Priest Lake	Vertebrate Animal
Brachyramphus marmoratus	Marbled Murrelet	Blue	Goat Island (Powell Lake)	Vertebrate Animal
Pyrola aphylla	leafless wintergreen	Blue	Lasqueti Island, Trematon Creek	Vascular Plant
Populus trichocarpa - Alnus rubra / Rubus spectabilis	black cottonwood - red alder / salmonberry	Blue	Lois River, Tributary To	Ecological Community
Ardea herodias fannini	Great Blue Heron, fannini subspecies	Blue	Powell River	Vertebrate Animal
Rana aurora	Northern Red-legged Frog	Blue	Saltery Bay	Vertebrate Animal
Rhododendron groenlandicum / Kalmia microphylla / Sphagnum spp.	Labrador-tea / western bog-laurel / peat-mosses	Blue	Texada Island, Cranby Lake	Ecological Community
Allium amplexans	slimleaf onion	Blue	Texada Island, Mouat Islands	Vascular Plant
Myrica gale / Carex sitchensis	sweet gale / Sitka sedge	Blue	Texada Island, Spectacle Lake,	Ecological Community
Woodwardia fimbriata	giant chain fern	Blue	Texada Island, Vananda	Vascular Plant

4.8 Collaborators

Many different collaborators exist within the qRD that could play an integral role in protecting resource values within the Region. Key members from each of these organizations should be involved in the FireSmart/Emergency planning committee.

The key takeaway from this section is working together to increase user awareness, from an education and fuel management perspective, to reduce the ignition potential within all of the different land tenures and land uses. Whether parks, community forests, or forestry cutblocks, these areas are all accessible to human recreation and the increased risk of human ignitions. Any wildfire risk initiatives that occur within land managed by collaborators will require close collaboration with the relevant tenure holder.

4.8.1 Provincial, City and Regional District Parks

The City of Powell River and the qRD are responsible for managing many municipal and regional parks. These parks are of significant social and environmental value for residents within the Region. The park areas are highly trafficked, with a higher likelihood of human caused ignitions. It is important for the parks departments to understand where wildfire hazard exists and how treating and maintaining trails, and FireSmarting key structures could help reduce hazard in high traffic areas.

City Parks Department staff are equipped with limited wildfire fighting tools but have minimal wildfire training for initial response. Local fire departments provide fire response within these City parks. Many of the City's parks comprise ballfields of mowed irrigated grass. Ensuring grass is mowed and irrigated will maintain these areas as a very low fire hazard.

Some of the Regional District parks include campgrounds which are heavily used and have a significant risk of human caused ignition during peak summer wildfire conditions. All qRD parks, with the exception of Haywire Bay, are within the jurisdiction of a local fire department. The more remote Haywire Bay would require BCWS assistance for suppression.

There are numerous provincial parks within the Region. These areas are of ecological value and where human values exist, such as campgrounds and critical infrastructure. FireSmarting should be considered by these organizations as they are heavily used in the summer, with an elevated risk of human caused wildfire ignitions. Several popular parks do not fall within local fire protection boundaries, and would require BCWS to lead fire response. See the locations of all parks in Figure 7.

4.8.2 Powell River Community Forest

A community forest is a provincial area-based tenure managed by a local government, First Nation, or community-held organization for the benefit of the entire community. At its core, community forestry is about local control over the benefits offered by local forests. Communities practice sustainable forestry that provides local forest employment. This innovative form of forest management generates economic, social, cultural, and environmental benefits for local communities, the province, and the environment.

The Powell River Community Forest (PRCF) general tenure is 7,100 ha, with a 35,000 m³/yr annual allowable cut. The PRCF consists of a board of nine, with one manager and part time support staff. Contractors are hired as needed. Given the large tenure, and its local importance, the PRCF is an important value in the Region.

The existing wildfire risks and vulnerabilities specific to the PRCF that have been identified are human caused fires. This risk is increasing with recreational use in the area and unauthorized camping in the community forest. Identified concerns include campfires, burning garbage and vandals burning vehicles. To address this issue, the PRCF has been deactivating and/or blocking roads to limit human activity. Additionally, they have planted deciduous stands adjacent to the airport to reduce wildfire risk. The PRCF owns a trailer unit that can be used to support fire suppression, and a suitable truck outfitted for wildland firefighting. Local fire departments are encouraged to use it whenever necessary. The PRCF are also looking into procuring a fire fighting apparatus for interface fires. The PRCF avoids operating during the main part of the wildfire season to reduce operational ignition sources and to ensure compliance with the Wildfire Act.²⁹

PRCF has also brought fire danger/risk information to outdoor and recreation user group meetings with information on the fire danger system and how it relates to their trail maintenance activities. The PRCF disposed of all post harvest debris up until the boiler at the pulp mill closed in 2021. However, the closure of this facility has made debris management extremely challenging throughout the Region, leading to fuel accumulations in recently cleared areas. A mobile burner has been purchased to aid in debris reduction; however, this is not operable in all portions of the tenure.

²⁹ BC Wildfire Act, Statutes of British Columbia 2004 c. 31.

https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/04031_01

4.8.3 Industry Partners

The forestry industry is a large provider of economic and social values for the Region. There are several large forest industry operators in the Region including Western Forest Products and Thichum Forest Products. Forestry activities can also increase wildfire risk, through changing fuel types and increased flammable debris.

Recently cleared areas can have an elevated wildfire risk due to debris accumulations post-harvest, and the drying of these fuels from sun and wind exposure. Debris management is a major challenge to operators in the area, due to a lack of facilities for disposing of this biomass. The forestry roads developed to access these areas also increase human activity and likelihood of ignition. During harvest operations, equipment may inadvertently ignite a wildfire, even when in compliance with the *Wildfire Act*. Local BCWS staff have noted that many wildfires occur within cutblocks in the Region. Cutblock fires are particularly concerning, as they may spread to adjacent timbered areas and cause more significant wildfires that impact nearby communities and the timber supply.

The forest landscape changes as cut blocks are created throughout the landscape, removing an older forest type very likely exhibiting lower wildfire threat. In addition to removing the older trees, the lack of shade from the overstory increasing the solar radiation and wind exposure resulting in much drier fuels compared to those in standing coastal forests. This can result in an elevated wildfire risk, particularly when slash is not disposed of in accordance with the *Wildfire Act*. In addition, these cutblocks are reforested generally with pure conifer trees which slowly self thin over time – which results in a slightly higher wildfire threat than if the older forest stand was originally left intact. In contrast, well planned harvesting activities and silviculture, such as stand tending or fuel management, stocking blocks with deciduous trees and fewer conifers, can result in decreased wildfire risk.

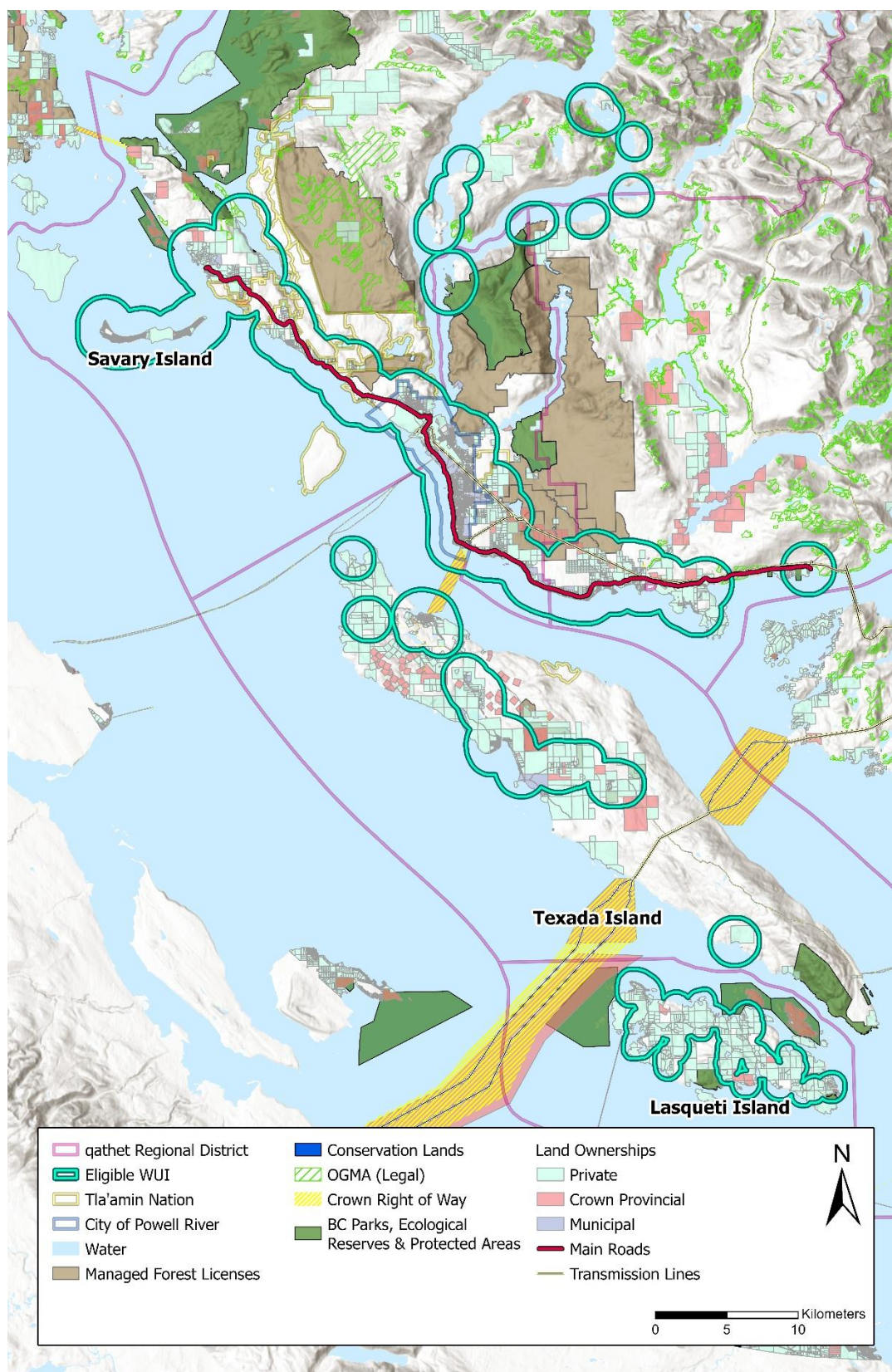


Figure 7. Collaborator tenure map

5 Wildfire Risk Assessment

A wildfire risk assessment provides a decision support tool for determining the most appropriate wildfire risk reduction activities and opportunities to increase community resiliency. The wildfire risk profile of each community is different, and capturing this wildfire risk accurately is critical to ensuring mitigation actions reflect the wildfire risk profile.

In the context of a Community Wildfire Resiliency Plan (CWRP), wildfire **risk** has a specific definition, and is different from the similar term wildfire **threat**. Wildfire threat is ability of a wildfire to ignite, spread, and consume organic material (trees, shrubs, and other organic materials) in the forest. Wildfire threat describes the potential wildfire behaviour, or wildfire environment, in an area (see Figure 8). The major components used to define wildfire threat are fuel, weather, and topography, also known as the wildfire environment. Wildfire threat is simply put, the probability of a vegetated area to support severe wildfire.



Figure 8. The wildfire behaviour triangle.

Wildfire risk combines wildfire threat with the potential consequences. Wildfire risk is the likelihood of severe wildfire having impacts on values. Therefore, to understand wildfire risk, we must first understand wildfire threat, and the wildfire environment that drives it.

Wildfire danger, or hazard, is an additional technical term which describes the potential for severe wildfire at a moment in time, usually summarized daily during wildfire season. Wildfire danger is useful for estimating the daily likelihood of wildfire ignition and spread, which can in turn be used to guide wildfire preparedness and operational planning. Wildfire danger is highly variable, and thus less useful for long term planning. For a complete discussion of wildfire danger, see Canadian Forest Fire Danger Rating System (CFFDRS) below.

5.1 Wildfire Environment

The three main components that drive wildfire threat are topography, vegetation (potential fuel for wildfire), and weather. Together these impacts interact to influence the potential wildfire behaviour (wildfire threat) in a vegetated area.

The climate, fuel types, geography, and topography of the qRD largely minimize the risk of distant wildfires travelling to the community. The focus for the region must be to recognize the risk of ignitions within the Wildland Urban Interface. Minimizing the risk within the WUI through fuel treatments, maintenance of existing fuel breaks, promotion of FireSmart principles in all developments, and appropriate fire response resources and training are important wildfire planning measures for this region.

5.1.1 Topography

Topography is a landscape component that can influence fire behaviour. Slope position and aspect can affect the temperature, solar intensity, fuel moisture, and relative humidity as a consequence of varying degrees of solar radiation. Slope affects local wind patterns, with steeper slopes facilitating greater up-slope wind speeds during the day, and fuels upslope being closer to flames during a fire. Warmer aspects i.e. south facing in the Northern Hemisphere and steeper slopes increase the rate of spread of a fire. Fire that spreads faster is more difficult to control, making potential values situated on upper slopes more vulnerable. Topography can also influence wind patterns, particularly on the coast of BC, where “outflow” weather conditions play a significant role in wildfire behaviour. Summer outflow conditions occur when warm, dry air is funnelled from BC’s interior through valleys to the coastal regions.

The topography within the Region is diverse, driven by its position on the coast and its proximity to the coast mountain ranges. The Region's topography is characterized by a mix of coastal and inland terrains, generally characterized by terrain sloping moderately up from coastlines. Texada Island has terrain reaching 700m, and on the mainland, there are multiple peaks reaching over 1000m.

With the exception of the steep slopes of Texada Island, most islands in the qRD have slopes that are gentle to moderate. On the mainland, multiple valleys are present, with steep terrain. Steep, south facing slopes are common, and are known to increase wildfire spread.³⁰ Most slopes within the WUI are moderate. A variety of topography is present throughout the region and the specific location’s topography in any fire will play a significant role in determining the wildfire behavior,.

Figure 9 shows a shade relief topographic map of the Region.

³⁰ *Change, Environment and Climate. “Wildfire Science.” Environment and Climate Change, n.d.*
<https://www.gov.nt.ca/ecc/en/services/wildfire-operations/wildfire-science#:~:text=On%20the%20uphill%20side%2C%20the,increases%20the%20rate%20of%20spread.>



Figure 9. Map showing topography within the Region.

5.1.1 Vegetation (Fuels)

Vegetation is the fuel that feeds and grows wildfire and as such is referred to as fuel(s). Fuels and fuel types generally refer to the loading, size and shape, arrangement (horizontal and vertical), compactness, chemical properties, and moisture content within organic materials. In a forest environment, the focus is primarily on woody fuels - primarily smaller diameter fuels that dry out quickly.

5.1.2 Biogeoclimatic Ecosystem Classification (BEC) Zones

Understanding the ecosystems of an area provide insight on the fuel conditions in the area, as well as the historical wildfire regime. The vegetation (fuels) within any given area of British Columbia can be summarized using the provincial Biogeoclimatic Ecosystem Classification (BEC) system.³¹ The BEC system in BC describes and categorizes ecological zones by vegetation, soils, and climate. Regional subzones are derived from relative precipitation and temperature. Subzones may be further divided into variants based upon climatic variation and the resulting changes in the vegetative communities. By understanding the vegetative communities of an area, we can better predict the natural disturbance regime of those ecosystems, including the historical wildfire intensity and severity. regime.

The WUI for the Region encompasses several distinct BEC subzones, each characterized by unique climatic conditions that influence local ecosystems, summarized in Table 7.

Table 7. BEC zones within the WUI.

BEC Zone	Hectares	% of total area
CDFmm	22,450	47%
CWHxm1	18,523	39%
CWHdm	7,002	15%
CWHvm2	51	0.1%
MHmm1	60	0.1%

³¹ "BEC WEB," n.d. https://www.for.gov.bc.ca/hre/becweb/system/how/index.html#basic_concepts.

The Coastal Douglas-fir Moist Maritime (CDFmm) subzone is the most common subzone within the WUI for the Region, found near the coast and on the islands of the Region. This subzone's climate is characterized by warm, dry summers and mild, wet winters, with very long growing seasons.³² However, water deficits are common, particularly during summer months. Urban development within this limited geographic area has led to significant habitat disruption and degradation, both in the Region and throughout BC.

Coastal Western Hemlock Very Dry Maritime (CWHxm1) is the second most common subzone within the WUI, located at slightly higher elevations and inland of the CDFmm zones. This subzone shares the warm, dry summer and moist, mild winter pattern, with similar growing seasons and water deficit issues as seen in the CDFmm. It stands out as Canada's most fertile forest region, particularly in its drier parts where conifer growth rates can be very high.

The Coastal Western Hemlock Dry Maritime (CWHdm) subzone is the most common subzone in coastal areas of the south coast, but occupies only a small portion of the WUI. This is most common in areas further inland than the CWHxm1. This subzone's climate is characterized by warm summers that are moister than the CDFmm and CWHxm1, as well as moist, mild winters that rarely see snow. Moisture deficits in this subzone are less frequent than in the CDFmm and CWHxm1.

Although there is considerable variety in BEC zones within the WUI, these zones all share quite similar characteristics that are relevant to wildfire risk. These areas have long, moist growing seasons, which are very productive, leading to dense forests with high levels of biomass. Moisture deficits are very common, particularly during the summer when extended droughts are common. Within these ecosystems, there is a high degree of fuel available for wildfire, and this fuel can become exceptionally dry during typical summer conditions.

³² Canadian Forest Fire Behaviour Prediction System. "COASTAL FIRE WEATHER ZONE Best Management Practice Guide for Fuel Treatment." FUEL MANAGEMENT PROVINCIAL OPERATIONS, n.d. https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/coastal_fire_weather_zone_for_review.pdf.

5.1.1 Natural Disturbance Types

Ecosystems in BC are classified into five Natural Disturbance Types based on the frequency and severity of disturbances, such as wildfires, windstorms, landscapes, and insects.³³ Wildfires are a primary agent of disturbance in most ecosystems in BC. These categories help us understand how our natural landscapes evolve and function over time. The BEC zones are classified as *Natural Disturbance Type 2 – Ecosystems with infrequent stand-initiating events*. In these zones, wildfires occurred with relatively low frequency, occurring an average of once every two hundred years (Figure 14). These fires were moderate sized, between 20 to 1,000 hectares, and often patchy with large unburnt areas found throughout. As a result, post-wildfire forests also had a patchy composition, with a wide variety of ages, sizes, densities, and species. Human activity including wildfire suppression has significantly reduced these types of wildfires in the last fifty years. However, despite the lack of recent large wildfires within the Region, it is important to remember that large wildfires (> 1000 ha) can naturally occur.



Figure 10. Low elevation Coastal Douglas fir forest near Powell River

³³ BC Ministry of Forests. *Forest Practices Code Biodiversity Handbook*. 1995. King's Printer for British Columbia.
<https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/frep/frep-docs/biodiversityguidebook.pdf>

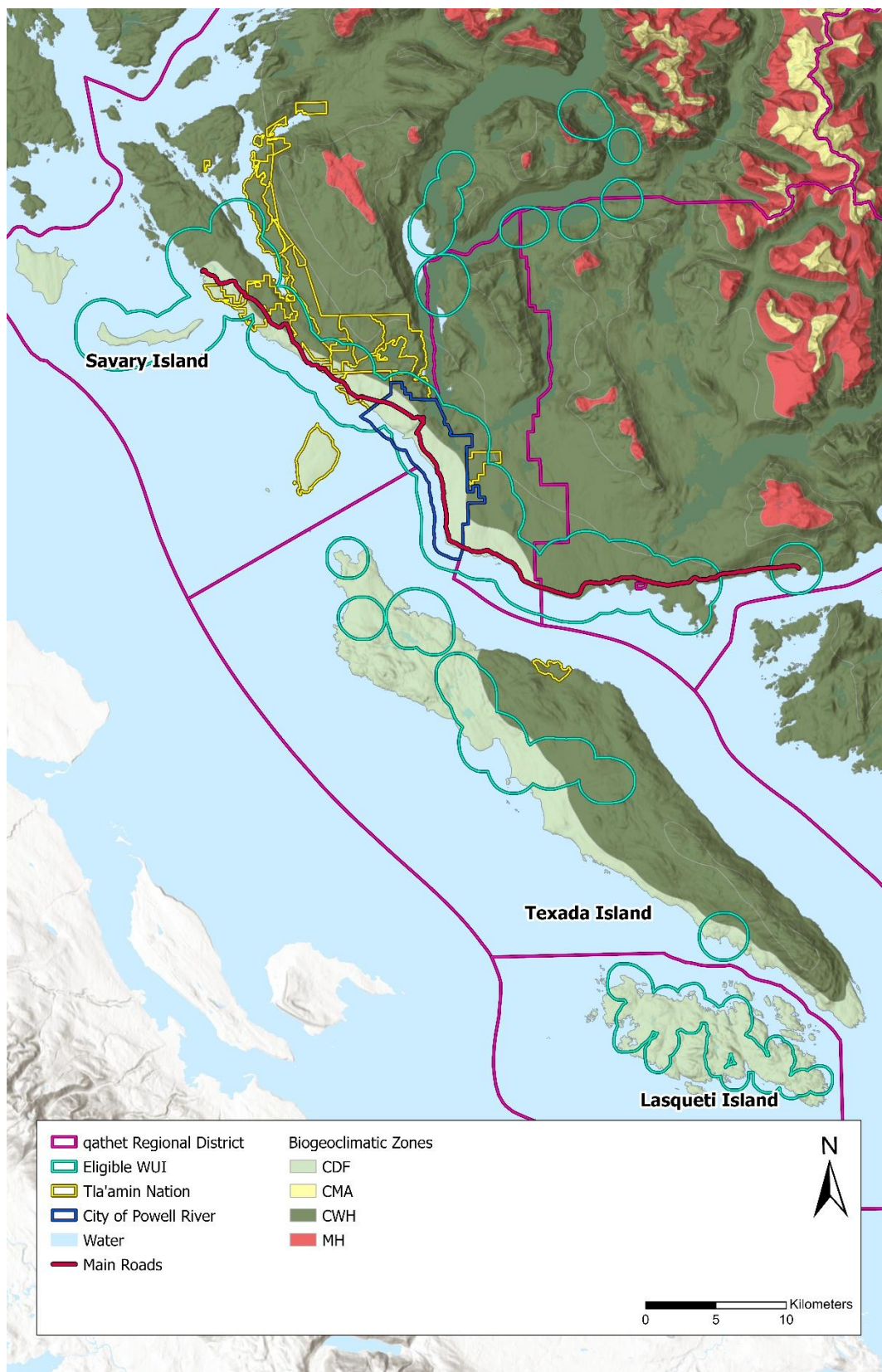


Figure 11. Biogeoclimatic (BEC) Zones for the Region.

5.1.2 Fuel Types

The Canadian Forest Fire Behaviour Prediction (FBP) System outlines five major fuel groups and sixteen fuel types modeled based on characteristic fire behaviour within common boreal vegetation under defined weather conditions³⁴. In general, fuel types are defined in the FBP System by overall vegetation structure, dominant overstory species, and understory, ladder fuel, and forest floor characteristics. Fuel typing is used to aggregate forests into similar categories to estimate potential wildfire behaviour.

Fuel typing is a subjective process, as many of the vegetation communities of BC are not suitably represented by the boreal forest-based FBP fuel types. Therefore, the most appropriate fuel types were assigned based on best-available scientific research and information, professional experience, and practical knowledge. In BC, there are accepted fuel types used to align forests with the best representative FBP fuel type.³⁵

Fuel types are a key driver of wildfire threat, and accurately capturing fuel type is crucial to ensuring the projected wildfire threat is accurate. Therefore, determining fuel types is a critical component of this CWRP. This process involves reviewing the latest BCWS fuel types map, a map driven by remote sensing with minimal ground truthing. Inaccuracies are very common. During the CWRP, these inaccuracies are identified by completing site visits throughout the community, corrected as necessary using study plots, and a new and accurate fuel type map is created for use in identifying local wildfire threat (see 5.2 Wildfire Threat). Table 8 summarizes the most common fuel types in the WUI and their attributes.

Figure 12 shows where fuel types within the WUI are located. The most common fuel types within the Region's WUI are C-5 (32.3%), D-1/2 (10.3%), and M-1/2 (10.2%), with the remainder being water, non-fuel (non-vegetated or private land with no available information), and S-1 or S-3 (logging slash). C-5 is the most prevalent fuel type in the Region. C-5 is characterized by mature cedar/Douglas overstory with large vertical gaps between surface and crown fuels. This conifer fuel type is quite resilient to crown fire, but understory fires are still possible. The C-3 forests are considered the most hazardous fuel types identified within the WUI, with high likelihood of crown fire and spotting potential. This is due to the higher density and smaller fuel strata gap between surface and crown fuels. However, this fuel type is rare in the WUI, primarily in young forests recovering from disturbance. M-1/2 forests generally are moderately hazardous, largely depending on the percent composition of conifers in the overstory and understory. The D-1/2 fuel type is considered low hazard due to high moisture retention in foliage. Slash fuel types are less common in the WUI, but have been noted as challenging by BCWS for suppression.

³⁴ Natural Resources Canada. Canadian Wildland Fire Information System: Canadian Forest Fire Danger Rating System (CFFDRS). <https://cwffis.cfs.nrcan.gc.ca/background/summary/fdr>

³⁵ Perrakis, D. and G. Eade. 2015. British Columbia Wildfire Fuel Typing and Fuel Type Layer Description 2018 Version. BC Wildfire Service, Ministry of Forests, Lands, and Natural Resource Operations. <https://cfs.nrcan.gc.ca/publications?id=39432>

Table 8. Fuel types within the WUI and their characteristics.

Fuel Type	Proportion of total WUI (%)	FBP/ CFDDRS Description	AOI Description	Wildfire Behaviour Under High Wildfire Danger Level	Fuel Type- Crown Fire/ Spotting Potential
C-5	32.3%	Mature stands of red pine and eastern white pine. The understory is of moderate density of conifers and/or deciduous shrubs.	Mature, low-density coastal vegetation communities of mature Douglas-fir, western hemlock and/or western redcedar. High crown base height and high deciduous shrub component. Often accompanied by dead woody fuel accumulations.	Low potential for active crown fire. Under drought conditions, fuel consumption and fire intensity can be higher due to dead woody fuels	Low-Moderate
D-1/2	10.3%	Pure aspen stand (leafless and green). A conifer understory is noticeably absent.	Deciduous stands with greater than 80% deciduous overstory composition.	Always a surface fire, low to moderate rate of spread and fire intensity	Low
M-1/2	10.2%	Boreal mixedwood (leafless and green) comprised of various coniferous and deciduous species.	Moderately well-stocked mixed stand of conifers (20-80%) and deciduous species, low to moderate dead, down woody fuels.	Surface fire spread, torching of individual trees and intermittent crowning, (depending on slope and percent conifer)	<26% conifer (Very Low); 26-49% Conifer (Low); >50% Conifer (Moderate)
C-3	1.0%	Mature jack or lodgepole pine. Stands that have matured at least to the stage of complete crown closure.	Fully stocked, late young forest, crowns separated from the ground. Understory conifer layers are often present.	Surface and crown fire, low to very high fire intensity and rate of spread	High
S-3	0.2%	Coastal Cedar-Hemlock-Douglas-fir Slash coniferous logging debris	Slash from clearcut logging; mature to overmature cedar, hemlock, or Douglas-fir stands.	No crown fire possible, low rate of spread.	N/A

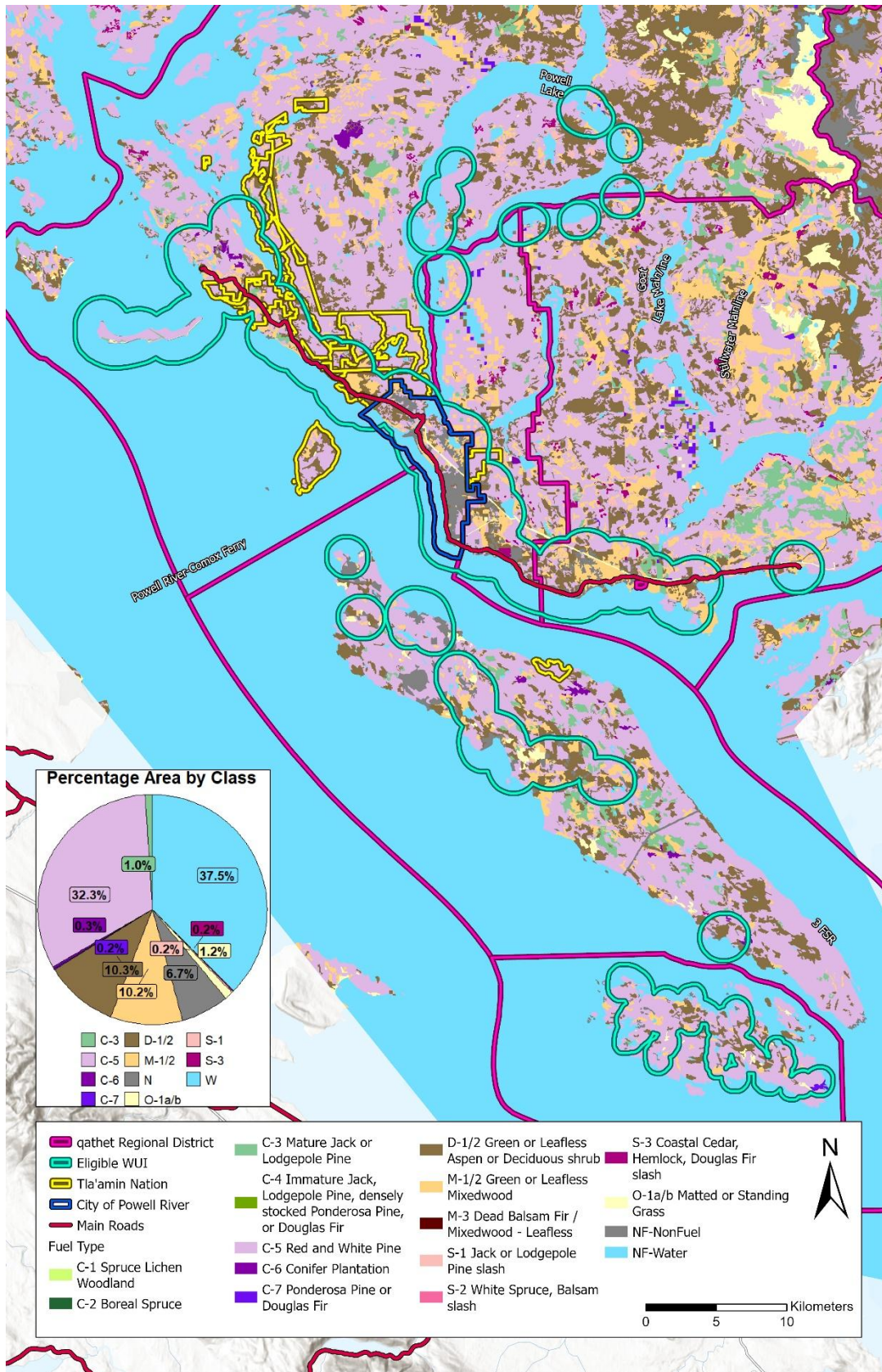


Figure 12. Fuel Types Within the WUI And Surrounding Areas.

5.1.3 Forest Health

Forest health issues and invasive species can contribute to fuel loading by causing or increasing tree mortality, which in turn leads to dead fuel throughout the forest. Dead fuels, particularly when elevated, are drier than live fuels and burn more readily. Stressed vegetation is more susceptible to pest impacts, further increasing mortality and fuel loading³⁶.

Hemlock Dwarf Mistletoe is a parasitic plant that primarily attacks western hemlock trees. Mistletoe affects the growth of the tree, leading to stem deformities called “witches’ brooms.” These deformities sometimes lead to mortality, and the breaking off of branches that support the brooms makes the tree susceptible to fungi and decay.

Drought is a major cause of mortality and stress in trees within the WUI. This is typical of the ecosystems within the Region and the south coast of BC in general, but has been increased due to several exceptionally warm and dry summers in the past five years. Drought can lead to mortality in the trees present in and around the AOI, as well as stress vegetation and increase vulnerability to insect attack or disease, causing further mortality.

Scotch Broom is an invasive species found throughout the Region³⁷. This is particularly problematic in the ROWs found in the region, where Scotch Broom is widespread. There is limited formal research on the fire behaviour in Scotch Broom, but the BCWS has indicated that this can support vigorous wildfire behaviour. The invasive nature of this species would mean a multi-year endeavour of abatement and mitigation. An Invasive management strategy was developed in 2017 to manage Scotch Broom,³⁸ however management success has been limited.

Root Rots are very common in CDF forests. This disease leads to cedar and fir being more susceptible to fire and other stand replacing events such as wind storms. This can cause increased fuel loading which increases wildfire hazard.

³⁶ Zeglen, Stefan, Babita Bains, and British Columbia Ministry of Forests, Lands and Natural Resource Operations and Rural Development. 2021. “Forest Health Overview 2021–23 Coast Area.” *Forest Health Overview*. Vol. 3–79.

³⁷ Invasive Species Council of British Columbia. “Scotch Broom - Invasive Species Council of British Columbia,” June 7, 2023. <https://bcinvasives.ca/invasives/scotch-broom/>.

³⁸ Powell River Regional District. “Invasive Plant Management Strategy.” *Invasive Plant Management Strategy*, 2017. <https://www.qathet.ca/wp-content/uploads/2020/01/Invasive-Plant-Management-Strategy.pdf>.

5.1.4 Wildfire History

The BCWS maintains a database of all wildfires that have occurred and required a BCWS response in the province since 1910. This includes point data for where a wildfire ignited and its ignition cause, as well as polygon data for fires that exceed 1 hectare. There is a record of 160 person caused fires and 63 lightning fires within the WUIs of the Region since 1910. Of this total, 23 of these started within the WUI and resulted in a fire larger than 1 hectare. All 23 were human caused (Figure 14). The recorded wildfire history in and around the AOI reflects the Natural Disturbance Type of the ecosystems present with relatively low frequency (Figure 14).

The Region has not experienced significant wildfire impacts in almost 100 years. There is anecdotal information that the Tla'amin First Nation were faced with massive walls of wildfire in 1918,³⁹ destroying the village of Tišosəm. Large fires were also seen in the 1920s across Electoral Areas B and C, with one large fire burning much of the Haslam Lake Bowl, resulting in a large amount of second growth forest.

Each Island in the qRD also experienced fires throughout the early 1900s. In 1920 a 194ha fire burned from the western point of Savary, covering almost half of the island. Texada Island saw two ~900ha fires in the 1930s, with two ~400ha fires burning on Lasqueti.

The BCWS is typically highly successful in suppressing wildfire ignitions in the region. However, coastal BC has seen increases in fire size and frequency in the last decade⁴⁰. Despite this, the BCWS been successful in rapidly containing new starts in that same timeframe.



Figure 13. Aerial photo of a 2023 fire near Lund.

³⁹ Roy Francis. "Easter Sunday Marks 100 Years Since the Great Fire of 1918," April 5, 2018. <https://www.tlaaminnation.com/wp-content/uploads/2018/02/1804-April.pdf>.

⁴⁰ Initiative, Local Journalism. "2023 was 'busiest fire season' for Coastal Fire Centre in the last decade." CTVNews, n.d. <https://www.ctvnews.ca/2023-was-busiest-fire-season-for-coastal-fire-centre-in-the-last-decade>.

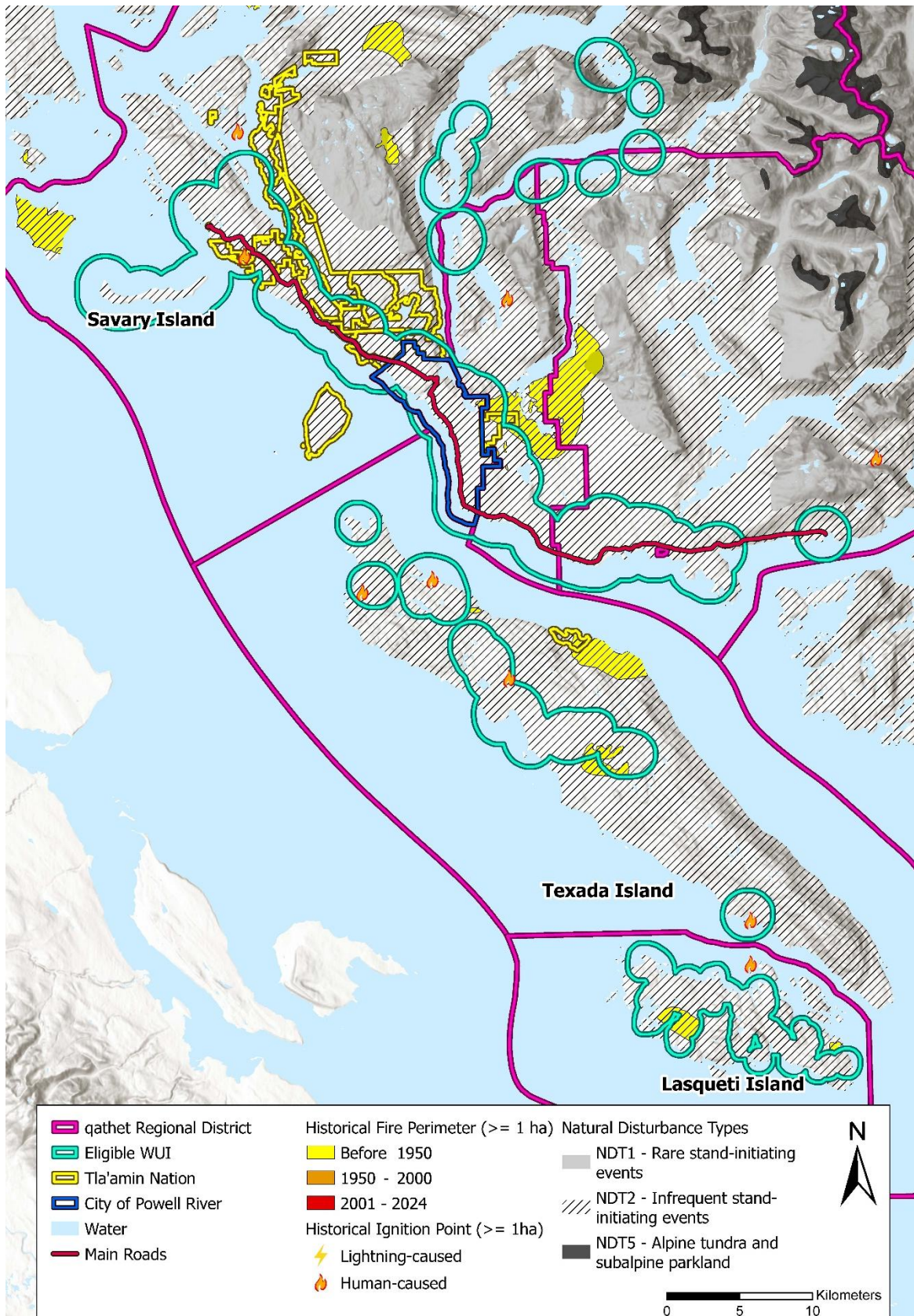


Figure 14. Fire history overview map of wildfire ignitions resulting in fires one or more hectares in size

5.1.5 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. Climate is the most important factor influencing the development of forest ecosystems, influencing the density and types of vegetation present.

The Region is characterized by a mild coastal climate. The Region receives high amounts of precipitation in the winter and significantly less in the summer months⁴¹. The wettest month, November, gets nearly 200 mm of rain. In contrast, the driest month, July, gets 24 mm of rain on average. Temperatures in the Region are moderated by its coastal location; winters are mild with average temperatures above freezing. The coldest month, January, averages 3.1°C, while the warmest month, July, has an average temperature of 14.1°C. Mild winter temperatures result in little accumulated snowfall. Without snowpack water can become scarcer in summer months despite the high average annual precipitation the Region receives. In 2021, the Region was put on Drought Level 4 as a result of a dry spring, which restricted treated water usage to essential uses⁴². These droughts will limit water availability for wildfire suppression.

Wind influences fire behaviour and direction of fire spread and is summarized in the wind roses from the local representative average from all weather stations in the Region (Figure 15). The wind rose data is compiled daily at noon local time and provides estimates of prevailing wind directions and wind speed. Throughout the duration of the wildfire season (May through September), that southeasterlies are the most common wind direction, but northeasterlies are where the highest wind speed occurs

Future impacts of climate change are likely to cause changes to the wildfire environment – projected impacts include increased summer temperatures and decreased summer precipitation, as well as increased extreme weather events and impacts to human health⁴³. All of the above factors may cause increased wildfire risk. Increased lightning strikes have also been observed locally – this has the potential to cause increased fire starts.

⁴¹ Weather Spark. "Powell River 2024 Past Weather (British Columbia, Canada) - Weather Spark," n.d. <https://weatherspark.com/h/y/354/2024/Historical-Weather-during-2024-in-Powell-River-British-Columbia-Canada>.

⁴² Landreville, Troy. "Severe Drought Worsens, Sunshine Coast at Level 4 Conditions - My Powell River Now." My Powell River Now, August 31, 2021. <https://www.mypowellrivernow.com/36202/news/severe-drought-worsens-east-vancouver-island-at-level-5-conditions/>.

⁴³ Dharan, S., P. Mourouga, P. Copin, G. Bessmer, B. Tschanz, and D. Pittet. "Routine disinfection of patients' environmental surfaces. Myth or reality?." *Journal of Hospital Infection* 42, no. 2 (1999): 113-117.

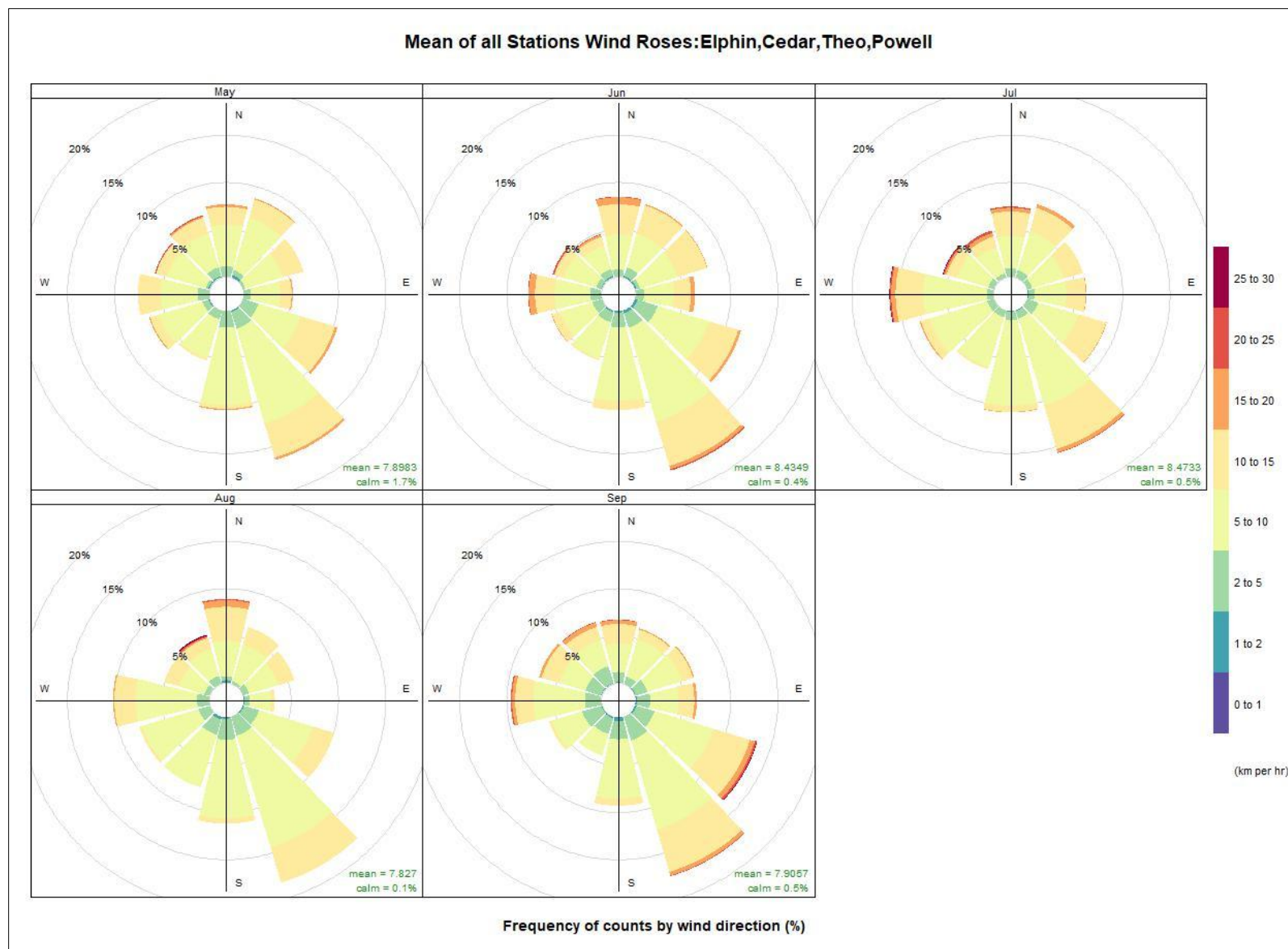


Figure 15. Wind rose diagrams for weather stations in the Region from May- September.

5.1.6 Canadian Forest Fire Danger Rating System (CFFDRS)

The national Canadian Forestry Service developed the Canadian Forest Fire Danger Rating System (CFFDRS) to assess fire danger and potential fire behaviour. Fire Danger Classes provide a relative index of how easy it is to ignite a fire and how difficult control is likely to be. A network of fire weather stations is maintained throughout the province during the fire season by the MOF, and the recorded data are used to determine fire danger represented by Fire Danger Classes on forest lands within/around a community. The fire danger information can be obtained from the BCWS and is most commonly utilized by municipalities and Regional Districts to monitor fire weather, restrict high-risk activities when appropriate, and to determine hazard ratings associated with bans and closures.

The *BC Wildfire Act*⁴⁴ and *Wildfire Regulation*⁴⁵ specify responsibilities and obligations with respect to fire use, prevention, control, and rehabilitation, and restrict high-risk activities based on Fire Danger Classes. The five Fire Danger Classes are defined as follows:

- **Class 1 (Very Low):** Fires are likely to be self-extinguishing and new ignitions are unlikely. Any existing fires are limited to smouldering in deep, drier layers.
- **Class 2 (Low):** Creeping or gentle surface fires. Ground crews easily contain fires with pumps and hand tools.
- **Class 3 (Moderate):** Moderate to vigorous surface fires with intermittent crown involvement. They are challenging for ground crews to handle; heavy equipment (bulldozers, tanker trucks, and aircraft) are often required to contain these fires.
- **Class 4 (High):** High-intensity fires with partial to full crown involvement. Head fire conditions are beyond the ability of ground crews; air attack with retardant is required to effectively attack the fire's head.
- **Class 5 (Extreme):** Fires with fast spreading, high-intensity crown fire. These fires are very difficult to control. Suppression actions are limited to flanks, with only indirect actions possible against the fire's head.

⁴⁴ *Wildfire Act*, S.B.C. Chapter 31 2004. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/04031_01

⁴⁵ "Wildfire Regulation," n.d. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/11_38_2005.

It is important for the development of a wildfire prevention and response program to determine the average periods of exposure to 'high' and 'extreme' fire danger. In Figure 16 the 'high' and 'extreme' fire danger days are summarized for the fire season (May-September) using data from the multiple weather stations for the Region, between 2016-2021. The months with the highest total number of 'high' and 'extreme' fire danger days are June and July. May also has a substantial amount of 'extreme' fire danger days – this is due to a phenomenon called the “spring dip”, where extreme/high indices occur in the spring and can lead to high crown fire activity.

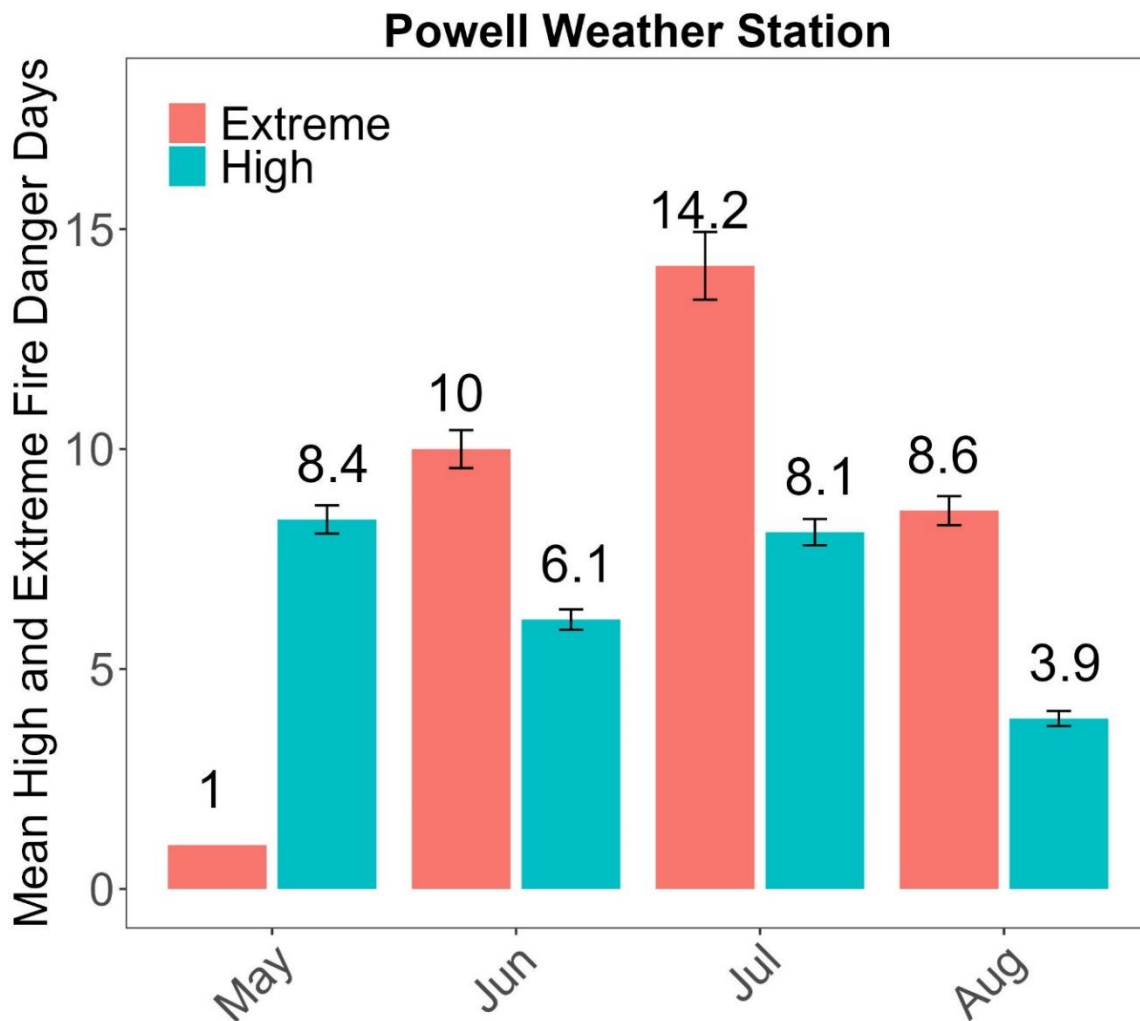


Figure 16. 'High' and 'extreme' fire danger days averaged between 2007 and 2023.

5.2 Wildfire Threat

Establishing wildfire threat for an area involves synthesizing the previously discussed factors of wildfire behaviour to predict potential wildfire threat. This process starts with the Provincial Strategic Threat Analysis (PSTA), which is then refined and ground truthed at the community scale to accurately determine the Local Wildfire Threat. Refining the PSTA requires synthesizing updated local fuel types, weather for the community, and local topography. All CWRP's follow a local wildfire threat assessment process outlined by the BC Wildfire Service, using the Wildfire Threat Assessment Guide⁴⁶ and supplemental guidance.⁴⁷

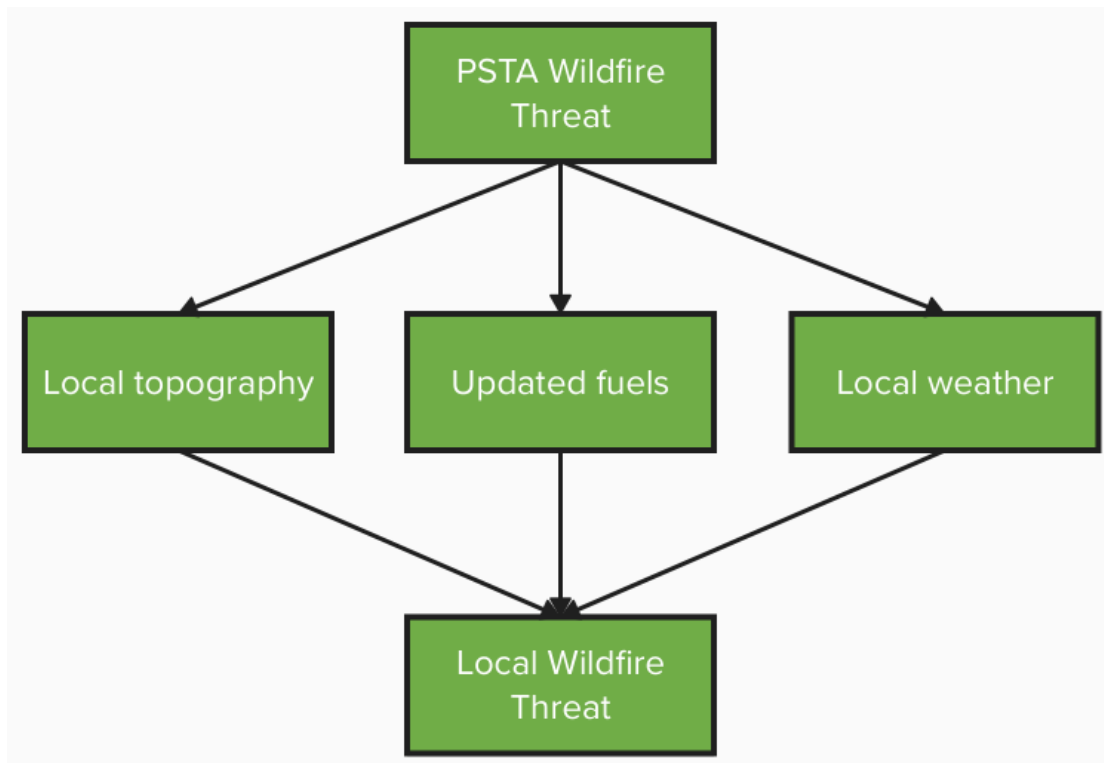


Figure 17. Local wildfire threat process summary.

⁴⁶ Ministry of Forests, Lands, Natural Resource Operations, and Rural Development, BC Wildfire Service, Bruce Morrow, Kelly Johnston, and John Davies. "2020 Wildfire Threat Assessment Guide and Worksheets." Report. 2020 Wildfire Threat Assessment Guide and Worksheets, 2020. <https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/2020-wildfire-threat-assesment-guide-final.pdf>.

⁴⁷ BCWS. "Determining Wildfire Threat and Risk at a Local Level." BC Fuel Type Map Document, n.d. https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/2020_determining_wildfire_threat_and_risk_at_a_local_level.pdf.

5.2.1 Provincial Strategic Threat Analysis

The Provincial Strategic Threat Analysis (PSTA) is a spatial dataset developed by the BC Wildfire Service to assess and predict potential wildfire threat and risk to values, utilizing three inputs including forest fuel types, spotting potential, and fire occurrence density. The PSTA is generated at a provincial scale, and is a static model of wildfire threat that is updated annually. The PSTA uses remotely derived inputs, with no ground truthing. Similarly, the PSTA does not include local weather conditions for identifying wildfire threat for a specific community. The PSTA is useful as an initial starting point for wildfire threat assessment at a community scale, but requires refinement through the CWRP process to accurately guide wildfire risk mitigation actions.

The PSTA stratifies vegetated areas into wildfire threat classes of extreme, high, moderate, or low. Private land is not evaluated in the PSTA. Non-fuel areas such as alpine tundra or water is considered no threat due

Table 9. PSTA Wildfire Threat within the WUI of the Regions AOI.

PSTA Threat Class	Area in WUI (ha)	Area in WUI (%)
'Extreme'	28	0.1%
'High'	497	1.5%
'Moderate'	11,663	34.1%
'Low'	3,983	11.6%
No data (Private managed Forest Land) *	3,478	10.2%
No data (private land) **	14,335	41.9%
Non-fuel (water)	241	0.7%

*Portion of off-reserve private land area within the WUI.

** private land is not assessed in the PSTA.

The PSTA has assessed most of the Region's WUI having a 'moderate' wildfire threat. During peak wildfire conditions, vigorous surface fire is likely, however it is likely that wildfire will be contained quickly by fire suppression personnel. Crown fire, which is much more challenging to manage, is unlikely under typical summer wildfire conditions for most of the WUI. However, less than 2% of the Region has 'high' and 'extreme' wildfire threat present, scattered throughout the WUI. Crown fire is possible and even likely in many of these areas during peak wildfire conditions.

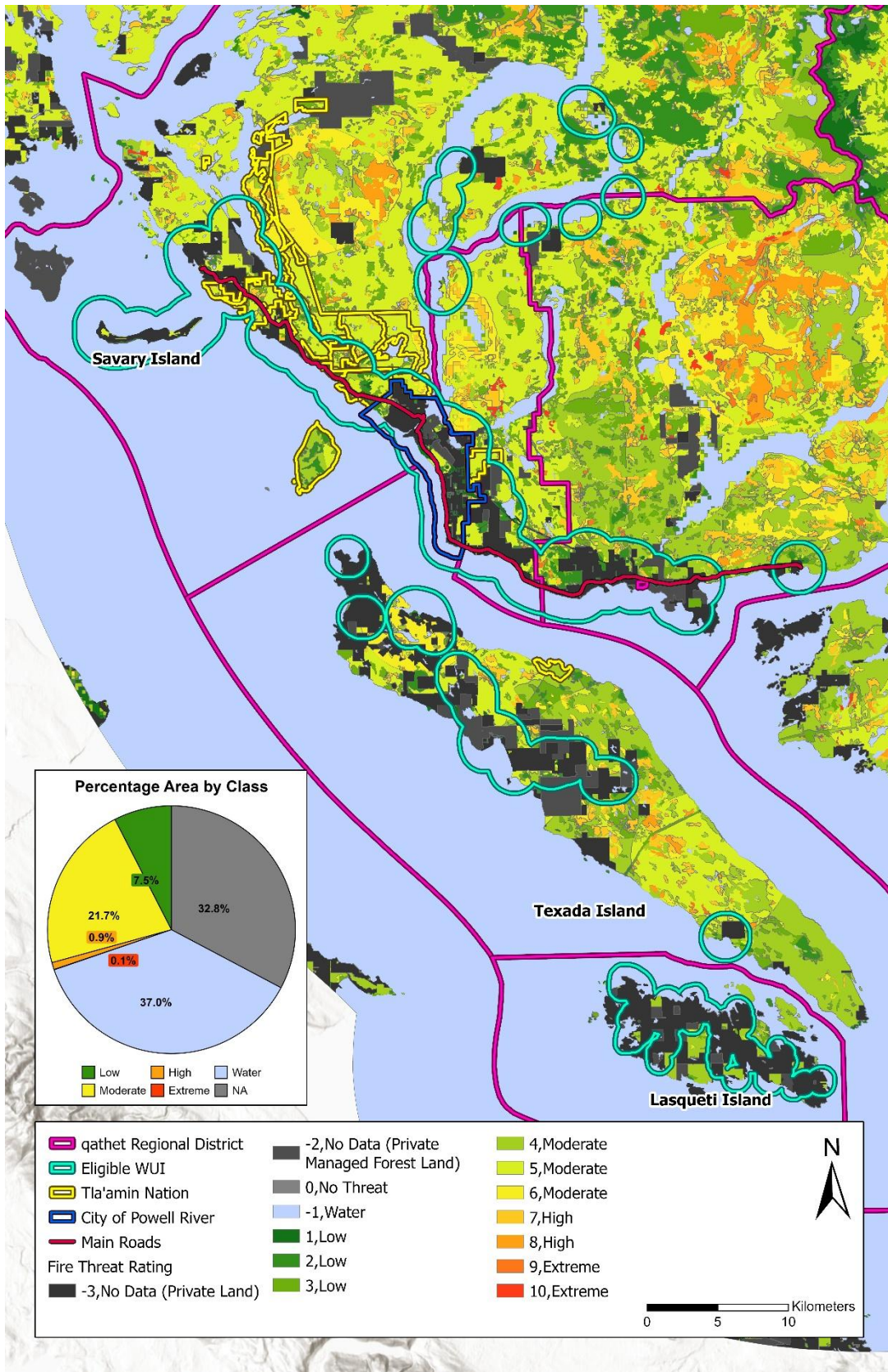


Figure 18. PSTA wildfire threat map within the WUI.

5.2.2 Local Wildfire Threat Assessment

Part of the process of developing this CWRP involves on-the-ground verification and assessment of local vegetation types and the inherent wildfire threat of forested areas within and around a community. This process clarifies the PSTA, identifying factors driving wildfire threat, and correcting inaccuracies. Wildfire threat is assessed using the Wildfire Threat Assessment (WTA) tool developed by BC Wildfire Service⁴⁸, which focuses on forest stand attributes and fuel structure, independent of fire weather and other fire behaviour components which are contained in the PSTA data. If necessary, the PSTA wildfire threat ratings are adjusted based on field verifications.

Field staff completed field verification and wildfire threat assessments for the WUI. Thirty-seven WTA plots were conducted within the Region (Figure 20). Only 10% of these resulted in a threat score of 'High' and 90% resulting in a low or moderate threat score.

Low and moderate wildfire threat ratings were associated with C-5 forest fuel types, while the high wildfire threat ratings were associated with denser C-3 forest fuel types. Field assessment findings were consistent with the Region's PSTA data.

Wildfire Threat Assessment Worksheet - Fuel Assessment (Site Level)		Plot #
Location Qrd cwrp		Date 2/7/24
Assessor/ Professional Designation Trevor Leslie FI		
Coordinates (Lat/Long - Degrees/Decimal minutes): 124° 33.083' W 49° 53.386' N		Other
Component/ Sub Component	Levels / Classes	
Forest Floor and Organic Layer		
1 Depth of Organic layer (cm)	1-2 1 2-5 3 5-10 5 10-20 3 >20 2	
Surface and Ladder Fuel (0.1 - 3.0 meters in height)		
2 Surface fuel composition	Moss, Herbs and Deciduous Shrubs 4 Lichen, Conifer Shrubs 6 Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) 8 Pinegrass 10 Sagebrush, Bunchgrass, Juniper, Scotch broom 15	
3 Dead and Down material Continuity (<7cm)	Absent 0 Scattered <10 coverage 4 10 - 25% coverage 8 26-50% coverage 12 >50% Coverage 15	
4 Ladder fuel composition	Deciduous/ None 0 Mixwood 5 Other conifer 8 Elevated dead fuel 10 Spruce/ Fir/ Pine 15	
5 Ladder fuel horizontal continuity	Absent 0 Sparse <10% coverage 2 Scattered 10 - 39% coverage 8 Patchy 40-60% coverage 10 Uniform >60% coverage 15	
6 Stem/ha (understory) ¹	<500 2 501-800 4 801-1200 6 1201-1500 8 >1500 10	
Stand Structure and Composition (Dominant and Co-Dominate stems)		
7 Overstory Composition/ CBH (Crown Base Height)	Deciduous (<25% conifer) 0 Mixwood (% Conifer) 25% 50% 75% 0 2 3 Conifer with high CBH (>10m) 3 Conifer with moderate CBH (5-9m) 4 Conifer with low CBH (<5m) 5	
8 Crown Closure	<20% 0 20-40% or deciduous overstory 1 41-60% 2 61-80% 5 >80% 4	
9 Fuel Strata Gap ² (m)	>10 0 6-9 1 3-6 3 <3 5	
10 Stems/ha live/ grn dom & codom <400 (overstory)	0 401-600 2 601-900 3 901-1200 4 >1200 5	
11 Dead and Dying (% of dominant and co-dominant stems)	Standing Dead/ Partial down <20% 2 Standing Dead/ Partial down 21-50% 5 Standing Dead/ Partial down 51-75% 8 Standing Dead/ Partial down >75% 10	
Ecoprovince Coast and Mountains (0/42/58/70)		Threat Assessment Moderate
Comments: Douglas fir dominant with cedar Crown land		WTA Total 45

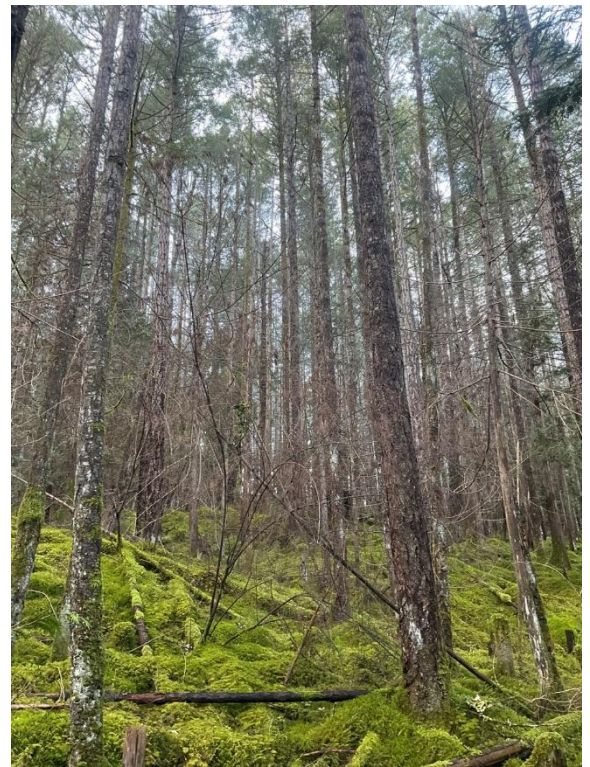


Figure 19. Example of Wildfire threat assessment worksheet and representative photo

⁴⁸ "2020 Wildfire Threat Assessment Guide and Worksheets." Report. 2020 Wildfire Threat Assessment Guide and Worksheets, 2020. <https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/2020-wildfire-threat-assesment-guide-final.pdf>.

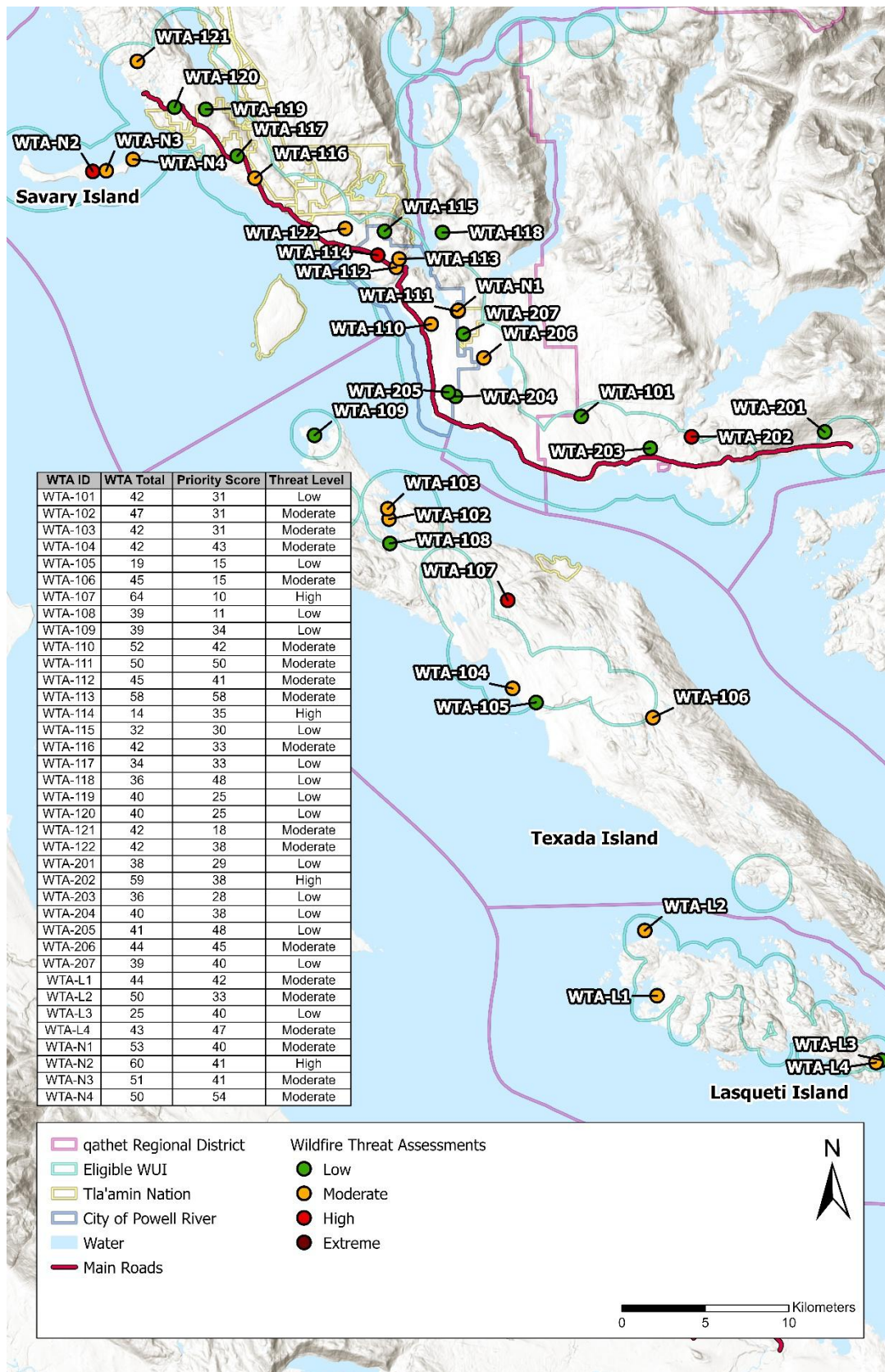


Figure 20. Wildfire Threat Assessments (WTA) completed throughout the WUI.

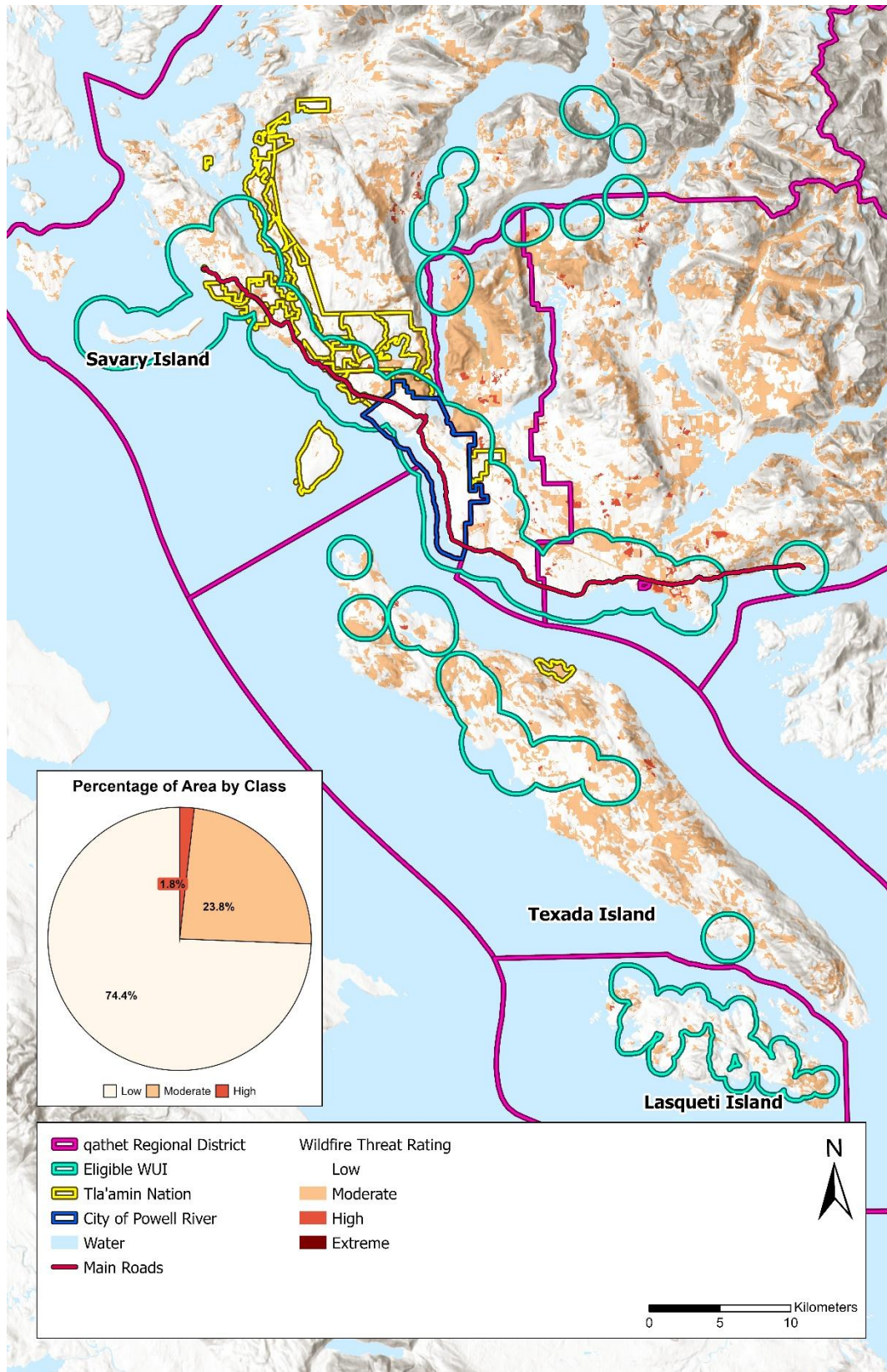


Figure 21. Wildfire Threat map representing threat rating of landscape throughout the Region

5.3 Wildfire Risk

Wildfire risk builds off the wildfire threat assessment by identifying the areas in the community where high wildfire threat occurs near important community values, such as critical infrastructure and homes. In an area like the qRD where wildfire threat is fairly consistent across the WUI, wildfire risk highlights the highest priority areas for risk mitigation.

The fire simulation program Fireland Threat Tool (FLTT) was utilized as a part of the planning process. The program predicts crown fire burn probability (BP), head fire intensity (HFI), and the rate of spread (ROS). BP, HFI, and ROS are key variables to consider when evaluating the potential wildfire risk of a given area. FLTT generates outputs by running the Region's threat and its proximity to values. Results from FLTT allows for WUI Risk Class polygon areas to be assessed relative to the larger landscape surrounding and affecting each. See Appendix D: Fire-Landscape Threat Tool Modelling for detailed breakdown of the process used to determine wildfire risk for this CWRP.

The FLTT fire threat for the WUI is 70% low risk, 6.5% moderate and 2.5% of the area is at high risk (Figure 24). Most of the inhabited areas under a 90th percentile weather condition for the Region is at **low** or **moderate** wildfire risk.

'Low' wildfire risk exists when it is not near human structures and values. Fires are a natural process in the ecosystem and under normal conditions are easily managed. The Region is primarily low risk due to its coastal climate characterized by moderate temperatures, higher humidity, and higher rainfall which naturally suppresses wildfire. The Region's natural forest types as discussed above are less prone to ignition and sustained fire spread when compared to BC's Interior drier forests. In fact, many older forests (> 100 years old) within the WUI exhibit forest fuel conditions like a mature C-5 fuel type which would generally be classified as a 'low' fire threat and risk to communities. Since these forests already have low threat conditions, the authors have not recommended extensive proposed fuel treatments and it is recommended that these types of units be retained over time rather than harvested or fuel treated.

Areas located near values within the WUI inherently have a higher likelihood of causing moderate to severe impacts to community structures and critical infrastructure. This proximity to human values also increases the likelihood of human caused fire ignitions ([see fire history map](#)) and the consequences of these events. Even when the surrounding landscape is characterised as low risk- the presence of homes and other values elevates the risk factor to a moderate risk class.

There are also areas within the WUI that are categorized as high risk. These are areas that the Region should focus mitigation efforts. This would be due to a combination of higher hazard fuel types, such as the drier grass and arbutus areas near Cranberry Lake and dense forests of Savary Island. Steep terrain can further amplify the risk factor and increase fire behaviour, such as the slopes along Powell Lake where cabins exist.

The following sections of this CWRP explore potential options that will reduce wildfire risk within the community, aiming to integrate these actions with available funding, existing programs, and regular operations of the Region's administration.



Figure 22. Dense forest with ladder fuels and moderate/heavy ground fuel loading on Savary.

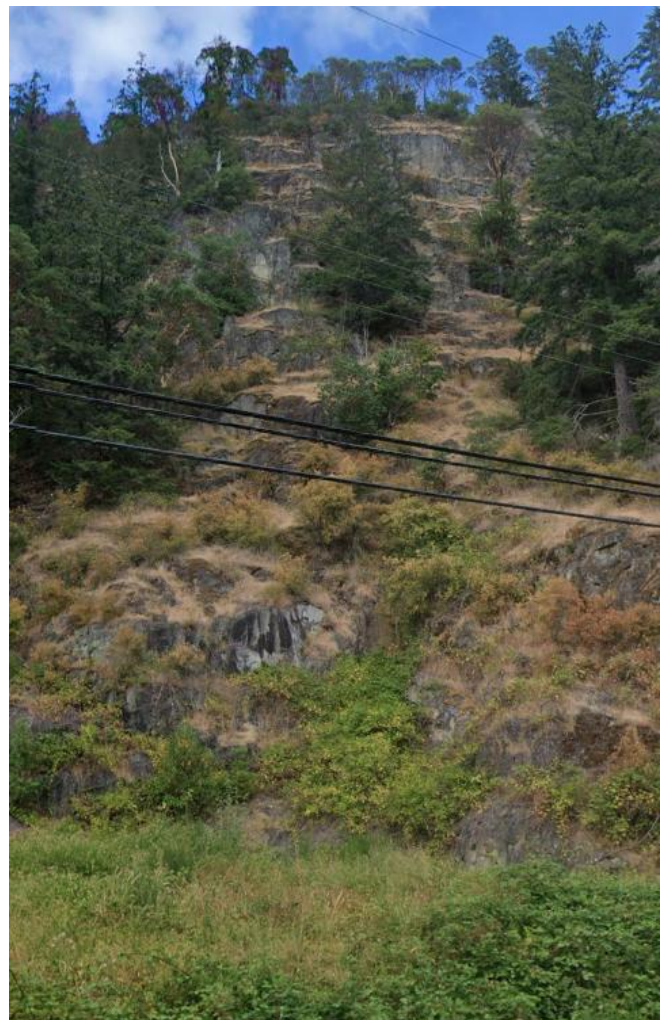


Figure 23. Steep slopes and dry grass near Cranberry

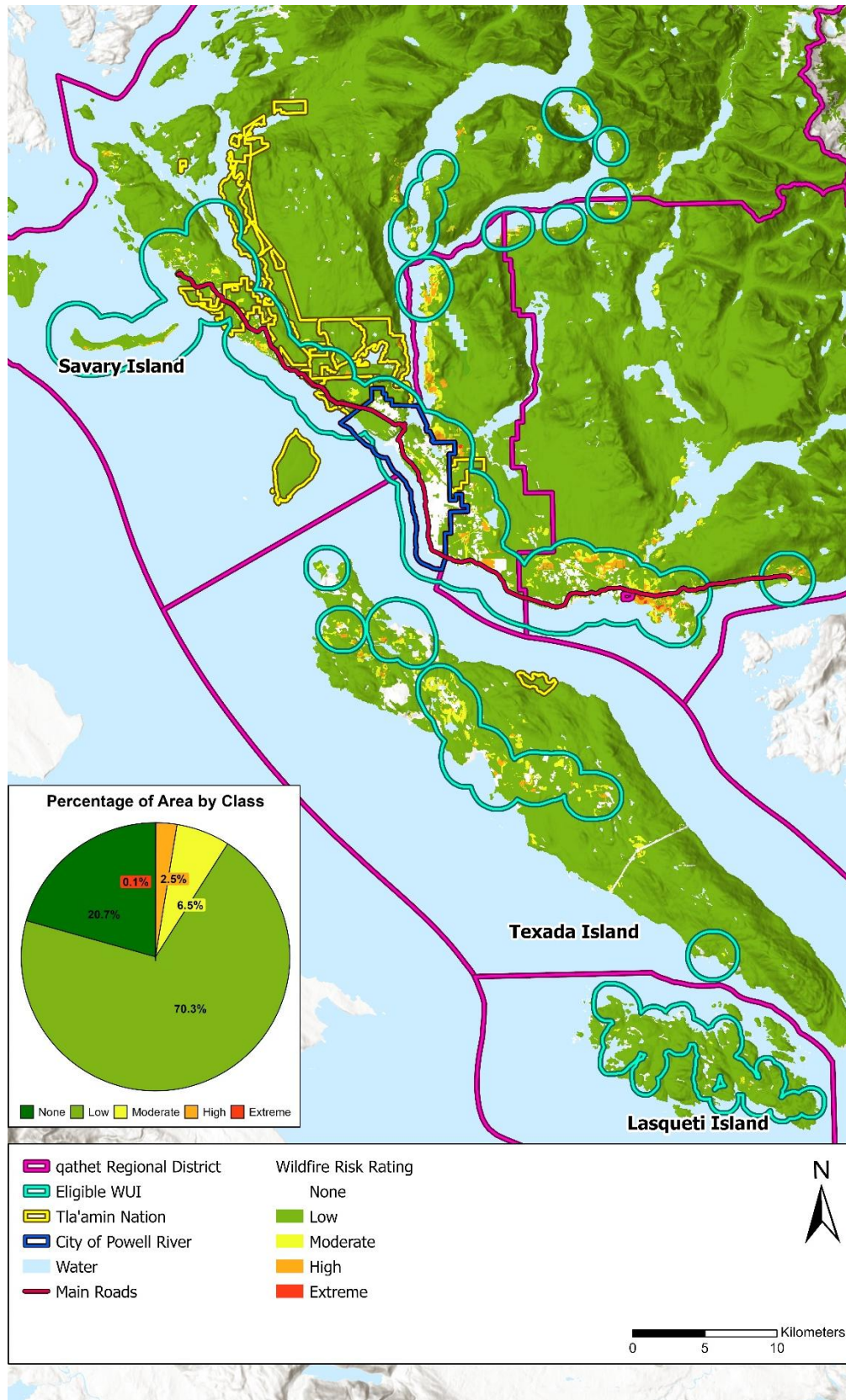


Figure 24. Wildfire risk rating map incorporating wildfire threat to proximity of values.

6 FireSmart Disciplines

The following sections of the Plan provide a series of actions recommended to reduce wildfire risk within the Region. These have been subdivided by community, with each community having its own section. Within each community's section, recommendations have been subdivided to align with the seven disciplines of FireSmart.

FireSmart is the national program for building resilience to wildfire in interface communities. Each province has a committee, all of which are coordinated through the Federal FireSmart Canada program. FireSmart is designed for a wide array of audiences, from first responders to community members. The seven disciplines are:

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

Each FireSmart discipline section begins with an overview of the discipline and relevant information, such as current and planned work. Pertinent recommended actions are discussed in each section, and summarized at the end of each section. The Action Plan section combines all these recommendations, with added detail on timelines, leader(s), metrics for success, and any other relevant notes.

There are also three key components of FireSmart programming in BC that overarch all the FireSmart disciplines: CWRPs, Community FireSmart and Resiliency Committees, and FireSmart Coordinators. These key components of FireSmart are crucial to action implementation and FireSmart programming delivery, and thus overarch all seven of the FireSmart disciplines. These components are discussed in this section below. Following that, we introduce the key concepts of FireSmart programming, all of which are discussed throughout the seven disciplines sections.

6.1 Concepts of FireSmart

The goal of FireSmart is to create communities that are resilient to wildfire. This does not mean eliminating wildfire, but rather limiting the impacts wildfire has on an area. The primary focus in FireSmart is protecting critical values in a community, such as home and critical infrastructure. FireSmart therefore takes a values outward approach to limit wildfire impacts.

During an interface wildfire, structures can be involved through several ignition pathways. The first is direct flame, when wildfire in vegetation is directly in contact with the structure. The second is through convective heat, when a wildfire is near, usually within 10m, and the heat is sufficient to cause autoignition. The third pathway is through ember ingress, where embers travel through the air from the main body of a wildfire and involve a structure. These embers, which can travel several kilometers, can accumulate on combustible services or enter through structure openings, and cause the ignition of the structure. Building structures that are resilient to wildfire requires proactively mitigating these three pathways to ignition.

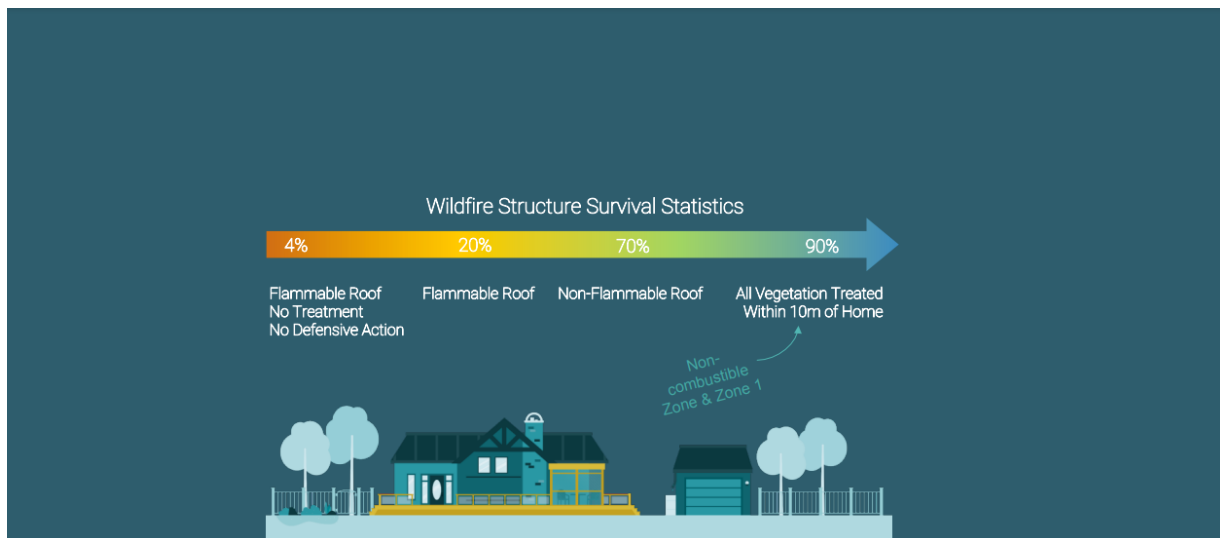


Figure 25. Benefits of FireSmart within 10 meters of structures. FireSmart compliance within 10 meters of structures can significantly increase the likelihood of home survival in the event of a wildfire. Graphic from FireSmart Canada (www.firesmartcanada.ca).

FireSmart divides the structure and surrounding area into three separate zones. Risk mitigation activities in each of these zones are designed to prevent the pathways to ignition associated with these zones.



Figure 26. The Home Ignition Zone. Graphic from FireSmart Canada (www.firesmartcanada.ca)

The Immediate Zone includes the structure and the area within 0-1.5m surrounding the structure. The primary goal of mitigation in this zone is to prevent ember caused ignition for the structure, and to prevent wildfire from spreading to directly adjacent the structure. FireSmart principles should be integrated into the construction of the structure, to ensure it is as resistant to ignition as possible. No combustible materials, such as wooden fences or planter beds, vegetation, or bark mulch, should be present within 1.5m of the building exterior. A 15cm inflammable ground to siding clearance should be established. Complying with FireSmart guidelines will limit the structures exposure to ember, radiant, and convective pathways to ignition.

The Intermediate Zone refers to the area within 1.5 and 10m from the structure. The primary goal of this area is to limit wildfire from establishing in combustible materials or vegetation near the home, and expose the structure to radiant or convective ignition. This area is primarily focused on ensuring the landscaping in this zone is suitable, and includes both vegetation and hardscape materials. Only fire-resistant vegetation should be present in this zone, with no high-risk conifers or coniferous vegetation, like cedar hedges for example. No combustible materials such as firewood piles, combustible detached structures, combustible fences, or combustible decorative features should be present in this zone.

The Extended Zone refers to the area within 10 and 30m from the structure. The primary goal of this area is to reduce the intensity of a wildfire. Flammable vegetation should be limited in density and continuity. This can be done through selective tree removal, tree pruning, debris management, and surface vegetation clean up. Reducing wildfire intensity in this zone will limit the structure to exposure to radiant heat and embers.

6.2 Foundations of FireSmart

The three foundational components of FireSmart that underpin the seven disciplines are the CWRP, the FireSmart Coordinator role, and the Community FireSmart and Resiliency Committee (CFRC). These key components should be present in any community aiming to build resilience to wildfire: A CWRP outlines a strategic vision to building wildfire resilience, while the FireSmart Coordinator and CFRC provide the support required to implementing that plan.

The Community Resiliency Investment (CRI) program, as of 2023, has created two streams for accessing funding for wildfire risk mitigation activities. The allocation-based stream of this program provides streamlined and rapid access to funding for communities that have the three foundational components of FireSmart in place. Communities without these three foundational FireSmart component can access funding through an alternative application-based funding stream, however this is more complex and less certain. CRI strongly encourages all communities to prioritize the CWRP, FireSmart Coordinator role, and the CFRC for building community resilience to wildfire.

6.2.1 Community Wildfire Resiliency Plans

CWRPs are the foundation to building wildfire resiliency in communities in BC. These plans use a FireSmart lens to produce a vision and roadmap for reducing the wildfire risk in a community. These plans provide recommended actions for building resiliency to wildfire, with important advice on implementation.

This CWRP is an important first step for building wildfire resiliency for the governing jurisdictions within the Region: the qRD, Tla'amin Nation, and City of Powell River. However, wildfire risk is not static, and neither are our communities. Similarly, wildfire risk mitigation activities will also impact wildfire risk and the vulnerabilities present in a community. Therefore, this CWRP must be maintained and periodically revised. This should consist of an annual review of the CWRP Action Plan, identified actions implemented, as well as lessons learned through that implementation process. There should also be a complete review and update of the CWRP every five to ten years. This should consist of updated wildfire risk modelling based on new wildfire threat analysis, and incorporating any wildfire risk mitigations implemented.

6.2.2 FireSmart Coordinator

Building resiliency to wildfire in a community and navigating the various disciplines of FireSmart is a complex process, challenging for both community leaders and residents. While the community is intended to provide leadership and expertise in navigating FireSmart, local government leaders often lack the time and FireSmart knowledge required. The FireSmart Coordinator role is a role fulfilled by a dedicated representative with both local knowledge of the community and knowledge of the FireSmart program. Currently the local FireSmart Coordinator provides local leadership on FireSmart initiatives, as well as a resource available to the community for assessments, plans, and mitigation works.⁴⁹ The FireSmart Coordinator plays a vital role in ensuring that FireSmart principles are effectively applied and implemented within their community to mitigate wildfire risks. Acting as the primary point of contact for the FireSmart program, the coordinator facilitates communication and education about FireSmart initiatives. They engage with community members through various means, including signage, events, training sessions, and committee meetings, to promote awareness and encourage participation in wildfire risk reduction efforts.⁵⁰

6.2.3 Community FireSmart and Resiliency Committee

A CFRC a Regional body that brings together the various actors in FireSmart and wildfire resiliency in the local area. This can include representatives from neighbouring governments, fire departments, BCWS, Ministry of Forests, and other important groups. CFRC's are intended to be broad, high-level committees for coordinating planning and sharing knowledge across a Region. The framework is designed to be as flexible as possible, to meet the community and Region's needs and capacity.

Existing committees, such as the emergency preparedness committee, have been working to build collaboration throughout the Region. The Region's emergency preparedness committee meetings provide a key opportunity to leverage and collaborate with the other Regional actors. This forum can be used to integrate qRD concerns into new Regional initiatives, such as CWRPs for the Region, or new Wildland Urban Interface Wildfire Risk Reduction Plans (WUI WRR plans) in the Region led by the BCWS. Continued use of this meeting is encouraged. The CFRC should be incorporated to include key players in the Region who have been trained in the Home Partner Program and other FireSmart coordinators in neighbouring communities and Regional Districts. Members from BCWS, the Ministry of Forests, and Fire Chiefs should be invited to participate in these CFRC meetings.

⁴⁹ See: <https://www.qathet.ca/services/emergency-services/regional-firesmart-program/>

⁵⁰ See: <https://firesmartbc.ca/firesmart-coordinators/>

7 Tla'amin Nation

7.1 Summary

Tla'amin Nation faces unique wildfire related challenges including a need for building internal capacity for response and suppression, inadequate equipment and aging infrastructure.

The lack of a dedicated FireSmart coordinator limits ability to align community needs with government resources and implement tailored prevention practices. One of the roles the FireSmart coordinator would also aid in is adding FireSmart education to local activities, such as growing FireSmart plants and including it in school programs to teach fire prevention from a young age.

Securing more equipment for Tla'amin is also a priority, especially a dedicated Structure protection unit (SPU). Funding through FNESS can support these efforts. FNESS should also be consulted with what assistance they can provide with addressing critical infrastructure. The public works building is in poor condition and needs rebuilding to store equipment properly. The water pipe from the lake is old and lacks a flow meter, making it difficult to monitor water issues. This pipe serves as both the fire fighting and drinking water source, so it will be important to plan for its replacement.

Developing legislation around fire safety and debris disposal should also be considered to maintain a safe environment for everyone during elevated fire hazard. Bylaws and enforcement should also be explored to prevent squatting near Sliammon Lake, as it poses risks for fires and water quality.

Regular maintenance, such as hydro line clearing, removing Scotch broom and tree clearing by arborists, in necessary areas to keep distribution lines clear of hazards. All of these recommendations specific to Tla'amin Nation are explored in depth in the following FireSmart Discipline sections.

7.2 Education

The FireSmart education discipline focuses on communicating wildfire risk and wildfire resilience information to all the members of a community. Every member of a community, from residents to land managers and elected officials, has a shared responsibility for wildfire resilience. The responsibilities for wildfire risk mitigation vary, but an understanding of wildfire risk and resilience are of importance to all community members. The ultimate goal of the education FireSmart discipline is to create an understanding of wildfire risk, which can in turn empower residents to act within their capacity to build community resilience.

The recommended actions for FireSmart education are numerous and broad; community education is challenging, and requires multiple different avenues to reach community members. These actions are tailored to reflect the Tla'amin Nation's community context, and provide both passive and active opportunities for engagement.

Active education involves specific events, conversations, and presentations that meet residents and provide information and access to tool. Active education is most successful when leveraging pre-existing community gatherings to add on a FireSmart education component. For example, setting up a booth with FireSmart education materials and staff at a community gathering. Leveraging pre-existing events removes barriers by meeting people where they are already gathering, rather than asking them to make time for specific events. However, specific FireSmart events are also important as they provide a focused venue for FireSmart education. This may include a community FireSmart meeting, presentation, or open house, where residents can access materials and ask questions of FireSmart experts.

Passive education involves providing access to FireSmart educational materials that residents can access on their own schedule. This may involve a specific webpage on the Tla'amin Nation website with FireSmart material, or providing brochures with FireSmart materials at regular community gathering places such as the Nation office, or community centre. Passive materials should also aim to create opportunities for active engagement, such as advertising FireSmart events, or providing contact information for a FireSmart expert to provide additional information.

7.2.1 Current Status

The Education discipline of FireSmart is the most diverse, requiring multiple different initiatives, both active and passive, to reach community members. Successful education programming typically requires capacity, which is best developed through the FireSmart Coordinator position discussed in the previous section. The FireSmart Coordinator, or an equivalent staff member, will be responsible for developing and rolling out the education initiatives below.

Currently, the FireSmart Coordinator for the qRD is responsible for the Tla'amin First Nation FireSmart program as well. For the size of this Nation and their interests it is recommended that they seek an additional FireSmart coordinator solely for the Nation.

FireSmart education should be conducted annually, planning out the various initiatives as part of campaign to build community awareness. Developing an annual strategic education plan ensures the events and initiatives are coordinated, taking advantage of seasonal trends and regular community gatherings. Once a plan is in place, it can be revisited each year, reducing repeated planning effort each year.

7.2.2 Action Planning

FireSmart education should be conducted annually, planning out the various initiatives as part of campaign to build community awareness. Developing an annual strategic education plan ensures the events and initiatives are coordinated, taking advantage of seasonal trends and regular community gatherings. Once a plan is in place, it can be revisited each year, reducing repeated planning effort each year.

Recommended actions to promote FireSmart education include continuing to host events and open houses that provide opportunities for direct engagement and education. These events create focused settings where residents can ask questions, access tools, and connect with experts. Establishing a FireSmart Resiliency Committee, led by community leaders, ensures sustained collaboration and leadership to drive these efforts forward. Educational efforts should support practical wildfire mitigation activities, such as fuel management and prescribed or cultural burning, by offering targeted resources and information for community members. Additionally, organizing annual Community Cleanup Days helps residents reduce wildfire risk on their properties by providing assistance with yard cleanup and disposing of combustible materials. These actions foster community engagement, reduce barriers to participation, and build a stronger foundation for wildfire resilience.

Table 10. FireSmart Education action recommendations.

Recommended Action	Description
1	Continue to emphasize FireSmart education events and open houses Focused on FireSmart concepts and activities occupants can do around their homes to reduce fire hazard.
2	Continue to participate in a FireSmart Resiliency Committee comprised of leaders in the community, with a designated committee chair. The Committee should discuss future FireSmart programming, accountability, and structure moving forward.
3	Confirm communication plan, (previously completed with Regional partners) and communicate key risks and recommendations each community can take.
4	Work with BCWS to improve communication during wildfire incidents and improve real time information
5	Promote education to

Recommended Action	Description
	• Support fuel management activities and including prescribed and cultural burning • Maintain current fuel breaks; irrigating and mowing sports fields, • Planting more deciduous shade trees • Distribute FireSmart educational resources • Increase awareness of local fire regime included in this plan. (Speak to historical fire in the area, return intervals and coastal ecosystems)
6	Organize annual Community Cleanup Day(s), with assistance to community members in cleaning their yards of combustible materials as well as assistance disposing of these materials (chipper rental if required, trailers for moving waste, assistance removing old propane tanks).
7	Support the FireSmart BC Plant Program at local garden centres or nurseries. Includes plant tags, banners, staff buttons and in-store advertising.

7.3 Legislation and Planning

Legislation and regulation are potential tools for reducing wildfire risk on public land. Provincial and Federal Acts and Regulations can provide means for local governments and First Nation governments to implement wildfire risk reduction. These are differentiated from development specific bylaws and regulations that may be present in a community, which are discussed in the following section on Development Considerations.

As a self-governing Nation, the Tla'amin Nation provides most of the oversight for activities within their lands. This is completed through regulations included in the First Nations Community Plan, which are managed by the Tla'amin administration. However, it is important to understand that the administration of these regulations may differ from typical settler governance structures in local governments. In addition, several provincial and federal acts and regulations apply within the Tla'amin Nations lands that may be pertinent to wildfire risk mitigation planning.

7.3.1 Current Status

It is important to consider new regulations within the context of the Tla'amin community's ability to administer and enforce them. While there are many options for regulations that may reduce wildfire risk, many of these are not feasible in a small community with limited capacity. The primary focus should be ensuring community members are complying with existing regulations, such as OBSCR and the Wildfire Act. An additional option is developing a regulation specific to the Tla'amin community regulating open burning to reduce inadvertent human caused wildfires. This should be tied to wildfire hazard, to limit burning during periods where wildfires may start easily and spread quickly.

7.3.2 Provincial Acts and Regulations

Three provincial acts and regulations are particularly relevant for wildfire risk mitigation: the *BC Building Act and Regulation*, the *BC Open Burning and Smoke Control Regulation*, and the *BC Wildfire Act and Regulation*. The Forest and Range Practices Act is also relevant for larger scale wildfire risk mitigation work, and its relevance is described in more detail in the Vegetation Management Section.

The *BC Building Act* creates a series of technical building requirements for buildings in BC. This also sets training and qualification requirements for building officials. Many of these requirements are designed to limit the spread of structure fire within a structure, however there are no provisions for limiting interface wildfire spreading to a structure.

The *BC Open Burning Smoke Control Regulation* (OBSCR) covers open burning of wood debris (vegetative material) to manage smoke and fine particulate matter from contributing to poor air quality. OBSCR has requirements that pertain to burning for community wildfire risk reduction. The OBSCR requires anyone conducting an open burn for wildfire risk reduction to submit the plan to a director, to give notification to the community about the burn plan, that a ventilation forecast is "good" or "fair", and that the burn is completed within a day. Many local governments in BC have bylaws in place regulating open burning in addition to OBSCR. This may be pertinent for prescribed burning or debris burning for wildfire risk mitigation within the Tla'amin Nation, where activities may be limited by OBSCR regulations.

The *BC Wildfire Act* and *Wildfire Regulation* sets out legal responsibilities and obligations for certain activities that are enforceable during bans and restrictions. This Act and regulations could impact this CWRP recommendations and treatments when a provincial fire ban is in effect. The *Wildfire Act* also limits industrial activities during periods of elevated wildfire danger based on the risk of ignition of those activities. These acts and regulations may be superseded by a local bylaw or regulation.

7.3.3 Federal Acts and Regulations

Several key Federal Acts that may be relevant within the Tla'amin Nation are the *Fisheries Act*⁵¹, the *Species at Risk Act*,⁵² and the *Migratory Birds Convention Act*⁵³.

The Federal *Fisheries Act* is in place to provide a framework for the management and control of fisheries in Canada, as well as conservation and protection of fish and fish habitat. Any wildfire prevention and mitigation treatments that could impact fish or fish habitat, including riparian areas will need to adhere to the legal requirements of this Act.

The *Species at Risk Act* (SARA) is federal legislation designed to prevent species from extinction and/or extirpation in Canada and provide recovery strategies for extirpated, endangered, and threatened species, as well as prevent species of concern from becoming threatened or endangered. The CWRP treatments and recommendations will need to consider species at risk and follow the requirements and prohibitions set out in SARA. Any land management should consider the environmental values at risk section to identify any species at risk, and include measures for ensuring compliance with the *Species at Risk Act*.

The *Migratory Birds Convention Act* protects most species of birds in Canada. This law contains regulations to protect birds, their nests and eggs from disturbance. This includes direct disturbance through hunting, wood harvesting, and commercial use, as well as indirect disturbance that may impact bird activities. Any land management activity that has potential to disturb birds protected under this Act.

⁵¹ *Fisheries Act*, Revised Statutes of Canada 1985, c F-14. <https://laws-lois.justice.gc.ca/eng/acts/f-14/>

⁵² *Species at Risk Act*, Statutes of Canada 2002, c. 29. <https://laws.justice.gc.ca/eng/acts/s-15.3/>

⁵³ *Migratory Birds Convention Act*, Statutes of Canada 1994 c.22. <https://laws.justice.gc.ca/eng/acts/M-7.01/>

7.3.4 Action Planning

Table 11. FireSmart Legislation and Planning action recommendations.

Recommended Action	Description
8	Ensure the design and maintenance of public land such as parks and greenspaces consider FireSmart practices.
9	Renew FireSmart assessments for eligible buildings, publicly and First Nations owned critical infrastructure, culturally significant sites and/or green spaces.
10	Review vegetation management practices with MOTT and BC Hydro. Ensure right of ways and debris management is compliant with provincial regulations.

7.4 Development Considerations

Development decisions, such as building materials, 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 and may impact 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.

7.4.1 Current Status

Most homes within the community are owned directly by the Nation. All housing construction is determined by the Tla'amin Nation administration, with most housing funding and building plans provided by the Federal Government. All housing is built to meet the requirements of the relevant building code. Most inhabited structures are generally compliant with FireSmart building design and materials. The most common deficiencies in the structures are combustible decks, stairs, and fences, as well as combustible accessory buildings within 10m of the structures. Combustible siding is also common among many of the older homes. The most common and significant landscaping issue is long, unmaintained grass near or directly adjacent structures.

The Tla'amin Nation has built several community buildings for supporting the functioning of the community, including the Administration building, the works shop, a new gas station, as well as a water reservoir and pumphouse. Most of these structures are generally compliant with FireSmart guidance for building materials and design. The most common wildfire vulnerability is long grass within 1m of structures.

As Tla'amin continues to explore development considerations around Critical infrastructure, the Emergency manager has expressed an interest in exploring opportunities to collaborate with the Ministry of Emergency Management and Climate Readiness as well for all hazard response⁵⁴. This Ministry has been in the process of modifying the definition of Critical infrastructure to include all systems and functions that provide food and water security. Where in the past, C.I. was limited to a physical structure, Tla'amin wants to explore the consideration that ecosystem function and the intrinsic values that watersheds and water quality has at being critical to the survival of the Nation. To safeguard vital food and water resources for the Tla'amin community, the implementation of new critical infrastructure definitions aims to establish enforceable boundaries, such as those near Sliammon Lake. This measure is crucial for mitigating the threat of human-caused wildfires, which could severely damage these essential ecosystems that are critical components of the community's food and water security.

⁵⁴ BC Wildfire Service. "How We Work With the Ministry of Emergency Management and Climate Readiness - Province of British Columbia," June 14, 2024. <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/partners/emcr>.

7.4.2 Action Planning

Although several FireSmart deficiencies were identified in various critical infrastructure buildings and homes, complete assessments are required. These FireSmart assessments will provide detailed information on FireSmart deficiencies and identify options for mitigation. FireSmart assessments should be completed for all critical infrastructure, nation owned buildings, and residences within the AOI. For the Tla'amin First Nation, improvements need to be made for the water distribution system, an assessment of the infrastructures will identify where improvements need to be made for wildfire mitigation.

Retrofitting structures to ensure FireSmart compliance in construction materials is costly, complicated, and often takes time. In contrast, landscaping maintenance is relatively cheap, and provides immediate benefits for wildfire risk reduction.

Ensuring new construction is compliant with FireSmart guidelines is a key way to ensure community resilience. Although retrofitting of existing structures is also recommended, ensuring new builds are of FireSmart materials and design will avoid costly refits in the future. The Nation should work with Federal funders to ensure provided designs incorporate FireSmart design principles. Residents that opt to develop their own homes and designs should also be encouraged to incorporate FireSmart design principles. When building new community structures design teams should be required to comply with FireSmart principles. These guidelines can be included in any future Housing Plans or Housing Strategies developed for the Tla'amin community.

The Chief Administrative Officer (CAO) is interested in investigating the possibilities of insurance agreements focused on FireSmart, highlighting the need for attention to insurance details that affect the community.

Table 12. FireSmart Development Consideration action recommendations.

Recommended Action	Description
12	Advocate for BC building code to require FireSmart principles.

7.5 Interagency Cooperation

It takes the collaborative efforts of multiple collaborators 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' provincial government, and residents in and around the AOI. Individually, representatives of these groups are responsible to their own organizations, but all of the collaborator organizations are dependent upon each other for Regional wildfire resilience. Interagency Cooperation includes collaboration between staff and community members, community forests, local forestry companies, as well as with external representatives like FNESS, BCWS, and Regional District representatives.

7.5.1 Current Status

Tla'amin Nation has mutual aid agreements with other neighboring fire protection agencies. Thus, maintaining these agreements for reliance during fire events is crucial for the nation. The Tla'amin Nation has signed an agreement for mutual aid with qRD, the city⁵⁵ Tla'amin also has a service agreement in place with BCWS for aid in wildfire suppression⁵⁶. This agreement is due to renew with BCWS as this plan is developed. This is something Tla'amin is very interested in maintaining and continuing to build upon the relationship for planning. The Fire Chief works closely with volunteers that respond at all hours and all firefighters work alongside members of other departments. Maintaining these agreements is crucial in interagency cooperation.

7.5.2 Action Planning

Providing the Tla'amin Nation emergency personnel with cultural and safety training addresses the operational needs of the community and identify where interagency cooperation is needed for wildfire suppression. Similarly, continued participation in the Wildfire Resiliency and Training Summit fosters knowledge sharing and skill development, and exchanges between professionals within the BC wildfire industry.

As mentioned above in FireSmart foundations section, the Community FireSmart and Resiliency Committee is an important pillar to share information and progress about challenges and successes amongst Electoral Areas. Tla'amin Nation representatives should consider participation in the future CFRC. This will ensure Tla'amin specific concerns are integrated into Regional wildfire resiliency planning, and provides an opportunity to integrate the Tla'amin perspective into these planning activities.

Table 13. FireSmart Interagency Cooperation action recommendations.

⁵⁵ See: <https://www.prpeak.com/local-news/qathet-regional-fire-departments-emergency-services-agreement-endorsed-4323940>

⁵⁶ Tla'amin Nation, Canada, British Columbia, and Tla'amin Government. 2011, 20AD. "TLA'AMIN WILDFIRE SUPPRESSION AGREEMENT."

Recommended Action	Description
13	Provide Indigenous cultural safety training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.

7.6 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.

Cross-training ensures that firefighters and first responders within the community are trained in both structural and basic wildfire suppression.⁵⁷ For communities within the WUI it is important that professionals are well trained to ensure proper response to fire. Some training programs available are:

- Basics wildland fire training
- Structure protection training
- Incident Command System training
- Local FireSmart Representative training
- FireSmart Home Partners Mitigation Specialist training
- FireSmart Neighbourhood Champion workshop

7.6.1 Current Status

The Tla'amin Nation Fire Department currently has 2 engines and several Trucks equipped with pumps. Tla'amin regularly participate in training exercises. There is currently minimal cross training between the Tla'amin Fire Department and BCWS staff and other fire departments in the Region. Cross-training with other agencies builds relationships and response systems that can assist with a seamless unified response in the event of a wildfire.

⁵⁷ Digital, Ambr. "Cross-training | FireSmart BC." FireSmart BC, December 17, 2020. <https://firesmartbc.ca/discipline/cross-training/>.

7.6.2 Action Planning

There are opportunities for Tla'amin fire response staff to draw on local expertise to increase both internal capacities, but also to develop cross-agency relationships to improve fire response. Annual cross-training exercises, such as table top workshops, are a key opportunity to strengthen these relationships in advance of wildfire.

Table 14. FireSmart Cross-Training action recommendations.

Recommended Action	Description
14	Training for FireSmart Positions held by the various jurisdictions such as: - Tla'amin Nation to apply for their own FireSmart Coordinator position. - Grow the Home Partner's program.
15	Continue Cross-training of fire department members, including structural fire and interface wildfire training. Ensure that local and provincial fire services work together to develop and test coordinated response.

7.7 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 as a whole.

The Community Wildfire Resiliency Plan (CWRP) is closely related to Emergency Plans, which are high level plans outlining the local government or First Nation government's response procedures for various scenarios. An emergency management plan is beneficial in coordinating response efforts and increasing efficiency and effectiveness of communications and evacuations in the event of an emergency. An emergency management plan should focus on emergency preparedness, response activities, and recovery.

7.7.1 Current Status

The Tla'amin Nation's emergency program is run through its administration with a full-time emergency program coordinator. This is a relatively new position and program. Currently this program is developing a Community Evacuation Plan, which was in draft during development of this CWRP.

Emergency planning in the qRD is Regionalized, meaning emergency planning is managed at the Regional scale by the qRD for the Regional District Electoral Areas and the City of Powell River. The Tla'amin Nation collaborates on many Regional emergency planning initiatives. The Tla'amin emergency program coordinator is a key link between Regional emergency planning and the Tla'amin Nation. qRD emergency planning services⁵⁸ has in the past provided wildfire planning, including an evacuation guide specific to the Tla'amin Nation.⁵⁹

The qRD has a community notification system in place.⁶⁰ This voluntary service alerts subscribers via land line, cell phone, text message, and email of important emergency events including wildfire evacuations, hazardous materials incidents, floods, and other public safety concerns.

7.7.1 Action Planning

Emergency planning is crucial for ensuring community protection through wildfire preparedness and response actions. Assessing, inventorying, and purchasing FireSmart structure protection equipment are critical actions for safeguarding homes and infrastructure during wildfire events. Participating in cross-jurisdictional meetings and tabletop exercises fosters collaboration between agencies and collaborators, enabling coordinated strategies for wildfire preparedness, suppression, and seasonal readiness. For remote communities, assessing structure protection unit inventory and acquiring additional resources

⁵⁸ Qathet Regional District. "Emergency Services | Emergency Preparedness | Qathet Regional District." Qathet Regional District, June 13, 2024. <https://www.qathet.ca/services/emergency-services/emergency-preparedness/>.

⁵⁹ Community Evacuation Guide Tla'amin Nation. Guide, 2020. https://www.qathet.ca/wp-content/uploads/2020/09/qRD05_EVAC_Bro_TLAAMIN_online.pdf.

⁶⁰ "Sign up - Smart911," n.d. <https://www.getrave.ca/smart911/ref/reg.action?pa=qathetrd>.

enhances their ability to respond effectively to emergencies where logistical challenges may delay external support. Leveraging resources like the Emergency Preparedness Guides during community preparedness events empowers residents with knowledge and tools to reduce wildfire risk and strengthen resilience. These actions form a comprehensive approach to proactive emergency planning, enhancing both community safety and response capacity.

Table 15. FireSmart Emergency Planning action recommendations.

Recommended Action	Description
16	Consider purchase of FireSmart structure protection equipment for Island communities and Tla'amin Nation. Currently lacking SPU's for Savary, Lasqueti, Tla'amin. Logistically, the islands would greatly benefit from having access immediately should they need it due to structure density. Tla'amin should also consider purchasing their own.
17	Assess community water delivery ability as required for suppression activities, limited to current water system evaluation and available flow analysis. Improve Tla'amin Nation's water distribution, access and facilities to better respond to wildfire and structure fire.
18	Participate in a series of cross-jurisdictional meetings focusing specifically on tabletop exercises relating to wildfire preparedness and suppression with the goal of leading toward an actual multi-agency/mutual aid exercise.
19	Purchase ancillary equipment including hoses, fittings, portable pumps for outdated equipment.
20	Use all local materials to promote community emergency preparedness events focused on wildfire. Include priority understanding for shelter in place vs. evacuations.
21	Create a guide to re-entry after evacuation/ Emergency Recovery Plan.

7.8 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.

Fuel management, also referred to as vegetation management or fuel treatment, is an important element of wildfire risk reduction within the WUI. This work requires extensive planning, and proper training to achieve the desired results. Vegetation management within and around the community can be accomplished through two different activities, residential scale FireSmart landscaping and fuel management treatments.

Residential scale FireSmart landscaping consists of the removal, reduction, or conversion of flammable plants (such as landscaping for residential properties, parks and open spaces) in order to create more fire-resistant areas in FireSmart zones. The scale of this work is small, both in terms of the total area and the intensity of treatment required. This work is generally lead by the property owner on a voluntary basis, with the local government providing FireSmart assessments, reference material, and broad guidance. These FireSmart assessments can be upscaled to the neighbourhood level, providing opportunities for neighbours to work together to achieve neighbourhood resilience to wildfire through the [FireSmart Canada Neighbourhood Recognition Program](#).⁶¹

Fuel management treatment involves the manipulation or reduction of fuels to reduce the rate of spread and head fire intensity, and enhance the likelihood of successful suppression, usually outside of the FireSmart zones. This is completed using heavy equipment or manual work to remove, prune, and dispose of hazardous vegetation, or through prescribed burning. This type of project is at a large scale, ranging from a few hectares up to several hundred hectares. Fuel management typically occurs on public land, and is led by local, provincial, or First Nation governments to proactively reduce wildfire risk to communities.

Given the scale of the work, detailed planning is required for fuel management treatments. This planning work is completed through a fuel management prescription, developed by a Registered Professional Forester. The fuel management prescription outlines objectives for fuel management, strategies to achieve those objectives, and wildfire behaviour modelling to rationalize those objectives and strategies. This fuel management prescription is then implemented over several months or years by third party contractors, often with qualified professional supervision. Upon completion, a post-treatment assessment is required to confirm wildfire risk reduction objectives have been met.

⁶¹ "Neighbourhood Recognition Program | FireSmart Canada," n.d. <https://firesmartcanada.ca/programs/neighbourhood-recognition-program/>.

7.8.1 Current Status

The Tla'amin Nation is very active in the forestry industry in the Region, operating a forest company to the benefit of Nation member. The Tla'amin Nation Forest Resource Plan⁶² integrates Tla'amin Nation perspectives into forest management planning, ensuring Nation priorities are foundational to forest management within the Region. This includes priorities such as protecting riparian ecosystems. Tla'amin Nation contractors have also been involved in fuel management treatments, and their experience will be an asset to the Region as a whole for implementing fuel management prescriptions.

Tla'amin has an area of land where there is a hybrid poplar stand of deciduous trees that is very low hazard. If they wanted to continue to plant those near community and diversity logged areas. Below you can find all areas of proposed fuel management activities (Table 17).

The Region's natural forest types as are less prone to ignition and sustained fire spread when compared to BC's Interior drier forests. In fact, many older forests (> 100 years old) within the WUI exhibit forest fuel conditions like a mature C-5 fuel type which would generally be classified as a 'low' fire threat and risk to communities. Since these forests already have low threat conditions, the authors have not recommended extensive proposed fuel treatments and it is recommended that these types of units be retained over time rather than harvested or fuel treated.

7.8.2 Action Planning

A recommended responsibility for any landscaping crews that the Nation has is providing landscaping services to community buildings and local residents. This would consist of removing long grass with mowers and weed snippers, and ensuring regular maintenance during growing season to keep grass short. Another option is to create 1.5m non-combustible zones around structures with gravel, which in addition to being non-combustible, limits vegetation growth.

The immediate priority for FireSmart maintenance is the various community buildings and accessory structures. Vegetation should be managed within 10m of all structures and accessory buildings. Within this zone, combustible materials such as long grass and wood should be removed. This should be completed at the beginning of fire season in the spring, and regularly maintained during fire season.

Beyond these localized efforts, broader vegetation management strategies should be pursued to enhance wildfire resilience across the Tla'amin Nation. Working with FNESS to incorporate cultural prescribed burning on First Nation lands is a key wildfire prevention strategy. Additionally, collaborating closely with Tla'amin Forestry partners in Industry to integrate wildfire planning into their management plans is crucial for wildfire prevention.

⁶² "Tla'amin Forest Resource Plan," n.d. <https://www.tlaaminnation.com/forest-resource-plan/>.

Table 16. FireSmart Vegetation Management action recommendations.

Recommended Action	Description
22	Recognize the potential for trails in parklands and establish hand guards/fuel breaks and access/anchor points. Look to enhance wherever possible.
23	Apply for provincial funding to support maintenance for existing fuel treatments, as well as treating areas that are low risk to maintain this status stretch of Highway 101 between Wildwood to Tishosum
24	Implement and encourage landscaping using FireSmart vegetation management principles. - Advocate for good deciduous species versus high risk- low growing conifers (cedar hedges, juniper) - Implement landscaping efforts towards pruning for mature conifers and mitigating ladder fuels next to sheds. Clearing low lying branches, piles, saplings and coniferous species next to structures.
25	Work with FNESS to incorporate cultural prescribed burning on First Nation lands.
27	Work closely with Tla'amin Forestry partners in Industry to maximize on fuel treatment areas and incorporate wildfire planning into their management plans.
31	Licensees should consider planting deciduous species post-harvest in areas near the WUI to lower the amount of high-risk conifers.

7.8.3 Proposed Fuel Treatments

Table 17. Proposed Fuel Management Treatment Summary Table

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Mod	Low		
TU-16	40.2	Fuel Treatment for Egress	-	-	40.2	Within IR, unit would need to be done in collaboration with nation.	This unit would be for Tla'amin if wanting to treat something closest to their townsite.



Figure 27. Proposed Fuel Management Treatment Areas within the WUI of Tla'amin First Nation Treaty Lands

8 City of Powell River

8.1 Summary

Several recommendations are similar for the City of Powell River as those for the Regional District's rural areas. The risks and action items recommended at the beginning of this document should be considered in order to address wildfire risks for the City of Powell River.

Additionally, the city should find effective solutions for managing waste debris. The waste that will come from private property for FireSmart fuel reductions as well as any land clearing that takes place no longer has a hog fuel disposal location after the mill closed down. The Regional District's waste transfer station may offer some opportunities for property debris disposal but this currently appears to be a limited option. A safe, albeit limited, alternative that has been explored on the coast is an air curtain burner that qRD currently has access to though this also comes with challenges to manage smoke concerns and may not be appropriate at certain warmer and drier times of year.

The City of Powell River should continue enforcing legislation related to wildfire prevention such as open burning bylaws, fireworks regulation and implementing burning bans as directed by the province/fire center. Open fire bylaws should be enforced, especially during high hazard periods, but the City may consider exemptions during periods where homeowners could safely and responsibly use fire to mitigate fuels on the larger, more rural properties.

The BC building code currently does not require new structures be built to FireSmart principles thereby missing the opportunity to minimize wildfire risk in all new developments.

The City is in the process of developing a Development Permit Area (DPA) for wildfire protection to enhance safety in the community. This will further inform developers and land planners about ways to minimize the fire hazard in the community.

For vegetation management the City may consider-clearing surface fuels on trails to 10m on either side for ignition reduction potential, which could potentially be accomplished with parks staff, volunteers, local wildfire crews or support from the Regional FireSmart program on a case-by-case basis. This is a fuel treatment strategy where firefighters can utilize the trails as hose lay networks and reduce the spread of ground fires across them if a fire ignites within municipal park land. When focusing on urban areas it is also important to remove invasive plants like the bramble and Scotch Broom wherever possible, continuing to foster relationships with volunteer organizations such as the Broombusters and trails groups to maximize capacity wherever possible.

8.2 Education

The education FireSmart discipline focuses on communicating wildfire risk and wildfire resilience information to all the members of a community. Every member of a community, from residents to land managers and elected officials, has a shared responsibility for wildfire resilience. The responsibilities for wildfire risk mitigation vary, but an understanding of wildfire risk and resilience are of importance to all community members. The ultimate goal of the education FireSmart discipline is to create an understanding of wildfire risk, which can in turn empower residents to act within their capacity to build community resilience.

Active education involves specific events, conversations, and presentations that meet residents and provide information. Active education is most successful when leveraging pre-existing community gatherings to add on a FireSmart education component. For example, setting up a booth with FireSmart education materials and staff at a community gathering. Leveraging pre-existing events removes barriers by meeting people where they are already gathering, rather than asking them to make time for specific events. However, specific FireSmart events are also important as they provide a focused venue for FireSmart education. This may include a community FireSmart meeting, presentation, or open house, where residents can access materials and ask questions of FireSmart experts.

Passive education involves providing access to FireSmart educational materials that residents can access on their own schedule. This may involve a specific webpage on the community's website with FireSmart material, or providing brochures with FireSmart materials at regular community gathering places such as City Hall, or Recreation Centre. Passive materials should also aim to create opportunities for active engagement, such as advertising FireSmart events, or providing contact information for a FireSmart expert to provide additional information.

8.2.1 Current Status

The qRD FireSmart Coordinator has trained 12 of its members in the Home Partners Program in the Powell River area. Successful education programming typically requires capacity, which is best developed through the FireSmart Coordinator position discussed in the previous section with support needed from the trained volunteers. Involving PRFR firefighters wherever appropriate would help to build relationships and provide the community more comprehensive fire education. The qRD FireSmart Coordinator will be responsible for developing and rolling out the FireSmart education initiatives within the City of Powell River.

8.2.1 Action Planning

The recommended actions for the City of Powell River focus on awareness, engagement, and collaboration within the community. Prioritizing initiatives such as FireSmart events and fostering collaboration with BCWS will help the community learn about and understand wildfire risks. Additionally, activities like annual cleanup days will provide opportunities to bring the community together and promote wildfire awareness. Collectively, these actions establish a comprehensive framework for educating the community on wildfire risk reduction efforts.

FireSmart education should be conducted within the overall Regional context, planning out the various initiatives as part of campaign to build community awareness. Developing an annual FireSmart education plan ensures the events and initiatives are coordinated, taking advantage of seasonal trends and regular community gatherings.

FireSmart education priorities should focus on helping residents understand the relative risk of spreading fires within the City of Powell River, the very limited risk of fires spreading from the rural areas toward the City, the role of slope, wind, and fine fuels in fire spread, and the heightened importance of reducing flammable fuels and applying FireSmart principles in the neighbourhood setting.

Table 18. FireSmart Education action recommendations.

Recommended Action	Description
1	Continue to emphasize FireSmart education events and open houses Focused on FireSmart concepts and activities occupants can do around their homes to reduce fire hazard.
2	Continue to participate in a FireSmart Resiliency Committee. The Committee should discuss future FireSmart programming and structure moving forward.
3	Confirm communication plan, (previously completed with Regional partners) and communicate key risks and recommendations each community can take.
4	Work with BCWS to improve communication during wildfire incidents and improve real time information
5	Promote education to - Support fuel management activities and including prescribed and cultural burning - Maintain current fuel breaks; irrigating and mowing sports fields, - Planting more deciduous shade trees - Distribute FireSmart educational resources, such as FireSmart 101, Wildfire Risk Reduction Basics, FireSmart Canada Ambassador training, FireSmart Begins at Home app, social media, FireSmart BC materials. - Increase awareness of local fire regime included in this plan. (Speak to historical fire in the area, return intervals and coastal ecosystems)

Recommended Action	Description
6	Organize annual Community Cleanup Day(s), with assistance to community members in cleaning their yards of combustible materials as well as assistance disposing of these materials (chipper rental if required, trailers for moving waste).
7	Support the FireSmart BC Plant Program at local garden centres or nurseries. Includes plant tags, banners, staff buttons and in-store advertising.

8.3 Legislation and Planning

Legislation and regulation are potential tools for reducing wildfire risk on public land. Provincial and Federal Acts and Regulations can provide means for local governments and First Nation governments to implement wildfire risk reduction. These are differentiated from development specific bylaws and regulations that may be present in a community, which are discussed in the following section on Development Considerations.

8.3.1 Current Status

The City of Powell River maintains a bylaw regulating open fires within the municipality. The primary focus should be ensuring community members are complying with the existing bylaw along with OBSCR and the *Wildfire Act* whenever applicable. There are some larger properties and parks within the city's boundary that could potentially benefit from the use of fire to minimize fuel loading. The City of Powell River could consider exemptions to allow burning in these locations when conditions allow and when the property owner has appropriate burning plans in place.

8.3.2 Provincial Acts and Regulations

Three provincial acts and regulations are particularly relevant for wildfire risk mitigation: the BC Building Act and Regulation⁶³, the BC Open Burning and Smoke Control Regulation⁶⁴, and the BC Wildfire Act and Regulation.⁶⁵ The Forest and Range Practices Act is also relevant for larger scale wildfire risk mitigation work.

The *BC Building Act* creates a series of technical building requirements for buildings in BC. This also sets training and qualification requirements for building officials. Many of these requirements are designed to limit the spread of structure fire within a structure, however there are no provisions for limiting interface wildfire spreading to a structure.

BC Open Burning Smoke Control Regulation (OBSCR) covers open burning of wood debris (vegetative material) to manage smoke and fine particulate matter from contributing to poor air quality. OBSCR has requirements that pertain to burning for community wildfire risk reduction. The OBSCR requires anyone conducting an open burn for wildfire risk reduction to submit the plan to a director, to give notification to the community about the burn plan, that a ventilation forecast is "good" or "fair", and that the burn is completed within a day.

BC Wildfire Act and *Wildfire Regulation* sets out legal responsibilities and obligations in BC that are enforceable during bans and restrictions. This Act and regulations could impact this CWRP recommendations and treatments when a provincial fire ban is in effect. *The Wildfire Act* also limits

⁶³ *Building Act, Statutes of British Columbia 2015 c. 2.*

<https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/15002>

⁶⁴ *BC Environmental Management Act: Open Burning Smoke Control Regulation BC Reg 152/2019, Statutes of British Columbia 2003, BC Reg 152/2019.* https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/152_2019/

⁶⁵ *BC Wildfire Act, Statutes of British Columbia 2004 c. 31.*

https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/04031_01

industrial activities during periods of elevated wildfire danger based on the risk of ignition of those activities. These acts and regulations can be superseded by a local bylaw or regulation.

8.3.3 Federal Acts and Regulations

Several key Federal Acts that may be relevant within the City or Powell River are the *Fisheries Act*⁶⁶, the *Species at Risk Act*,⁶⁷ and the *Migratory Birds Convention Act*⁶⁸.

The Federal *Fisheries Act* is in place to provide a framework for the management and control of fisheries in Canada, as well as conservation and protection of fish and fish habitat. Any wildfire prevention and mitigation treatments that could impact fish or fish habitat, including riparian areas will need to adhere to the legal requirements of this Act.

The *Species at Risk Act* is federal legislation designed to prevent species from extinction and/or extirpation in Canada and provide recovery strategies for extirpated, endangered, and threatened species, as well as prevent species of concern from becoming threatened or endangered. The CWRP treatments and recommendations will need to consider species at risk and follow the requirements and prohibitions set out in SARA. Any land management should consider the environmental values at risk section to identify any species at risk, and include measures for ensuring compliance with the *Species at Risk Act*.

The *Migratory Birds Convention Act* protects most species of birds in Canada. This law contains regulations to protect birds, their nests and eggs from disturbance. This includes direct disturbance through hunting, wood harvesting, and commercial use, as well as indirect disturbance that may impact bird activities. Any land management activity that has potential to disturb birds protected under this Act must include measures for compliance with the Act. This is particularly important during summer nesting season, when bird populations are highest throughout BC.

8.3.4 Action Planning

The recommended actions for legislation and planning aim to improve practices that enhance wildfire resilience across the community. Developing FireSmart practices for publicly owned spaces, along with conducting FireSmart assessments, will enable the community to proactively reduce wildfire risks. Additionally, promoting understanding and enforcement of the open burning bylaw, while considering exemptions whenever appropriate for reducing fuels will help toward building a safer, more resilient community.

⁶⁶ *Fisheries Act, Revised Statutes of Canada 1985, c F-14.* <https://laws-lois.justice.gc.ca/eng/acts/f-14/>

⁶⁷ *Species at Risk Act, Statutes of Canada 2002, c. 29.* <https://laws.justice.gc.ca/eng/acts/s-15.3/>

⁶⁸ *Migratory Birds Convention Act, Statutes of Canada 1994 c.22.* <https://laws.justice.gc.ca/eng/acts/M-7.01/>

Table 19. FireSmart Legislation and Planning action recommendations.

Recommended Action	Description
8	Ensure the design and maintenance of public land such as parks and greenspaces consider FireSmart practices.
9	Renew FireSmart assessments for eligible buildings, publicly and First Nations owned critical infrastructure, culturally significant sites and/or green spaces.
10	Review vegetation management practices with MOTT and BC Hydro. Ensure right of ways and debris management is compliant with provincial regulations.

8.4 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 and may impact 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.

8.4.1 Development Considerations: Current Status

The BC building code currently does not require new structures be built to FireSmart principles thereby missing the opportunity to minimize wildfire risk in all new developments.

The current status of development considerations is ongoing within the city of Powell River. There is currently a wildfire DPA in the process of being created and should be implemented for future permitting of new construction projects. The city has the most meticulous permitting of all the governing jurisdictions within the qRD. One of the positives within the city are most of the new structures are generally compliant with FireSmart guidance for building materials and design. However, older buildings within the community present higher fire risks with non-compliant features such as sidings and soffits with combustible materials and unscreened vents. Because the building code does not require adherence to FireSmart principles a new home can still be clad with combustible siding and roofing. The most common deficiencies in the structures are combustible decks, stairs, and fences, as well as combustible accessory buildings within 10m of the structures. The most common and significant landscaping issue is long, unmaintained grass, cedar hedges and high-risk ornamentals such as mugo pines and junipers near or directly adjacent structures (e.g. the immediate and intermediate zone, see Figure 26). Residents that opt to develop their own homes and designs should also be encouraged to incorporate FireSmart design principles.

8.4.2 Action Planning

Implementing Wildfire Development Permit Areas (DPAs) as part of the permitting process will help ensure that new construction adheres to FireSmart principles. This framework encourages safer building materials and design practices, minimizing fire risks for future developments.

By involving fire services and emergency management personnel in these processes and collaborating across jurisdictional boundaries, the city can proactively incorporate wildfire risk mitigation into its growth.

Table 20. FireSmart Development Consideration action recommendations.

Recommended Action	Description
11	Ensure awareness and consideration of FireSmart principles into the design of subdivisions
12	Advocate for BC building code to require FireSmart principles

8.5 Interagency Cooperation

It takes the collaborative efforts of multiple collaborators 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, provincial government, and residents in the area. Individually they are responsible to their own organizations, but all of the collaborator organizations are dependent upon each other to develop an effective Community Wildfire Resiliency Plan and undertake a successful wildfire response.

8.5.1 Interagency Cooperation: Current Status

As mentioned above in FireSmart foundations section, the Community FireSmart and Resiliency Committee is an important pillar to share information and progress about challenges and successes amongst Electoral Areas. Having the FireSmart coordinator lead the CFRC benefits increased interagency cooperation to increase FireSmart awareness and community support and implement FireSmart and wildfire risk reduction activities over a broader area. The following are recommended action items moving forward in regard to FireSmart Interagency Cooperation:

8.5.2 Action Planning

The recommended actions for interagency cooperation emphasize the importance of collaboration and knowledge-sharing to enhance wildfire resilience across jurisdictional boundaries. Participating in fuel management planning, cultural and prescribed burning will help align efforts among communities, local governments, and provincial agencies. Establishing a local or Regional Community FireSmart and Resiliency Committee, including representatives from First Nations and other key collaborators, will create a collaborative approach to wildfire risk reduction. Providing Indigenous cultural safety training to emergency management personnel will further strengthen partnerships with Indigenous communities, ensuring culturally informed and effective wildfire prevention and response efforts.

Table 21. FireSmart Interagency Cooperation action recommendations

Recommended Action	Description
13	Provide Indigenous cultural safety training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.

8.6 Cross-Training

Wildland-Urban Interface resiliency planning and incident response draw on many different professions who do not typically work in a 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.

8.6.1 Cross-Training: Current Status

For Powell River training and teamwork between BC Wildfire Service, FireSmart representatives, and the neighbouring local fire departments is important for fire safety. Regular training helps everyone understand their roles during a wildfire. Firefighters gain valuable skills, and local knowledge is shared, making the community better prepared for fire emergencies. There is currently minimal (generally once per year) cross training between fire departments and BCWS staff on the mainland. Increased participation in cross training exercises between BCWS and PRFR firefighters would be beneficial for preparedness.

8.6.2 Action Planning

Implementing targeted training initiatives, such as training for FireSmart positions ensures that the various organizations involved in the community have the necessary knowledge and skills for mitigating wildfire risks effectively. Additionally, providing cross-training for fire department members in both structural fire and interface wildfire techniques strengthens their capacity to respond to diverse fire scenarios. These actions collectively enhance diverse teams and personnel to respond effectively to different and complex wildfire incidents.

Table 22. FireSmart Cross-Training action recommendations.

Recommended Action	Description
14	Training for FireSmart Positions held by the various jurisdictions such as: - Tla'amin Nation to apply for their own FireSmart Coordinator position. - Grow the Home Partner's program.
15	Continue Cross-training of fire department members, including structural fire and interface wildfire training. Ensure that local and provincial fire services work together to develop and test coordinated response.

8.7 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 as a whole.

8.7.1 Emergency Planning: Current Status

While any evacuation, even small ones, can be tremendously challenging, the City of Powell River is relatively well positioned to handle the event of a fire evacuation. The City's long and narrow development footprint bordering the ocean along its western perimeter means that any difficult fire event will likely only directly impact one area of the city meaning that in most cases safe places for evacuation will exist north or south of the incident. Logistical difficulties include one narrow highway heading from the city to rural areas and lack of commercial sheltering facilities outside the city centre. The community itself is well established to withstand a wildfire with plenty of inherently FireSmart properties and facilities however this is still need and room for continual improvement.

The City of Powell River participates within the Regional District Emergency Preparedness Service⁶⁹ that includes wildfire planning, and development of emergency evacuation guides⁷⁰. The public community evacuation brochure is an easy-to-understand document for residents and tourists to understand. The Region has a community notification system in place that may alert subscribers via land line, cell phone, text message, and email of important emergency events including fire evacuations, hazardous materials incidents, floods, and other public safety concerns.

8.7.2 Action Planning

Emergency planning is crucial for ensuring community protection through wildfire preparedness and response actions. Assessing, inventorying, and purchasing FireSmart structure protection equipment are critical actions for safeguarding homes and infrastructure during wildfire events. Participating in cross-jurisdictional meetings and tabletop exercises fosters collaboration between agencies and collaborators, enabling coordinated strategies for wildfire preparedness, suppression, and seasonal readiness. Leveraging resources like the Emergency Management BC Wildfire Preparedness Guide during community preparedness events empowers residents with knowledge and tools to reduce wildfire risk and strengthen resilience. These actions form a comprehensive approach to proactive emergency planning, enhancing both community safety and response capacity.

Community evacuation discussions frequently centre on use of the ferries and while it is conceivable that ferries will be useful or even necessary in the aftermath of a fire evacuation the initial priorities for

⁶⁹ ——. "Emergency Services | Emergency Preparedness | Qathet Regional District." Qathet Regional District, June 13, 2024. <https://www.qathet.ca/services/emergency-services/emergency-preparedness/>.

⁷⁰ "COMMUNITY EVACUATION GUIDE," season-01 2024. https://www.qathet.ca/wp-content/uploads/2024/11/qRD_EVAC_brochure-Powell1.pdf.

fire evacuations should focus on expediting residents to areas of immediate safety and staging areas that should exist along the mainland hwy 101 corridor. Engagements with BC Ferries and other marine operators should continue given their critical role in both resident transport as well as the means for transporting emergency supports such as neighbouring fire apparatus and other surge supports.

Table 23. FireSmart Emergency Planning action recommendations.

Recommended Action	Description
18	Participate in a series of cross-jurisdictional meetings focusing specifically on tabletop exercises relating to wildfire preparedness and suppression with the goal of leading toward an actual multi-agency/mutual aid exercise.
19	Purchase ancillary equipment including hoses, fittings, portable pumps for outdated equipment.
20	Use all local materials to promote community emergency preparedness events focused on wildfire. Include priority understanding for shelter in place vs. evacuations.

8.8 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.

The Region's natural forest types as are less prone to ignition and sustained fire spread when compared to BC's Interior drier forests. In fact, many older forests (> 100 years old) within the WUI exhibit forest fuel conditions like a mature C-5 fuel type which would generally be classified as a 'low' fire threat and risk to communities. Since these forests already have low threat conditions, the authors have not recommended extensive proposed fuel treatments and it is recommended that these types of units be retained over time rather than harvested or fuel treated.

8.8.1 Current Status

The work undertaken within the Penticton trails area is the largest example withing the Region and widely regarded as a successful fuel management treatment. This 34-hectare fuel treatment within the boundaries of the City of Powell River was implemented in 2019 and bolstered by subsequent treatments carried out by the provincial staff in the portion of Penticton Trails immediately outside the municipal boundary. The Cranberry fuel management prescription is currently undergoing treatment operations.

Operationalizing vegetation management projects requires a tremendous amount of effort and involves significant cost generally supported with provincial funding. Consideration should be given to moving away from postage stamp treatments and trying to be most efficient with local efforts and provincial funding money with the aim of minimizing fuel loading across the widest area. Improved trails clearing practices and encouraging the maintenance of old growth resilient fuel types could help to this goal.

8.8.2 Action Planning

Vegetation management is a critical component of wildfire risk reduction, as it focuses on minimizing fuel loads. The city of Powell River should continue to prioritize fuel management wherever practical within its jurisdiction.

Given that human ignitions within city parks and green spaces are a primary concern, parks crews and trails crews should prioritize maintaining trails edges with minimal vegetative debris. Wherever possible coarse woody debris should be minimized up to 10m from the trails. This would reduce the likelihood of ignitions spreading directly from the trails into its surrounding areas. Reduced fuel loading along trails would also provide safe access and egress for firefighters to most quickly extinguish any fires.

Table 24. FireSmart Vegetation Management action recommendations.

Recommended Action	Description
22	Recognize the potential for trails in parklands and establish hand guards/fuel breaks and access/anchor points. Look to enhance wherever possible.
23	Apply for provincial funding to support maintenance for existing fuel treatments, as well as treating areas that are low risk to maintain this status • Penticton Trails • stretch of Highway 101 between Wildwood to Tishosum
24	Implement and encourage landscaping using FireSmart vegetation management principles. • Advocate for good deciduous species versus high risk- low growing conifers (cedar hedges, juniper) • Implement landscaping efforts towards pruning for mature conifers and mitigating ladder fuels next to sheds. Clearing low lying branches, piles, saplings and coniferous species next to structures.
26	Work closely with all local forest industry operators, such as Powell River Community forests to maximize on fuel treatment areas and incorporate wildfire planning into their management plans.

Recommended Action	Description
30	Promote mitigating flammable invasive species on vacant lots in the municipality.

8.8.3 Proposed Fuel Treatments

Table 25. Proposed Fuel Management Treatment Summary Table

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Mod	Low		
TU-1	33.2	FTU	-	33.2	-	Borders municipal land to the north and private in all other directions.	Conifer forest near airport poses threat to infrastructure. Could be an opportunity for thinning and surface fuel reduction.
TU-3	22.7	Airport FTU	-	-	22.7	Borders Road and right of way to the north and municipal land to the south. This parcel is owned by Tla'amin but is adjacent and within the City boiundary. Collaborations would be required on this unit.	Threatening forest to the north of the airport infrastructure presents and opportunity for fuel reduction to protect buildings
TU-6	20.0	Penticton Trails north	-	20.0	-	Known foot trails within forest area, used by local residents	Threatening conifer fuel type in close proximity to major structure

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Mod	Low		
							density.
TU-7	34.1	Maintenance	-	-	34.1	Some foot trails within forested area, unit also borders private land parcels of high density to the west and south	Maintain reduced fuel loads within low threat forested area to protect homes.
TU-8	2.02	FTU	-	2.02	-	Water tower	High Wildfire threat assessment with slope heading up towards local water supply. Small wooden electrical line on municipal land.

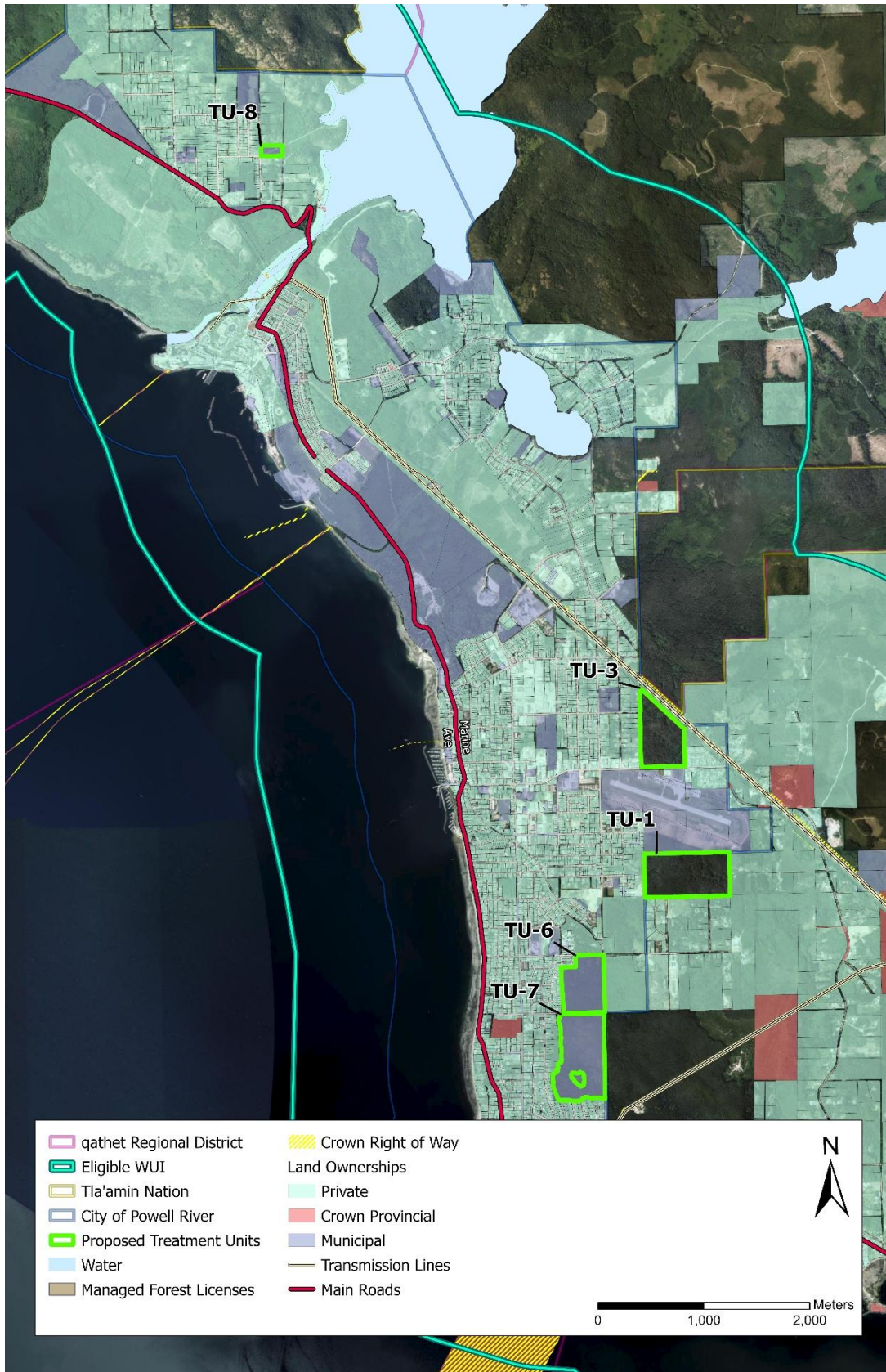


Figure 28. Proposed Fuel Management Treatment Areas within the WUI of City of Powell River

9 Regional District Mainland (Electoral Area A, B & C)

9.1 Summary

The following sections will focus on FireSmart recommendations for the qRD Mainland, including Electoral Areas A, B and C. Geographically including all three of these electoral areas together makes sense as these areas all have similar threat profiles.

Efforts should be made to treat around recreation trails in forested areas and can improve access for firefighters and reduce ignition risk. Encouraging community cleanup days on private lands will help manage fuel loads, involving residents in removing debris and maintaining clear spaces around homes.

Focusing on fuel management treatments, in conjunction with the provincial Wildfire Risk Reduction (WRR) program, will help minimize fire spread and protect the community. The Regional district should pursue and support the identification and development of larger landscape level fuel breaks for future fuel treatment projects.

Increasing public and professional awareness regarding the Region's wildfire risk will reduce complacency. Providing proper wildfire training for structural firefighters will enhance their effectiveness in wildfire events. Hosting public events to raise awareness about wildfire resilience and providing access to available programs will foster a collective approach to reducing fire risks in the community. Conducting regular emergency preparedness drills in community to ensure everyone knows what to do in case of a wildfire would also be helpful. These drills will help families and individuals respond quickly and safely when needed.

9.2 Education

Public education and outreach efforts help community members learn about wildfire and its potential impacts to their community. 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.

9.2.1 Current Status

Successful education programming requires capacity, which is best delivered through the FireSmart Coordinator position with support from the trained volunteers. The FireSmart Coordinator will be responsible for developing and rolling out the education initiatives below.

FireSmart education should be conducted regularly, planning out the various initiatives as part of campaign to build community awareness. Developing an annual education plan ensures the events and initiatives are coordinated, taking advantage of seasonal trends and regular community gatherings.

Active Education is the first step of Education is to ensure community leaders and members can access and understand this CWRP. The CWRP is a large and complex technical document, and is unlikely to be read in full by all members of the community. As such, a summary overview should be provided to community leaders and members. This should include the Executive Summary, the Action Plan, and the wildfire risk map within this CWRP

Passive Education is important to provide educational opportunities that community members can access on their own schedule. FireSmart and CWRP information should be posted wherever residents typically access community information, such as the RD's website, or any gathering places with poster boards. Social media is also an excellent avenue for distributing FireSmart information. These efforts should be concentrated in the spring and summer, during peak wildfire danger, in the form of a comprehensive educational campaign. Where possible, passive engagement should be connected with opportunities for active engagement; for example, directing residents to a planned FireSmart event using social media pages. Regularly updated wildfire hazard signs, coordinated with the fire danger, are also useful. These signs communicate periods of elevated wildfire danger, where extra caution is recommended for community members to prevent inadvertent wildfire ignitions.

9.2.2 Action Planning

The following recommended actions for Electoral Areas A, B, and C emphasize the importance of education through collaborative measures. An important starting point is to understand the risks and recommendations outlined in this CWRP, which will provide a foundation for the subsequent actions. Hosting FireSmart events and Community Cleanup Days, along with educational materials and signage will raise awareness of wildfire risks and offer practical advice for community members to protect their properties. Providing an example of a FireSmart property through a demonstration can also inspire community members to take action.

To further enhance educational efforts, collaborative actions such as partnering with BCWS and with other members of the FireSmart Resiliency Committee promotes the spread of information and knowledge, as well as on-going conversations about mitigation and protection efforts. Pairing these actions with a communication plan and targeted education on fuel management will further help spread awareness and encourage proactive participation. Education, engagement and collaboration actions, will help create a comprehensive approach to wildfire resiliency for the community.

Table 26. FireSmart Education action recommendations.

Recommended Action	Description
1	Continue to emphasize FireSmart education events and open houses Focused on FireSmart concepts and activities occupants can do around their homes to reduce fire hazard.
2	Continue to participate in a FireSmart Resiliency Committee. The Committee should discuss future FireSmart programming, accountability, and structure moving forward.
3	Confirm communication plan, (previously completed with Regional partners) and communicate key risks and recommendations each community can take.
4	Work with BCWS to improve communication during wildfire incidents and improve real time information
5	Promote education to • Support fuel management activities and including prescribed and cultural burning • Maintain current fuel breaks; irrigating and mowing sports fields, • Planting more deciduous shade trees • Distribute FireSmart educational resources, such as FireSmart 101, Wildfire Risk Reduction Basics, FireSmart Canada Ambassador training, FireSmart Begins at Home app, social media, FireSmart BC materials. • Increase awareness of local fire regime included in this plan. (Speak to historical fire in the area, return intervals and coastal ecosystems)
6	Organize annual Community Cleanup Day(s), with assistance to community members in cleaning their yards of combustible materials as well as assistance disposing of these materials (chipper rental if required, trailers for moving waste).
7	Support the FireSmart BC Plant Program at local garden centres or nurseries. Includes plant tags, banners, staff buttons and in-store advertising.

9.3 Legislation and Planning

Legislation and regulation are potential tools for reducing wildfire risk on public land. Provincial and Federal Acts and Regulations can provide the legislative tools to reduce wildfire risk. These are differentiated from development specific bylaws and regulations that may be present in a community, which are discussed in the following section on Development Considerations.

9.3.1 Current Status

It is important to consider new regulations within the context of the Regional District's Electoral Areas' actual risk and the ability to administer and enforce them. While there are many options for regulations that may reduce wildfire risk, many of these are not feasible in a small community with limited capacity. The primary focus should be ensuring community members are complying with existing regulations, such as OBSCR and the *Wildfire Act*.

9.3.2 Provincial Acts and Regulations

Three provincial acts and regulations are particularly relevant for wildfire risk mitigation: the BC Building Act and Regulation⁷¹, the BC Open Burning and Smoke Control Regulation⁷², and the BC Wildfire Act and Regulation.⁷³ The Forest and Range Practices Act is also relevant for larger scale wildfire risk mitigation work.

The *BC Building Act* creates a series of technical building requirements for buildings in BC. This also sets training and qualification requirements for building officials. Many of these requirements are designed to limit the spread of structure fire within a structure, however there are no provisions for limiting interface wildfire spreading to a structure.

BC Open Burning Smoke Control Regulation (OBSCR) covers open burning of wood debris (vegetative material) to manage smoke and fine particulate matter from contributing to poor air quality. OBSCR has requirements that pertain to burning for community wildfire risk reduction. The OBSCR requires anyone conducting an open burn for wildfire risk reduction to submit the plan to a director, to give notification to the community about the burn plan, that a ventilation forecast is "good" or "fair", and that the burn is completed within a day.

BC Wildfire Act and *Wildfire Regulation* sets out legal responsibilities and obligations in BC that are enforceable during bans and restrictions. This Act and regulations is currently effective at regulating open burning and campfires during relevant higher hazard times of the year. *The Wildfire Act* also limits industrial activities during periods of elevated wildfire danger based on the risk of ignition of those activities. These acts and regulations can be superseded by a local bylaw or regulation.

⁷¹ *Building Act, Statutes of British Columbia 2015 c. 2.*

<https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/15002>

⁷² *BC Environmental Management Act: Open Burning Smoke Control Regulation BC Reg 152/2019, Statutes of British Columbia 2003, BC Reg 152/2019.* https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/152_2019/

⁷³ *BC Wildfire Act, Statutes of British Columbia 2004 c. 31.*

https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/04031_01

9.3.3 Federal Acts and Regulations

Several key Federal Acts that may be relevant within the Electoral Area are the *Fisheries Act*⁷⁴, the *Species at Risk Act*,⁷⁵ and the *Migratory Birds Convention Act*⁷⁶.

The Federal Fisheries Act is in place to provide a framework for the management and control of fisheries in Canada, as well as conservation and protection of fish and fish habitat. Any wildfire prevention and mitigation treatments that could impact fish or fish habitat, including riparian areas will need to adhere to the legal requirements of this Act.

The Species at Risk Act is federal legislation designed to prevent species from extinction and/or extirpation in Canada and provide recovery strategies for extirpated, endangered, and threatened species, as well as prevent species of concern from becoming threatened or endangered. The CWRP treatments and recommendations will need to consider species at risk and follow the requirements and prohibitions set out in SARA. Any land management should consider the environmental values at risk section to identify any species at risk, and include measures for ensuring compliance with the Species at Risk Act.

The Migratory Birds Convention Act protects most species of birds in Canada. This law contains regulations to protect birds, their nests and eggs from disturbance. This includes direct disturbance through hunting, wood harvesting, and commercial use, as well as indirect disturbance that may impact bird activities. Any land management activity that has potential to disturb birds protected under this Act must include measures for compliance with the Act. This is particularly important during summer nesting season, when bird populations are highest throughout BC.

⁷⁴ *Fisheries Act, Revised Statutes of Canada 1985, c F-14.*

<https://laws-lois.justice.gc.ca/eng/acts/f-14/>

⁷⁵ *Species at Risk Act, Statutes of Canada 2002, c. 29.*

<https://laws.justice.gc.ca/eng/acts/s-15.3/>

⁷⁶ *Migratory Birds Convention Act, Statutes of Canada 1994 c.22.*

<https://laws.justice.gc.ca/eng/acts/M-7.01/>

9.3.4 Action Planning

Developing FireSmart practices and assessments for publicly owned land, such as parks and open spaces, will create fire-resilient areas. Identifying CI, as well as culturally significant and green spaces will help identify vulnerabilities and provide targeted mitigation strategies for important community assets.

Strengthening the existing regulatory frameworks through promotion of the provincial open burning regulations and clarifying enforcement roles will be useful for effective management and minimizing fire risks throughout the mainland portions of the Electoral Areas.

Table 27. FireSmart Legislation and Planning action recommendations.

Recommended Action	Description
8	Ensure the design and maintenance of public land such as parks and greenspaces consider FireSmart practices.
9	Renew FireSmart assessments for eligible buildings, publicly owned critical infrastructure, culturally significant sites and/or green spaces.
10	Review vegetation management practices with MOTT and BC Hydro. Ensure right of ways and debris management is compliant with provincial regulations.

9.4 Development Considerations

Development decisions, such as land use, 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 and may impact 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.

9.4.1 Current Status

Many inhabited structures are generally compliant with FireSmart building design and materials. The most common deficiencies include combustible cladding, unmitigated extended zones, - and combustibles within 10m of the structures. The most common and significant landscaping issues are long, unmaintained grass near or directly adjacent structures. All of these elements thus contribute to an unmitigated immediate to extended zone (see Figure 26).

Residents that opt to develop their own homes and designs should be encouraged to incorporate FireSmart design principles.

9.4.2 Action Planning

For development considerations, the recommended actions emphasize integrating wildfire prevention and mitigation into the planning process. Encouraging property owners and developers to follow FireSmart guidelines ensures that new developments increase resiliency to wildfire risks.

The BC building code currently does not require new structures be built to FireSmart principles thereby missing the opportunity to minimize wildfire risk in all new developments.

Incorporating wildfire prevention and suppression considerations into the design of subdivisions is critical to creating resilient neighborhoods. Including input from fire services and emergency management personnel during the referral processes for new developments ensures that wildfire risk reduction is considered during the early development stages, fostering safer, more resilient communities.

Table 28. FireSmart Development Consideration action recommendations.

Recommended Action	Description
12	Advocate for BC building code to require FireSmart principles.

9.5 Interagency Cooperation

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

9.5.1 Current Status

As mentioned above in FireSmart foundations section, the Community FireSmart and Resiliency Committee is an important pillar to share information and progress about challenges and successes amongst Electoral Areas. The FireSmart Coordinator's leadership through the CFRC encourages interagency cooperation and increases FireSmart awareness and community support and should lead to improved FireSmart and wildfire risk reduction activities over a broader area.

The following are recommended action items moving forward in regard to FireSmart Interagency Cooperation for the Mainland Electoral Areas:

9.5.2 Action Planning

Interagency cooperation is essential for effective wildfire prevention and suppression, and the recommended actions focus on fostering collaboration, inclusivity, and shared expertise.

Continuing to support the Regional Community FireSmart and Resiliency Committee further enhances interagency collaboration by uniting key collaborators such as local fire chiefs, emergency managers, Tla'amin First Nations representatives, mill owners/timber licensees, community forest owners, and government staff. The committee provides a platform for aligning Regional emergency management efforts with FireSmart initiatives, facilitating the exchange of expertise, and ensuring a unified response to wildfire risks.

Providing Indigenous cultural safety training to emergency personnel is crucial for strengthening partnerships and collaboration efforts in wildfire prevention and suppression.

Table 29. FireSmart Interagency Cooperation action recommendations.

Recommended Action	Description
13	Provide Indigenous cultural safety training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.

9.6 Cross-Training

Wildland-Urban Interface resiliency planning and incident response draw on many different professions who do not typically work in a 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.

9.6.1 Current Status

For all Electoral Areas A, B and C on the mainland, cross training between fire departments and teamwork between BC Wildfire Service, FireSmart representatives are important for fire safety. Regular training helps everyone understand their roles during a wildfire. Individuals gain valuable skills, and local knowledge is shared, making the community better prepared for fire emergencies.

There is a long history of interagency cooperation among the local fire services on the mainland and with occasional collaboration with BCWS, BCAS, and RCMP with regular interagency meetings however the frequency of hands-on cross training is less than optimal. Participation from fire departments in cross training exercises with BCWS and other response agencies would be beneficial and should be prioritized.

9.6.2 Action Planning

Cross-training is a crucial component of building a resilient and adaptable response framework for wildfire and emergency situations.

Cross-training fire department members in both structural fire and interface wildfire training ensures they are prepared to handle complex emergencies that span urban and wildland areas. A multi-skilled team will be more capable of addressing diverse challenges, fostering interagency collaboration, and improving overall emergency preparedness and response capabilities.

Table 30. FireSmart Cross-Training action recommendations.

Recommended Action	Description
14	Training for FireSmart Positions held by the various jurisdictions such as: - Grow the Home Partner's program.
15	Continue Cross-training of fire department members, including structural fire and interface wildfire training. Ensure that local and provincial fire services work together to develop and test coordinated response.

9.7 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 as a whole.

9.7.1 Current Status

The Regional District is well established to manage an emergency event. The Regional District's Regional Emergency Preparedness Service provides regular EOC training for select staff from qRD, City of Powell River, and Tla'amin Nation.

The Regional District has developed ample public information including FireSmart brochures, and community evacuation guides for all areas of the Region⁷⁷. The community evacuation brochure is an easy-to-understand document for residents and tourists to understand emergency preparedness best practices and provides for all Mainland communities including Lund, South of Town and Wildwood⁷⁸. The Region has a community notification system in place that can alert subscribers via land line, cell phone, text message, and email of important emergency events including fire evacuations, hazardous materials incidents, floods, and other public safety concerns.

Communication between emergency services such as Fire departments, BCWS and the other responding jurisdictions occurs regularly at Emergency preparedness meetings. These meetings involve many collaborators within the Region and are an excellent chance to get updates from all sort of projects underway in the Region. The mainland is well established with resources and ability to handle emergency situations. Effectively communicating to the public that generally the current wildfire risk is relatively low, while highlighting the significant potential impacts if one were to occur, can be a challenge.

9.7.2 Action Planning

The recommended actions for emergency planning prioritize preparedness, resource readiness, and cross-jurisdictional coordination to improve wildfire response and recovery. Assessing, inventorying, and purchasing FireSmart structure protection equipment, along with ancillary items such as hoses, fittings, and portable pumps, strengthens the community's ability to protect critical infrastructure and respond to fire threats. This is particularly important for the most remote areas and communities where resources may be limited.

Participating in cross-jurisdictional meetings, tabletop exercises, and seasonal wildfire readiness meetings fosters collaboration between agencies, ensuring that roles, responsibilities, and response

⁷⁷ ——. "Emergency Services | Emergency Preparedness | Qathet Regional District." Qathet Regional District, June 13, 2024. <https://www.qathet.ca/services/emergency-services/emergency-preparedness/>.

⁷⁸ ——. "Personal & Neighbourhood Preparedness - Qathet Regional District." Qathet Regional District, November 5, 2024. <https://www.qathet.ca/services/emergency-services/emergency-preparedness/personal-neighbourhood-preparedness/>.

plans are well-coordinated. These exercises improve communication and preparedness across jurisdictions, making wildfire suppression efforts more efficient and effective. Promoting the Emergency Management BC Wildfire Preparedness Guide during community events further enhances public awareness and readiness, empowering residents to take proactive steps in wildfire preparedness. Finally, developing a clear Emergency Recovery Plan, including a guide for re-entry after evacuation, ensures a safe and organized return to communities following a wildfire.

Table 31. FireSmart Emergency Planning action recommendations.

Recommended Action	Description
18	Participate in a series of cross-jurisdictional meetings focusing specifically on tabletop exercises relating to wildfire preparedness and suppression with the goal of leading toward an actual multi-agency/mutual aid exercise.
19	Purchase ancillary equipment including hoses, fittings, portable pumps for outdated equipment.
20	Use all local materials to promote community emergency preparedness events focused on wildfire. Include priority understanding for shelter in place vs. evacuations.
21	Create a guide to re-entry after evacuation/ Emergency Recovery Plan.

9.8 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 emergency response objectives can greatly increase fire suppression effectiveness and reduce damage and losses to structure and infrastructure.

The Region's natural forest types as are less prone to ignition and sustained fire spread when compared to BC's Interior drier forests. In fact, many older forests (> 100 years old) within the WUI exhibit forest fuel conditions like a mature C-5 fuel type which would generally be classified as a 'low' fire threat and risk to communities. Since these forests already have low threat conditions, the authors have not recommended extensive proposed fuel treatments, and it is recommended that these types of units be retained over time rather than harvested or fuel treated.

9.8.1 Current Status

The Regional District successfully drafted a vegetation management prescription for a Crown land area in Electoral Area B that was then largely operationalized by provincial staff with provincial funding. These areas of understory fuel removal, reduced the likelihood of crown fire near the community.

The Regional District's vegetation management experiences include some valuable lessons learned noting that costs for these projects are very expensive in coastal fuel types. A consideration to be able to cover more hectares throughout multiple areas of the Regional District would be to create treated buffers along existing recreational trails within the forest networks to reduce potential spread directly from trails where human ignitions could occur.

With the recent closure of the pulp mill and hog fuel debris management system, reduced processing facilities for organic debris have led to increased debris from clearing activities. A WUI WRR Plan is currently under development in identifying fuel management areas within the Region for critical infrastructure, community and landscape level fuel breaks.

9.8.2 Action Planning

Effective vegetation management for Electoral Areas A, B and C will focus on reducing fuel loads and creating defensible spaces. Cleaning trails in Regional District park lands and on Crown lands with a 10-meter buffer would be an opportunity to contain potential fire ignitions and preventing wildfires from spreading through recreational areas. Off-site debris disposal for approved fuel management or maintenance activities ensures that combustible materials are safely removed, minimizing fire hazards while maintaining the ecological integrity of these areas.

Establish on and off-site debris disposal for approved fuel management or maintenance activities.

- Utilize the curtain burner when possible.
- Developers and Industry to utilize provincial post treatment hazard abatement best management practices for when clearing land.

Encouraging a landscape-level Wildland-Urban Interface Wildfire Risk Reduction (WUI WRR) Plan, along with professional assessments, will provide a framework for identifying and addressing vegetation management opportunities throughout the Electoral Areas. Close collaboration with the provincial land managers, local Powell River Community Forest, and industry collaborators is essential to align risk reduction efforts, maximizing the effectiveness of mitigation strategies and fostering shared responsibility.

Additionally, considering the powerline corridor's potential to provide a fire break, supported by a multi-year treatment regime from BC Hydro and Evolgen will create a barrier against wildfire spread.

Table 32. FireSmart Vegetation Management action recommendations.

Recommended Action	Description
22	Recognize the potential for trails in parklands and establish hand guards/fuel breaks and access/anchor points. Look to enhance wherever possible.
23	Apply for provincial funding to support maintenance for existing fuel treatments, as well as treating areas that are low risk to maintain this status • Penticton Trails
24	Implement and encourage landscaping using FireSmart vegetation management principles. • Advocate for good deciduous species versus high risk- low growing conifers (cedar hedges, juniper) • Implement landscaping efforts towards pruning for mature conifers and mitigating ladder fuels next to sheds. Clearing low lying branches, piles, saplings and coniferous species next to structures.
26	Work closely with all local forest industry operators, such as Powell River Community forests to maximize on fuel treatment areas and incorporate wildfire planning into their management plans.
29	Advocate for the powerline corridor be turned into a fire break. This will require a multi year treatment regime by both BC Hydro and Evolgen to permanently remove invasive species broom from the corridor.
31	(Ministry of Forests) Licensees should consider planting deciduous species post-harvest in areas near the WUI to lower the number of high-risk conifers.

9.8.3 Proposed Fuel Treatments

Table 33. Proposed Fuel Management Treatment Summary Table

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			High	Mod	Low		
TU-2	30.3	Maintenance	-	-	30.3	Unit has a private land parcel within it. As well as Tanner Ave	Maintain reduced fuel load in forest around private land parcel as well as private dwellings to the south and west.
TU-4	26.7	Trail work	-	26.7	-	Trail network within area as well as Sand & Gravel Pit.	Clear fuels along trail network to promote discontinuous conifer fuel and reduce ignitions
TU-5	11.6	Trail work	-	11.6	-	Unit runs along regularly used trail.	50 m buffer off trail to create a small fuelbreak that can be used to tie in future reduction efforts, stage resources and reduce fire behaviour
TU-9	0.78	FTU	-	0.78	-	Steeper access to cell tower	Cell tower at the top of cranberry road. This area can have a CI buffer established around it to protect communications infrastructure
TU- 11	179.8	Landscape level fuel break	-	179.8	-	Land tenure changes-Community Forest	Landscape level fuel break on Duck Lake FSR. Working off road and improving existing fuel break potential.

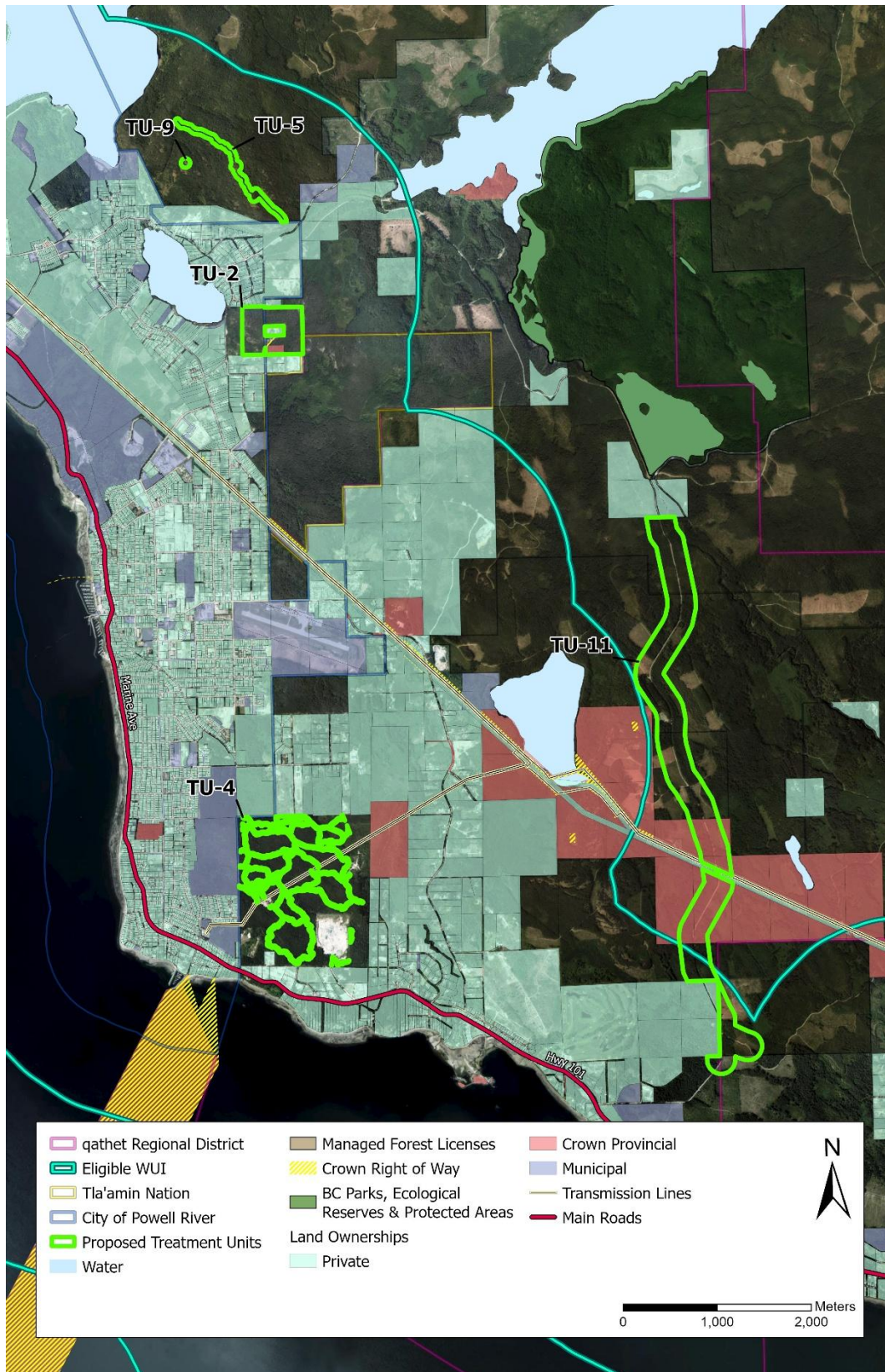


Figure 29. Proposed Fuel Management Treatment Areas within the WUI of the Mainland.

10 Savary Island (Electoral Area A)

10.1 Summary

Savary Island has been studied separately from Electoral Area A and the Regional District Mainland specifically for its distinct risk profile. It is significantly populated on a relatively small area and human caused fires could lead to significant impacts to island homes. A Savary Island CWPP was completed in 2009 and these following recommendations sections continue to build off the previous CWPP.

One of the current emergency responses that is local to the island is a “head to the beach” approach in the event of a large fire. This is due to the lack of quick egress options from the island coupled with challenging vehicle access throughout much of the island. Investing in an SPU (Structure Protection Unit) trailer on Savary Island for fire prevention activities could be beneficial due to the potential delay supporting response from the mainland. Limiting the potential for structure-to-structure fire spread should be a priority.

Interagency collaboration needs to be explored with agencies like the Ministry of Transportation and Transit (MOTT). Continuing to advocate for appropriate road maintenance may help to ensure that roads remain accessible for evacuation and emergency services during wildfire events.

Engaging with the Nature Trust of BC and Savary Island Land Trust (SILT) to discuss FireSmart practices would also be beneficial in taking steps forward. A significant portion of the island (43%) is a privately owned protected forest. Some considerations for vegetation management on the property could help to protect the area from a damaging fire. There may also be interest in some intervention where the former airstrip has been encroached upon with invasive and flammable Scotch Broom. The discussion could include minimizing fuels along trails and reducing ignition potential as well as enhancing road right of ways to provide shaded fuel breaks.

The following FireSmart discipline sections go in depth to follow the recommendations that are representative for Savary Island.

10.2 Education

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

Active education involves specific events, conversations, and presentations that meet residents and provide information and access to tools. Active education is most successful when leveraging pre-existing community gatherings to add on a FireSmart education component. For example, setting up a booth with FireSmart education materials and staff at community gatherings such as the Savary farmers' market or at the annual triathlon event. Leveraging pre-existing events removes barriers by meeting people where they are already gathering, rather than asking them to make time for specific events. However, specific FireSmart events are also important as they provide a focused venue for FireSmart education. This may include a community FireSmart meeting, presentation, or open house, where residents can access materials and ask questions of FireSmart experts. Collaborating with SIVFD as community leaders in public safety could be a successful approach to public education.

Passive education involves providing access to FireSmart educational materials that residents can access on their own schedule. The qRD website already maintains FireSmart material and the qRD FireSmart Program provides brochures with FireSmart materials at regular community gathering places such as the Savary wharf. Passive materials should also aim to create opportunities for active engagement, such as advertising FireSmart events, or providing contact information for a FireSmart expert to provide additional information.

10.2.1 Current Status

The qRD FireSmart Coordinator and has trained 12 of its members across the Region in the Home Partners Program including some members from Savary. Successful education programming requires capacity, which is best developed through the FireSmart Coordinator position discussed in the previous section with support from local Savary Island FireSmart representatives. The FireSmart Coordinator is responsible for developing and rolling out the education initiatives below.

10.2.2 Action Planning

FireSmart education should be conducted on a regular basis, planning out the various initiatives as part of a campaign to build community awareness. Developing an annual strategic education plan ensures the events and initiatives are coordinated, taking advantage of the seasonal trends and regular community gatherings.

The recommended actions for Savary Island focus on increasing community awareness, engagement, and preparedness for wildfire risks through targeted initiatives and collaborative efforts. Understanding the risks and recommended actions identified in this CWRP is a critical first step, as it provides the foundation for all other educational activities. Annual Community Cleanup Days “chipper days” have been very successful on Savary encouraging residents to reduce combustible materials on their properties, with support provided through the qRD FireSmart Program for chipper and waste removal assistance.

To maintain consistent communication and awareness, updating and promoting signage, education materials, and resources helps inform residents about wildfire risks and preparedness strategies. Developing a targeted communication plan provides clear recommendations for mitigation actions that community members can undertake.

Collaboration with the BC Wildfire Service (BCWS) enhances these educational efforts by ensuring timely communication, and even though Savary Island does not follow open fire prohibitions under the BC Wildfire Act, it is beneficial to ensure communication and awareness of current provincial and local burning regulations to minimize confusion. Additionally, ensuring Savary participation in the FireSmart Resiliency Committee brings together the collaborators to discuss programming and future priorities, ensuring a structured and collaborative approach to wildfire education.

Table 34. FireSmart Education action recommendations.

Recommended Action	Description
1	Continue to emphasize FireSmart education events and open houses Focused on FireSmart concepts and activities occupants can do around their homes to reduce fire hazard.
2	qRD should continue to participate in a FireSmart Resiliency Committee. The Committee should discuss future FireSmart programming and structure moving forward.
3	Confirm communication plan, (previously completed with Regional partners) and communicate key risks and recommendations each community can take.
4	Work with BCWS to improve communication during wildfire incidents and improve real time information
5	Promote education to

Recommended Action	Description
	• Support fuel management activities and including prescribed and cultural burning • Maintain current fuel breaks • Planting more deciduous shade trees • Distribute FireSmart educational resources, such as FireSmart 101, Wildfire Risk Reduction Basics, FireSmart Canada Ambassador training, FireSmart Begins at Home app, social media, FireSmart BC materials. • Increase awareness of local fire regime included in this plan. (Speak to historical fire in the area, return intervals and coastal ecosystems)
6	Organize annual Community Cleanup Day(s), with assistance to community members in cleaning their yards of combustible materials as well as assistance disposing of these materials (chipper rental if required, trailers for moving waste).

10.3 Legislation and Planning

Legislation and regulation are potential tools for reducing wildfire risk on public land. Provincial and Federal Acts and Regulations can provide means for local governments to implement wildfire risk reduction. These are differentiated from development specific bylaws and regulations that may be present in a community, which are discussed in the following section on Development Considerations.

10.3.1 Current Status

It is important to consider new regulations within the context of the qRD's Electoral Areas ability to administer and enforce them. While there are many options for regulations that may reduce wildfire risk, many of these are not feasible in a small community with limited capacity. The primary focus should be ensuring community members are complying with the existing Savary Island open burning bylaw 549 as well as OBSCR and the Wildfire Act and ensuring the SIVFD is supported in enforcing the bylaw with regular bylaw training and regular contact with RCMP for seasonal enforcement supports.

10.3.2 Provincial Acts and Regulations

Three provincial acts and regulations are particularly relevant for wildfire risk mitigation: the BC Building Act and Regulation⁷⁹, the BC Open Burning and Smoke Control Regulation⁸⁰, and the BC Wildfire Act and Regulation.⁸¹ The Forest and Range Practices Act is also relevant for larger scale wildfire risk mitigation work.

The *BC Building Act* creates a series of technical building requirements for buildings in BC. This also sets training and qualification requirements for building officials. Many of these requirements are designed to limit the spread of structure fire within a structure, however there are no provisions for limiting interface wildfire spreading to a structure.

BC Open Burning Smoke Control Regulation (OBSCR) covers open burning of wood debris (vegetative material) to manage smoke and fine particulate matter from contributing to poor air quality. OBSCR has requirements that pertain to burning for community wildfire risk reduction. The OBSCR requires anyone conducting an open burn for wildfire risk reduction to submit the plan to a director, to give notification to the community about the burn plan, that a ventilation forecast is "good" or "fair", and that the burn is completed within a day. Many local governments in BC have bylaws in place regulating open burning in addition to OBSCR. This may be pertinent for prescribed burning or debris burning for wildfire risk mitigation on Savary, where activities may be limited by OBSCR regulations.

⁷⁹ *Building Act, Statutes of British Columbia 2015 c. 2.*

<https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/15002>

⁸⁰ *BC Environmental Management Act: Open Burning Smoke Control Regulation BC Reg 152/2019, Statutes of British Columbia 2003, BC Reg 152/2019.* https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/152_2019/

⁸¹ *BC Wildfire Act, Statutes of British Columbia 2004 c. 31.*

https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/04031_01

BC *Wildfire Act* and *Wildfire Regulation* sets out legal responsibilities and obligations that are enforceable during bans and restrictions however the qRD burning bylaw for Savary will take precedence over the *Wildfire Act*.

10.3.3 Federal Acts and Regulations

Several key Federal Acts that may be relevant within the Electoral Area are the *Fisheries Act*⁸², the *Species at Risk Act*,⁸³ and the *Migratory Birds Convention Act*⁸⁴.

The *Federal Fisheries Act* is in place to provide a framework for the management and control of fisheries in Canada, as well as conservation and protection of fish and fish habitat. Any wildfire prevention and mitigation treatments that could impact fish or fish habitat, including riparian areas will need to adhere to the legal requirements of this Act.

The *Species at Risk Act* is federal legislation designed to prevent species from extinction and/or extirpation in Canada and provide recovery strategies for extirpated, endangered, and threatened species, as well as prevent species of concern from becoming threatened or endangered. The CWRP treatments and recommendations will need to consider species at risk and follow the requirements and prohibitions set out in SARA. Any land management should consider the environmental values at risk section to identify any species at risk, and include measures for ensuring compliance with the *Species at Risk Act*.

The *Migratory Birds Convention Act* protects most species of birds in Canada. This law contains regulations to protect birds, their nests and eggs from disturbance. This includes direct disturbance through hunting, wood harvesting, and commercial use, as well as indirect disturbance that may impact bird activities. Any land management activity that has potential to disturb birds protected under this Act must include measures for compliance with the Act. This is particularly important during summer nesting season, when bird populations are highest throughout BC.

10.3.4 Action Planning

The recommended actions for legislation focus on ensuring understanding of the relevant open fire bylaw and enforcement mechanisms to reduce community fire risks. Developing FireSmart practices for the design and maintenance of publicly owned spaces is essential to ensure fire-resilient landscapes are prioritized. These practices establish consistent standards for reducing fire hazards in areas that are heavily used or culturally significant. Complementing these efforts, FireSmart assessments for eligible buildings, critical infrastructure, and culturally significant sites provide a clear understanding of vulnerabilities and guide targeted mitigation actions to protect key assets.

Regularly reviewing open burning bylaws with SIVFD, RCMP, and the public, including enforcement roles and responsibilities will strengthen accountability and ensure compliance with wildfire regulations. Enforcing the open fire bylaw is challenging for members of the SIVFD. The qRD should continue to

⁸² *Fisheries Act, Revised Statutes of Canada 1985, c F-14*. <https://laws-lois.justice.gc.ca/eng/acts/f-14/>

⁸³ *Species at Risk Act, Statutes of Canada 2002, c. 29*. <https://laws.justice.gc.ca/eng/acts/s-15.3/>

⁸⁴ *Migratory Birds Convention Act, Statutes of Canada 1994 c.22*. <https://laws.justice.gc.ca/eng/acts/M-7.01/>

support the SIVFD with regular bylaw training and continue to foster relationships with the RCMP to provide enforcement support for SIVFD during the busiest times in the summer.

Table 35. FireSmart Legislation and Planning action recommendations.

Recommended Action	Description
8	Ensure the design and maintenance of public land such as parks and greenspaces consider FireSmart practices
9	Renew FireSmart assessments for eligible buildings, publicly owned critical infrastructure, culturally significant sites and/or green spaces.
10	Review vegetation management practices with MOTT. Ensure right of ways and debris management is compliant with provincial regulations.

10.4 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 and may impact 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.

10.4.1 Current Status

Most Savary Island structures are not compliant with FireSmart building design and materials. The most common deficiencies in the structures are combustible decks, stairs, and fences, as well as combustible accessory buildings within 10m of the structures. The most common and significant landscaping issues are combustible materials near or directly adjacent to structures, combustible sidings, as well as open crawlspaces and lack of attention to minimizing fuels within the immediate zones 1.5 metres around the structure.

10.4.2 Action Planning

The recommended actions for development emphasize continuing the promotion of FireSmart principles among builders and property owners toward building a safer, more resilient Savary community.

Promoting FireSmart landscaping best practices to incorporate FireSmart principles ensures that new homes or developments are designed with fire-resistant vegetation and defensible spaces, significantly reducing wildfire risks.

Currently the BC Building Code does not require FireSmart principles. Advocating for the inclusion of FireSmart principles in the BC Building Code will help to ensure new builds are more resilient to the threat of interface fires.

Table 36. FireSmart Development Consideration action recommendations.

Recommended Action	Description
12	Advocate for BC building code to require FireSmart principles.

10.5 Interagency Cooperation

It takes the efforts of multiple collaborators working together to achieve a fire resilient community. These people include the members of the SIVFD, local government staff, elected officials, First Nations representatives, and residents of Savary Island. Individually they are responsible to their own organizations and their own properties, but all of the collaborator organizations and individuals are dependent upon each other to develop and implement an effective Community Wildfire Resiliency Plan and undertake a successful wildfire response.

10.5.1 Current Status

As mentioned above in FireSmart foundations section, the Community FireSmart and Resiliency Committee is an important pillar to share information and progress about challenges and successes amongst Electoral Areas. Savary participation in the CFRC would benefit increased interagency cooperation to increase FireSmart awareness and community support and implement FireSmart and wildfire risk reduction activities over a broader area. The following section are recommended action items moving forward regarding FireSmart Interagency Cooperation.

10.5.2 Action Planning

The recommended actions for Savary Island emphasize the importance of collaboration, communication, and cultural inclusion to effectively address wildfire risks. Participating in an integrated fuel management, cultural burning, and prescribed fire planning group, typically led by Ministry staff, ensures that fuel management efforts are coordinated across jurisdictional boundaries. This approach fosters consistency, aligns planning priorities, and integrates traditional and modern fire management practices to reduce wildfire risks effectively.

Participating in the Regional Community FireSmart and Resiliency Committee further strengthens cooperation by bringing together key collaborators, including fire services, First Nations representatives, and other relevant agencies. This committee serves as a platform for ongoing discussions, accountability, and the alignment of wildfire mitigation initiatives, ensuring that efforts are collaborative and well-coordinated. Providing Indigenous cultural safety training to emergency management personnel is equally important, as it strengthens partnerships with Indigenous communities, enabling more effective collaboration for wildfire prevention and suppression. Supporting a Savary FireSmart representative to attend the Wildfire Resiliency and Training Summit would by foster knowledge sharing, skill development, and the promotion of best practices in community wildfire resiliency.

Table 37. FireSmart Interagency Cooperation action recommendations.

Recommended Action	Description
13	Provide Indigenous cultural safety training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.

10.6 Cross-Training

Wildland-Urban Interface resiliency planning and incident response draw on many different professions who do not typically work in a wildfire environment. Cross-training of fire fighters, public works staff, utility workers, local government, 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.

10.6.1 Current Status

For Savary, as it's a small island with its own fire department, training and teamwork between BC Wildfire Service, FireSmart representatives, and their local fire department members are important for fire safety. Regular training helps everyone understand their roles during a wildfire. Individuals gain valuable skills, and local knowledge is shared, making the community better prepared for fire emergencies.

There is currently minimal cross training between fire departments and BCWS staff on the mainland. The participation of the Savary Island Volunteer Fire Department in regular cross training exercises with BCWS and other local fire firefighters would be beneficial for interface fire preparedness. Working toward an eventual mutual aid exercise bringing fire resources to Savary would be beneficial.

10.6.2 Action Planning

Cross-training is essential for building a skilled and adaptable workforce to address wildfire risks effectively. Training SIVFD members in both structural and interface wildfire scenarios ensures they are prepared for diverse fire threats.

Table 38. FireSmart Cross-Training action recommendations.

Recommended Action	Description
14	Training for FireSmart Positions held by the various jurisdictions such as: - Grow the Home Partner's program.
15	Continue Cross-training of fire department members, including structural fire and interface wildfire training. Ensure that local and provincial fire services work together to develop and test coordinated response.

10.7 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 as a whole.

10.7.1 Current Status

Savary Island is an isolated island community with seasonal fluctuations that can see up to 3,000 people on the island during the driest summer months. The community evacuation guide is an easy-to-understand document for residents and tourists to understand for Savary⁸⁵. The qRD has a community notification system in place that can alert subscribers via land line, cell phone, text message, and email of important emergency events including fire evacuations, hazardous materials incidents, floods, and other public safety concerns.

Communication between emergency services such as Fire departments, BCWS and the other governing jurisdictions occurs regularly at Emergency preparedness meetings. These meetings involve many collaborators within the Region and are an excellent chance to get updates from all sort of projects underway in the Region. Savary has few emergency resources on island beyond the local SIVFD, with no BCAS and no RCMP stationed on the island. The nearby mainland is well resourced and will likely have resources to share in order to handle emergency situations however there has been limited tests of mutual aid support to Savary. Messaging to the public has also been something that has been at times challenging to convey the low to moderate fire hazard relative to the high consequences of wildfire. And while most residents and visitors respect the local burning bylaw there are still campfire and other compliance responses every summer.

10.7.2 Action Planning

Emergency planning for Savary Island should include participating in cross-jurisdictional meetings and tabletop exercises. The SIVFD and qRD should consider pursuing provincial funding to develop a Structure Protection Unit (SPU) for the island. This would ensure that critical resources are available where they are needed most.

Even a relatively minor fire during the busiest summer months may pose challenges and stress on this densely developed island where proximity of residences, rough roads, and the island's isolation from the mainland will all compound the challenges to expediently suppress the fire while supporting public safety impacts. Encouraging residents to understand the importance of making their own family emergency plans, understanding best practices such as not blocking the roads during a fire response, relocating toward safe locations such as the sandy beaches if necessary, and registering for the qRD community notification system, are all crucial for a more fire resilient Savary public.

⁸⁵ https://www.qathet.ca/wp-content/uploads/2024/11/qRD_EVAC_brochure-Savary1.pdf

Promoting the Emergency Management BC Wildfire Preparedness Guide during community events would educate residents on practical steps for wildfire readiness, empowering them to take proactive measures. Promoting emergency preparedness information in the many vacation rentals would benefit the many visitors who come to Savary during the summer months. Continuing to build on the ongoing community evacuation planning work is crucial. Additionally, creating a re-entry guide and Emergency Response Recovery Plan, will provide a clear plan for safe community recovery following evacuations.

Table 39. FireSmart Emergency Planning action recommendations.

Recommended Action	Description
16	Consider purchase of FireSmart structure protection equipment. Currently lacking SPU for Savary. Logistically, the island would greatly benefit from having access immediately should they need it due to structure density. Tla'amin should also consider purchasing their own.
18	Participate in a series of cross-jurisdictional meetings focusing specifically on tabletop exercises relating to wildfire preparedness and suppression with the goal of leading toward an actual multi-agency/mutual aid exercise.
19	Purchase ancillary equipment including hoses, fittings, portable pumps for outdated equipment.
20	Use all local materials to promote community emergency preparedness events focused on wildfire. Include priority understanding for shelter in place vs. evacuations.
21	Create a guide to re-entry after evacuation/ Emergency Recovery Plan.

10.8 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.

10.8.1 Current Status

Given the minimal amount of public land there is therefore currently very limited government funded vegetation management potential for Savary. There was a previously treated portion of Crown Land to the east of the large, forested property owned by the Nature Trust of BC. This area should be considered as a potential area for a maintenance treatment.

10.8.2 Action Planning

Consider a maintenance treatment of the previously treated Crown Land portion with support from provincial funding. Engage with the Ministry of Forests WRR staff for their consideration to lead this work. Given the overall community's limited vegetation management potential on publicly owned lands ensuring private property owners are encouraged to minimize fire risk on the respective properties and wherever possible reducing hazardous fuels along trails will minimize the likelihood of fires starting and spreading within these heavily used areas.

Table 40. FireSmart Vegetation Management action recommendations.

Recommended Action	Description
22	Recognize the potential for trails in parklands and establish hand guards/fuel breaks and access/anchor points. Look to enhance wherever possible.
23	Apply for provincial funding to support maintenance for existing fuel treatments, as well as treating areas that are low risk to maintain this status • Savary Island
24	Implement and encourage landscaping using FireSmart vegetation management principles. • Advocate for good deciduous species versus high risk- low growing conifers (cedar hedges, juniper) • Implement landscaping efforts towards pruning for mature conifers and mitigating ladder fuels next to sheds. Clearing low lying branches, piles, saplings and coniferous species next to structures.

Recommended Action	Description
28	Savary road allowances should be addressed for fire truck safety and as opportunity to showcase fuel treatments on right of ways.

10.8.3 Proposed Fuel Treatments

Table 41. Proposed Fuel Management Treatment Summary Table

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Mod	Low		
TU-10	2.3	Maintenance	-	-	2.3	Crown Land	Previously treated area on crown land next to large untreated private land.



Figure 30. Proposed Fuel Management Treatment Areas within the WUI of Savary Island

11 Texada (Electoral Area D)

11.1 Summary

Texada Island faces unique wildfire challenges due to its mix of residential areas, large industrial interests (hydro and mining), and undisturbed forested areas, particularly in the south. Key priorities include improving wildfire readiness through regular communication between local fire departments and the public, sharing updates on fire hazards, and enforcing regulations. Community preparedness can be significantly enhanced by implementing FireSmart principles, such as maintaining defensible space around homes, using fire-resistant building materials, and promoting regular property maintenance.

Residents should be informed of provincial or local fire bans through clear and accessible messaging, including at high-traffic areas like the ferry terminal. Additionally, the Wildland-Urban Interface Wildfire Risk Reduction (WUI WRR) tactical vegetation management plan currently under development, should look for opportunities on Texada Island, particularly by identifying fuel treatment areas near industrial sites and at the edges of communities. Collaborative efforts and proactive strategies will strengthen the Texada Island community's ability to mitigate wildfire risks and protect its residents, visitors, and industries.

11.2 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.

11.2.1 Current Status

The qRD FireSmart Program has provided training for several Texada Island residents, including some who attended training in 2024 in the Home Partners Program. The Education discipline of FireSmart supports many educational opportunities, both active and passive, to assist community members in building wildfire resilience. Successful education programming typically requires capacity, which is best developed through the FireSmart Coordinator position and supported by local FireSmart representatives in the community. The FireSmart Coordinator is responsible for developing and rolling out the education initiatives below but relies heavily on support from community members. Special note of appreciation for the Van Anda and Gillies Bay fire departments that have provided ongoing collaborative support and promotion for the FireSmart Program.

FireSmart education should be conducted on an ongoing basis; annually planning out the various initiatives toward building community awareness. Developing an annual education plan for Texada will ensure the events and initiatives are coordinated, taking advantage of seasonal trends and regular community gatherings. Once the plan is in place, it can be revisited each year.

Active education involves specific events, conversations, and presentations that meet residents and provide information and access to tool. Active education is most successful when leveraging pre-existing community gatherings to add on a FireSmart education component. For example, providing FireSmart education materials at a public event at the Gillies Bay fire hall was well received by many members of the public. Leveraging pre-existing events removes barriers by meeting people where they are already gathering, rather than asking them to make time for specific events. However, specific FireSmart events are also important as they provide a focused venue for FireSmart education. This may include a community FireSmart meeting, presentation, or open house, where residents can access materials and ask questions of FireSmart experts.

Passive education involves providing access to FireSmart educational materials that residents can access on their own schedule. The qRD currently maintains its website with FireSmart material and provides brochures with FireSmart materials at regular community gathering places and at local government offices and community gathering places. Recommend continuing to watch for more locations on Texada to offer FireSmart material for public access. Passive materials should also aim to create opportunities for active engagement, such as advertising FireSmart events, or providing contact information for a FireSmart expert to provide additional information.

11.2.2 Action Planning

The FireSmart education discipline requires a combination of coordinated initiatives to effectively build community awareness and engagement around wildfire risk reduction. To achieve this, an annual education plan should be developed and implemented under the leadership of a FireSmart Coordinator or equivalent staff member. A foundational step for Texada would be to read and understand the risks and recommended actions outlined in this Community Wildfire Resiliency Plan (CWRP), which will guide the priorities for outreach and programming.

Holding FireSmart events or open houses introduces residents to practical ways to reduce fire hazards around their homes, while updating and promoting signage, educational materials, and resources ensures consistent messaging across the community. Targeted communication plans that highlight wildfire risks and key mitigation actions provide clarity for both residents and community leaders, while collaboration with the BC Wildfire Service (BCWS) ensures timely communication on fire bans, high danger days, and real-time fire updates. Supporting education around fuel management, including prescribed and cultural burning, further reinforces the importance of proactive wildfire prevention.

To encourage hands-on participation, annual Community Cleanup Days provide opportunities for residents to clear combustible materials from their properties, with logistical support such as chipper rentals and trailers for waste removal. Chipper rental has proven successful in past events on Texada Island though this requires significant coordination. Finally, participation in the FireSmart Resiliency Committee brings together community leaders and firefighters to guide future education programming. Recommend at least one Texada Island representative on the FireSmart Resiliency Committee.

Table 42. FireSmart Education action recommendations.

Recommended Action	Description
1	Continue to emphasize FireSmart education events and open houses Focused on FireSmart concepts and activities occupants can do around their homes to reduce fire hazard.
2	qRD should continue to participate in a FireSmart Resiliency Committee. The Committee should discuss future FireSmart programming and structure moving forward including priorities specific to Texada Island.
3	Confirm communication plan, (previously completed with Regional partners) and communicate key risks and recommendations each community can take.
4	Work with BCWS to improve communication during wildfire incidents and improve real time information.
5	Promote education to • Support fuel management activities and including prescribed and cultural burning • Maintain current fuel breaks; irrigating and mowing sports fields, • Planting more deciduous shade trees • Distribute FireSmart educational resources

Recommended Action	Description
	• Increase awareness of local fire regime included in this plan. (Speak to historical fire in the area, return intervals and coastal ecosystems)
6	Organize annual Community Cleanup Day(s), with assistance to community members in cleaning their yards of combustible materials as well as assistance disposing of these materials including chipper rental if required and trailers for moving waste.
7	Support the FireSmart BC Plant Program at local garden centres or nurseries. Includes plant tags, banners, staff buttons and in-store advertising.

11.3 Legislation and Planning

Legislation and regulation are potential tools for reducing wildfire risk on public land. Provincial and Federal Acts and Regulations can provide means for local governments and First Nation governments to implement wildfire risk reduction. These are differentiated from development specific bylaws and regulations that may be present in a community, which are discussed in the following section on Development Considerations.

11.3.1 Current Status

It is important to consider new regulations within the context of Regional Districts Electoral Area's ability to administer and enforce them. While there are many options for regulations that may reduce wildfire risk, many of these are not feasible in a small community with limited capacity. The primary focus should be ensuring community members are complying with existing bylaws and regulations, such as the open burning bylaws established by the Van Anda and Gillies Bay Improvement Districts, and the Provincial OBSCR and the *Wildfire Act*. The qRD should continue to provide links to all relevant fire regulations on its FireSmart webpage.

11.3.2 Provincial Acts and Regulations

Three provincial acts and regulations are particularly relevant for wildfire risk mitigation: the BC Building Act and Regulation⁸⁶, the BC Open Burning and Smoke Control Regulation⁸⁷, and the BC Wildfire Act and Regulation.⁸⁸ The Forest and Range Practices Act is also relevant for larger scale wildfire risk mitigation work.

The *BC Building Act* creates a series of technical building requirements for buildings in BC. This also sets training and qualification requirements for building officials. Many of these requirements are designed to limit the spread of structure fire within a structure, however there are no provisions for limiting interface wildfire spreading to a structure.

BC Open Burning Smoke Control Regulation (OBSCR) covers open burning of wood debris (vegetative material) to manage smoke and fine particulate matter from contributing to poor air quality. OBSCR has requirements that pertain to burning for community wildfire risk reduction. The OBSCR requires anyone conducting an open burn for wildfire risk reduction to submit the plan to a director, to give notification to the community about the burn plan, that a ventilation forecast is "good" or "fair", and that the burn is completed within a day. Many local governments in BC have bylaws in place regulating open burning in addition to OBSCR. This may be pertinent for prescribed burning or debris burning for wildfire risk mitigation within the Electoral Area, where activities may be limited by OBSCR regulations.

⁸⁶ *Building Act, Statutes of British Columbia 2015 c. 2.*

<https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/15002>

⁸⁷ *BC Environmental Management Act: Open Burning Smoke Control Regulation BC Reg 152/2019, Statutes of British Columbia 2003, BC Reg 152/2019.* https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/152_2019/

⁸⁸ *BC Wildfire Act, Statutes of British Columbia 2004 c. 31.*

https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/04031_01

The Van Anda and Gillies Bay Improvement Districts both have bylaws in place regulating campfires and open burning. This is pertinent for prescribed burning or debris burning for wildfire risk mitigation within the Improvement District boundaries. Outside the two Improvement Districts' boundaries the provincial Wildfire Act is the relevant regulation for open fires.

11.3.3 Federal Acts and Regulations

Several key Federal Acts that may be relevant within the Electoral Area are the *Fisheries Act*⁸⁹, the *Species at Risk Act*,⁹⁰ and the *Migratory Birds Convention Act*⁹¹.

The Federal *Fisheries Act* is in place to provide a framework for the management and control of fisheries in Canada, as well as conservation and protection of fish and fish habitat. Any wildfire prevention and mitigation treatments that could impact fish or fish habitat, including riparian areas will need to adhere to the legal requirements of this Act.

The *Species at Risk Act* is federal legislation designed to prevent species from extinction and/or extirpation in Canada and provide recovery strategies for extirpated, endangered, and threatened species, as well as prevent species of concern from becoming threatened or endangered. The CWRP treatments and recommendations will need to consider species at risk and follow the requirements and prohibitions set out in SARA. Any land management should consider the environmental values at risk section to identify any species at risk, and include measures for ensuring compliance with the *Species at Risk Act*.

The *Migratory Birds Convention Act* protects most species of birds in Canada. This law contains regulations to protect birds, their nests and eggs from disturbance. This includes direct disturbance through hunting, wood harvesting, and commercial use, as well as indirect disturbance that may impact bird activities. Any land management activity that has potential to disturb birds protected under this Act must include measures for compliance with the Act. This is particularly important during summer nesting season, when bird populations are highest throughout BC.

⁸⁹ *Fisheries Act*, Revised Statutes of Canada 1985, c F-14. <https://laws-lois.justice.gc.ca/eng/acts/f-14/>

⁹⁰ *Species at Risk Act*, Statutes of Canada 2002, c. 29. <https://laws.justice.gc.ca/eng/acts/s-15.3/>

⁹¹ *Migratory Birds Convention Act*, Statutes of Canada 1994 c.22. <https://laws.justice.gc.ca/eng/acts/M-7.01/>

11.3.4 Action Planning

Effective legislation and planning are essential for reducing wildfire risks and fostering resilient communities. Developing FireSmart practices for publicly owned lands, such as parks and open spaces, establishes consistent standards for managing vegetation and creating defensible spaces, thereby reducing fire hazards in critical areas. Similarly, conducting FireSmart assessments for eligible buildings, critical infrastructure, culturally significant sites, and green spaces provides a detailed understanding of vulnerabilities, enabling targeted mitigation efforts to protect key assets.

Reviewing open burning bylaws and clearly defining enforcement roles are important to ensure regulations are aligned with current wildfire risks and effectively implemented.

Table 43. FireSmart Legislation and Planning action recommendations.

Recommended Action	Description
8	Ensure the design and maintenance of public land such as parks and greenspaces consider FireSmart practices.
9	Renew FireSmart assessments for eligible buildings, publicly owned critical infrastructure, culturally significant sites and/or green spaces.
10	Review vegetation management practices with MOTT and BC Hydro. Ensure right of ways and debris management is compliant with provincial regulations.

11.4 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 and may impact 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.

11.4.1 Current Status

Most inhabited structures are not compliant with FireSmart building design and materials. The most common deficiencies in the structures are combustible cladding, combustible decks, stairs, and fences, as well as combustible accessory buildings within 10m of the structures. The most common and significant landscaping issue is combustible materials near or directly adjacent to structures.

The BC Building Code currently does not require FireSmart principles in new construction. Incorporating FireSmart principles into the building code would help to reduce the risk to new homes and help protect communities from spreading wildfires.

11.4.2 Action Planning

To reduce wildfire risks on Texada Island, it is crucial to ensure awareness of how to incorporate FireSmart landscaping principles, minimizing hazards near structures. Integrating wildfire prevention and suppression measures into subdivision design ensures safer, more resilient developments. Finally, involving fire services and emergency management in development referrals enhances planning decisions, creating a robust, collaborative approach to wildfire risk reduction and community safety.

Table 44. FireSmart Development Consideration action recommendations.

Recommended Action	Description
12	Advocate for BC building code to require FireSmart principles.

11.5 Interagency Cooperation

It takes the collaborative efforts of multiple collaborators 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, provincial government, and local residents. Individually each are responsible to their own organizations, but all of the collaborator organizations are dependent upon each other to develop an effective Community Wildfire Resiliency Plan and undertake a successful wildfire response.

11.5.1 Interagency Cooperation: Current Status

As mentioned above in FireSmart foundations section, the Community FireSmart and Resiliency Committee is an important pillar to share information and progress about challenges and successes amongst Electoral Areas. Ensuring Texada Island representation on the CFRC would benefit increased interagency cooperation to increase FireSmart awareness and community support and implement FireSmart and wildfire risk reduction activities on the island.

The Texada Island fire departments encourage continued efforts for Fire Departments to work closely with the Regional District's FireSmart program. The community would benefit from a combination of public demonstrations and a program to showcase FireSmart principles. The FireSmart coordinator has been very helpful with Texada Island efforts, including annual training in use of SPU equipment. The following are recommended action items moving forward in regard to FireSmart Interagency Cooperation:

11.5.2 Action Planning

Strengthening FireSmart interagency cooperation is essential to enhancing wildfire resilience and fostering collaboration across diverse collaborators. Ensuring Texada participation in the Community FireSmart and Resiliency Committee would formalize efforts to share information, address challenges, and coordinate wildfire risk reduction initiatives across Electoral Areas. This committee, involving the relevant collaborators would ensure alignment of efforts and broad support for FireSmart activities.

Participating in integrated fuel management and cultural burning or prescribed fire planning tables, usually led by provincial ministries in collaboration with communities, would enhance cross-jurisdictional planning and leverage traditional ecological knowledge for wildfire prevention.

Providing Indigenous cultural safety training for emergency management personnel would further strengthen partnerships with Indigenous communities, promoting effective collaboration on prevention and suppression strategies.

Promoting attendance by a trained FireSmart representative from Texada Island to the Wildfire Resiliency and Training Summit would provide valuable opportunities for knowledge exchange, skill development, and the fostering of relationships critical to implementing FireSmart principles and wildfire risk reduction activities on Texada.

Table 45. FireSmart Interagency Cooperation action recommendations.

Recommended Action	Description
13	Provide Indigenous cultural safety training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.

11.6 Cross-Training

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

11.6.1 Current Status

For Texada's two fire departments the continued training and teamwork between BC Wildfire Service and FireSmart representatives are important for fire safety. Regular training helps everyone understand their roles during a wildfire. Firefighters gain valuable skills, and local knowledge is shared, making the community better prepared for fire emergencies.

There is currently regular collaboration between the two Texada fire departments but minimal cross training between the fire departments and BCWS staff based on the mainland. Participation from fire departments in cross training exercises with BCWS and other fire firefighters from the Region would be beneficial for preparedness.

11.6.2 Action Planning

Regular training with the BC Wildfire Service (BCWS) and FireSmart representatives would ensure that all parties understand their roles during a wildfire, fostering effective collaboration and preparedness. To enhance these efforts, structured training for FireSmart positions is essential, equipping individuals with the expertise needed to implement wildfire risk reduction measures and support community resilience.

Cross-training emergency management personnel is vital. By participating in cross-training exercises led by BCWS and structural firefighters, local responders gain valuable skills and insights from broader firefighting operations, while contributing their unique local knowledge. These initiatives strengthen community preparedness, improve interagency collaboration, and ensure that Texada Island is better equipped to manage wildfire risks.

Table 46. FireSmart Cross-Training action recommendations.

Recommended Action	Description
14	Training for FireSmart Positions held by the various jurisdictions such as: - Grow the Home Partner's program.
15	Continue Cross-training of fire department members, including structural fire and interface wildfire training. Ensure that local and provincial fire services work together to develop and test coordinated response.

11.7 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 a significant wildfire event.

11.7.1 Current Status

Texada Island is a very large island with a relatively small population predominantly settled in the northern third of the island. The island's longstanding mining activities provides many fuel free areas that would both prevent fire spread and provide safe zones. The mines also have a history of providing heavy equipment including water tenders to assist in community fire suppression efforts. The BC ferries terminal, provides access to larger vessels connecting to Powell River for the arrival of supporting mutual aid resources or for public evacuation.

The community evacuation brochure is an easy-to-understand document for residents and tourists to develop their own family emergency and evacuation plans⁹². The qRD has a community notification system in place that can alert subscribers via land line, cell phone, text message, and email of important emergency events including fire evacuations, hazardous materials incidents, floods, and other public safety concerns.

Texada Island has its own Structure Protection Unit (SPU). The SPU is well built and provides support anywhere needed on the island. The SPU is stored at the Gillies Bay fire hall.

Communication between emergency services such as Fire departments, BCWS and the other response jurisdictions occurs regularly at Emergency preparedness meetings. These meetings involve many collaborators within the Region and are an excellent chance to get updates from all sort of projects underway in the Region. Messaging to the public has been something that has been sometimes challenging to convey that the overall risk of a very large fire is relatively low relative to the high potential consequences of the impacts of a fire occurring during high or extreme conditions near or within the community.

11.7.2 Action Planning

Participating in cross-jurisdictional meetings and exercises focused on community interface wildfire response is crucial for fostering collaboration and refining response strategies. These activities offer opportunities to improve communication between Texada's fire departments, BC Wildfire Service (BCWS), and other responding agencies, ensuring alignment on wildfire suppression efforts.

⁹² Texada Island community, Gillies Bay Volunteer Fire Department, Van Anda Volunteer Fire Department, and Texada RCMP Detachment. "Texada Island Emergency Evacuation Guide," season-01 2024. https://www.qathet.ca/wp-content/uploads/2024/11/qRD_EVAC_brochure-Texada1.pdf.

To enhance community readiness, promoting resources such as the Emergency Management BC Wildfire Preparedness Guide at emergency preparedness events can help residents and tourists better understand the steps to take during a wildfire. Developing a re-entry guide following evacuations and an Emergency Recovery Plan would provide clear, actionable guidance for residents returning to affected areas.

Table 47. FireSmart Emergency Planning action recommendations.

Recommended Action	Description
18	Participate in a series of cross-jurisdictional meetings focusing specifically on tabletop exercises relating to wildfire preparedness and suppression with the goal of leading toward an actual multi-agency/mutual aid exercise.
19	Purchase ancillary equipment including hoses, fittings, portable pumps for outdated equipment.
20	Use all local materials to promote community emergency preparedness events focused on wildfire. Include priority understanding for shelter in place vs. evacuations.
21	Create a guide to re-entry after evacuation/ Emergency Response Recovery Plan.

11.8 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.

The Region's natural forest types as are less prone to ignition and sustained fire spread when compared to BC's Interior drier forests. In fact, many older forests (> 100 years old) within the WUI exhibit forest fuel conditions like a mature C-5 fuel type which would generally be classified as a 'low' fire threat and risk to communities. Since these forests already have low threat conditions, the authors have not recommended extensive proposed fuel treatments and it is recommended that these types of units be retained over time rather than harvested or fuel treated.

11.8.1 Current Status

Forest industry activities are quite active on Texada Island. Along with mining this is the largest Island in the qRD and has quite a substantial forested area. There has already been one fuel management prescription implemented on Texada in the vicinity of the communications towers. Maintenance work should be scheduled here within the next 5-10 years. Other significant critical infrastructure include the BC hydro sub-station and transmission line right of way crossing the mid island and the natural gas pipeline that traverses much of the island and includes its own maintained right of way.

11.8.2 Action Planning

Proactive wildfire mitigation efforts are critical to safeguarding Texada. Similar to other areas of the Region this study recommends consideration of trails on the island be enhanced with a 10-meter buffer of reduced flammable fuels. This step would be essential in reducing fuel loads and minimizing the potential for wildfire ignition and spread in these areas. This targeted action not only protects citizens but also enhances the resilience of the island's natural landscapes.

Developing a comprehensive, landscape-level Wildfire Risk Reduction (WRR) Plan is important for addressing broader wildfire risks. Such a plan allows for the strategic prioritization of treatment areas and ensures that risk reduction activities are aligned with the unique ecological and community needs of Texada Island. Pursuing this plan would integrate local expertise and multi-agency collaboration, ensuring a holistic approach to wildfire resilience.

Table 48. FireSmart Vegetation Management action recommendations.

Recommended Action	Description
22	Recognize the potential for trails in parklands and establish hand guards/fuel breaks and access/anchor points. Look to enhance wherever possible.

Recommended Action	Description
23	Apply for provincial funding to support maintenance for existing fuel treatments, as well as treating areas that are low risk to maintain this status • Mount Pocahontas
24	Implement and encourage landscaping using FireSmart vegetation management principles. • Advocate for good deciduous species versus high risk- low growing conifers (cedar hedges, juniper) • Implement landscaping efforts towards pruning for mature conifers and mitigating ladder fuels next to sheds. Clearing low lying branches, piles, saplings and coniferous species next to structures.
26	Work closely with all local forest industry operators to incorporate wildfire planning into their management plans.
31	Licensees should consider planting deciduous species post-harvest in areas near the WUI to lower the number of high-risk conifers.

11.8.3 Proposed Fuel Treatments

Table 49. Proposed Fuel Management Treatment Summary Table

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Mod	Low		
TU-12	2.1	FireSmart	-	-	2.1	Area in close proximity to boatyard and ramp access for water transportation	FireSmart area to protect water transportation access and buildings to the south
TU-13	9.1	Critical infrastructure FTU	-	9.1	-	Critical infrastructure within unit	Maintain reduced fuel around infrastructure as well as reduced fuel area to the south of infrastructure

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Mod	Low		
TU-14	3.4	FireSmart Fuel treatment	-	-	3.4	Unit borders private land area on all sides	Apply firesmart principles within unit as most area overlaps with firesmart boundaries of private land owners around unit
TU-15	8.0	Fuel treatment egress along road	-	-	8.0	Buffer road treatment off of Blubber Bay Rd, continuous buffer would require treatment over small amounts of private land area	Egress FTU for Van Anda residents.



Figure 31. Proposed Fuel Management Treatment Areas within the WUI of Texada Island

12 Lasqueti (Electoral Area E)

12.1 Summary

Lasqueti Island, from a wildfire and forest fuels perspective –has generally lower wildfire threat due to the very limited areas of logging slash and generally very little other industrial activities or development. Most existing forests are mature cedar/Douglas fir with varying levels of shrubs and/or other vegetation. Human ignition is a risk factor – especially in the summer with a lot of visitors. Structure fires that turn into wildfires are a concern.

Lasqueti has standing water bodies and wetlands. Pete’s Lake Water System operates a communal water system in the area immediately surrounding False Bay. There are no fire hydrants anywhere on the island.

The LIVFD has installed some water tanks for fire suppression at the north fire hall and in conjunction with Pete’s Lake Water System there are tanks located near the farmer’s market. More water tanks and reservoirs (similar to Savary) should be considered around other areas of the island to expedite the LIVFD’s access to water during fire emergencies. The LIVFD firefighters should practice accessing the current tanks to ensure efficient use of these water sources in an emergency. It is understood that many Lasqueti residents also maintain water tanks on their properties and recommend these be situated such that they will be available for firefighters when necessary.

The FireSmart Program has been operating for several years now on Lasqueti with good initial uptake. Recommend the qRD continue to support FireSmart education across Lasqueti.

The LIVFD should continue training in interface fire scenarios in their weekly practices and conduct larger drills multiple times a year and ideally at once per year with BCWS crews.

12.2 Education

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

Active Education is the first step of Education is to ensure community leaders and members can access and understand this CWRP. The CWRP is a large and complex technical document, and is unlikely to be read in full by all members of the community. As such, a summary overview should be provided to community leaders and members. This should include the Executive Summary, the Action Plan, and the wildfire risk map within this CWRP

Passive Education is important to provide educational opportunities that community members can access on their own schedule. FireSmart and CWRP information should be posted wherever residents typically access community information, such as the RD's website, or any gathering places with poster boards. Social media is also an excellent avenue for distributing FireSmart information. These efforts should be concentrated in the spring and summer, during peak wildfire danger, in the form of a comprehensive educational campaign. Where possible, passive engagement should be connected with opportunities for active engagement; for example, directing residents to a planned FireSmart event using social media pages. Regularly updated wildfire hazard signs, coordinated with the fire danger, are also useful. These signs communicate periods of elevated wildfire danger, where extra caution is recommended for community members to prevent inadvertent fire ignitions.

12.2.1 Current Status

Lasqueti Island has benefited from a small group of dedicated Local FireSmart Representatives trained and supported through the qRD FireSmart Program. The FireSmart Coordinator is responsible for developing education initiatives with support for carrying this out in the community by the local FireSmart Representatives. FireSmart education should be conducted annually, planning out the various initiatives as part of a campaign to build community awareness. Developing an annual education plan ensures the events and initiatives are coordinated, taking advantage of seasonal trends and regular community gatherings. Once a plan is in place, it can be revisited and revised each year.

12.2.2 Action Planning

Community engagement is vital for continuing to improve wildfire resilience on Lasqueti Island. Reviewing this CWRP's risks and actions provides a foundation for effective planning. FireSmart events educate residents on reducing fire hazards. Participating in the Regional FireSmart Resiliency Committee, prioritizing firefighter involvement, ensures accountability and collaboration on future initiatives.

Education on fuel management and prescribed burning builds local understanding, and annual Community Cleanup Days engage residents in reducing fire risks, offering resources like chipper rentals

and material disposal. Together, these efforts foster an informed, proactive community prepared to mitigate wildfire risks.

Table 50. FireSmart Education action recommendations.

Recommended Action	Description
1	Continue to emphasize FireSmart education events and open houses Focused on FireSmart concepts and activities occupants can do around their homes to reduce fire hazard.
2	Continue to support a FireSmart Resiliency Committee comprised of leaders in the community. The Committee should discuss future FireSmart programming and structure moving forward. Lasqueti Island would benefit from having a representative on the FRC
3	Confirm communication plan, (previously completed with Regional partners) and communicate key risks and recommendations each community can take.
4	Work with BCWS to improve communication during wildfire incidents and improve real time information
5	Promote education to • Support fuel management activities and including prescribed and cultural burning • Maintain current fuel breaks; irrigating and mowing sports fields, • Planting more deciduous shade trees • Distribute FireSmart educational resources • Increase awareness of local fire regime included in this plan. (Speak to historical fire in the area, return intervals and coastal ecosystems)
6	Organize annual Community Cleanup Day(s), with assistance to community members in cleaning their yards of combustible materials as well as assistance disposing of these materials (chipper rental if required, trailers for moving waste).

12.3 Legislation and Planning

Legislation and regulation are potential tools for reducing wildfire risk on public land. Provincial and Federal Acts and Regulations can provide means for local governments and First Nation governments to implement wildfire risk reduction. These are differentiated from development specific bylaws and regulations that may be present in a community, which are discussed in the following section on Development Considerations.

12.3.1 Current Status

It is important to consider new regulations within the context of the Regional District's Electoral Areas ability to administer and enforce them. While there are many options for regulations that may reduce wildfire risk, many of these are not feasible in a small community with limited capacity. There are currently no local bylaws regulating open fire or smoke on Lasqueti Island. The primary focus should be ensuring community members are aware of and complying with existing regulations, such as OBSCR and the *Wildfire Act*.

12.3.2 Provincial Acts and Regulations

Three provincial acts and regulations are particularly relevant for wildfire risk mitigation: the BC Building Act and Regulation⁹³, the BC Open Burning and Smoke Control Regulation⁹⁴, and the BC Wildfire Act and Regulation.⁹⁵ The Forest and Range Practices Act is also relevant for larger scale wildfire risk mitigation work.

The *BC Building Act* creates a series of technical building requirements for buildings in BC. This also sets training and qualification requirements for building officials. Many of these requirements are designed to limit the spread of structure fire within a structure, however there are no provisions for limiting interface wildfire spreading to a structure.

BC Open Burning Smoke Control Regulation (OBSCR) covers open burning of wood debris (vegetative material) to manage smoke and fine particulate matter from contributing to poor air quality. OBSCR has requirements that pertain to burning for community wildfire risk reduction. The OBSCR requires anyone conducting an open burn for wildfire risk reduction to submit the plan to a director, to give notification to the community about the burn plan, that a ventilation forecast is "good" or "fair", and that the burn is completed within a day.

BC Wildfire Act and *Wildfire Regulation* sets out legal responsibilities and obligations in BC that are enforceable during bans and restrictions. This Act and regulations could impact this CWRP

⁹³ *Building Act, Statutes of British Columbia 2015 c. 2.*

<https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/15002>

⁹⁴ *BC Environmental Management Act: Open Burning Smoke Control Regulation BC Reg 152/2019, Statutes of British Columbia 2003, BC Reg 152/2019.* https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/152_2019/

⁹⁵ *BC Wildfire Act, Statutes of British Columbia 2004 c. 31.*

https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/04031_01

recommendations and treatments when a provincial fire ban is in effect. *The Wildfire Act* also limits industrial activities during periods of elevated wildfire danger based on the risk of ignition of those activities. These acts and regulations can be superseded by a local bylaw or regulation.

12.3.3 Federal Acts and Regulations

Several key Federal Acts that may be relevant within the Electoral Area the *Fisheries Act*⁹⁶, the *Species at Risk Act*,⁹⁷ and the *Migratory Birds Convention Act*⁹⁸.

The Federal *Fisheries Act* is in place to provide a framework for the management and control of fisheries in Canada, as well as conservation and protection of fish and fish habitat. Any wildfire prevention and mitigation treatments that could impact fish or fish habitat, including riparian areas will need to adhere to the legal requirements of this Act.

The *Species at Risk Act* is federal legislation designed to prevent species from extinction and/or extirpation in Canada and provide recovery strategies for extirpated, endangered, and threatened species, as well as prevent species of concern from becoming threatened or endangered. The CWRP treatments and recommendations will need to consider species at risk and follow the requirements and prohibitions set out in SARA. Any land management should consider the environmental values at risk section to identify any species at risk, and include measures for ensuring compliance with the *Species at Risk Act*.

The *Migratory Birds Convention Act* protects most species of birds in Canada. This law contains regulations to protect birds, their nests and eggs from disturbance. This includes direct disturbance through hunting, wood harvesting, and commercial use, as well as indirect disturbance that may impact bird activities. Any land management activity that has potential to disturb birds protected under this Act must include measures for compliance with the Act. This is particularly important during summer nesting season, when bird populations are highest throughout BC.

12.3.4 Action Planning

Developing and implementing FireSmart practices for publicly owned lands is essential to reducing wildfire risks and ensuring resilient community spaces. Conducting FireSmart assessments for eligible buildings, critical infrastructure, culturally significant sites, and green spaces provides targeted recommendations for protecting these valuable assets.

Regularly reviewing the provincial open burning regulations with LIVFD and the general public will ensure understanding of appropriate burning practices.

Table 51. FireSmart Legislation and Planning action recommendations.

⁹⁶ *Fisheries Act, Revised Statutes of Canada 1985, c F-14.* <https://laws-lois.justice.gc.ca/eng/acts/f-14/>

⁹⁷ *Species at Risk Act, Statutes of Canada 2002, c. 29.* <https://laws.justice.gc.ca/eng/acts/s-15.3/>

⁹⁸ *Migratory Birds Convention Act, Statutes of Canada 1994 c.22.* <https://laws.justice.gc.ca/eng/acts/M-7.01/>

Recommended Action	Description
8	Ensure the design and maintenance of public land such as parks and greenspaces consider FireSmart practices.
9	Renew FireSmart assessments for eligible buildings, publicly owned critical infrastructure, culturally significant sites and/or green spaces.
10	Review vegetation management practices with MOTT. Ensure right of ways and debris management is compliant with provincial regulations.

12.4 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 and may impact 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.

12.4.1 Current Status

Land use planning on Lasqueti Island is overseen by the Islands Trust. There is minimal ongoing development on Lasqueti Island. There are no neighbourhood scale developments and unlikely to ever be any significant density on the island. Most building and property development is for rural residential or recreational properties.

Most structures on Lasqueti Island are not compliant with FireSmart building design and materials. The most common deficiencies in the structures are combustible roofing, siding, and decks. The most common and significant landscaping issue is combustible materials near or directly adjacent to structures.

The BC Building Code currently does not require FireSmart Principles in new construction. Incorporating FireSmart Principles into the building code would help to reduce the risk to new homes and communities from spreading wildfire.

12.4.2 Action Planning

To date there has been minimal connection between the qRD's FireSmart Program and the Islands Trust. To help build relationships this CWRP should be shared with the Islands Trust and encourage connection between the Islands Trust and the qRD's FireSmart Program to ensure awareness and consider opportunities to reduce wildfire risks on Lasqueti Island through land use planning initiatives.

Table 52. FireSmart Development Consideration action recommendations.

Recommended Action	Description
12	Advocate for BC building code to require FireSmart principles.

12.5 Interagency Cooperation

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

12.5.1 Current Status

As mentioned above in FireSmart foundations section, the Community FireSmart and Resiliency Committee is an important pillar to share information and progress about challenges and successes amongst Electoral Areas. Ensuring Lasqueti representation on the committee will ensure awareness in the community of FireSmart opportunities. The following are recommended action items moving forward in regard to FireSmart Interagency Cooperation:

12.5.2 Action Planning

Enhancing interagency collaboration is critical for wildfire risk reduction and resilience. Engaging in integrated planning tables for fuel management, cultural burning, and prescribed fire—generally led by ministry staff in partnership with local communities—ensures a unified strategy for managing wildfire risks across boundaries while incorporating both technical expertise and traditional knowledge.

Cultural safety training for emergency management personnel is vital for building strong, respectful partnerships with Indigenous communities, improving collaboration in both wildfire prevention and suppression.

Attendance by a Lasqueti Island trained FireSmart volunteer at the Wildfire Resiliency and Training Summit would provide valuable learning opportunities, strengthen networks, and lead to improved FireSmart programming for the community.

Table 53. FireSmart Interagency Cooperation action recommendations.

Recommended Action	Description
13	Provide Indigenous cultural safety training to emergency management personnel in order to more effectively partner with, and provide assistance to, Indigenous communities for both wildfire prevention and suppression.

12.6 Cross-Training

Wildland-Urban Interface resiliency planning and incident response draw on many different professions who do not typically work together into a wildfire environment. Cross-training of fire fighters, utility workers, local government and First Nations administration, planning 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.

12.6.1 Current Status

There is currently minimal cross-training between LIVFD and BC Wildfire Service. This is perhaps not surprising given the island's remoteness, however training and teamwork between BCWS, and local volunteer fire departments are important starting place to ensure firefighter safety and for effective response.

There has been very good uptake on FireSmart training including the Home Partners Program by community members on Lasqueti Island. Continuing to find more training opportunities for community members to train in the various FireSmart disciplines will continue to benefit community public safety and wildfire resilience.

12.6.2 Action Planning

Building capacity for fire department members, expanding training to include both structural fire and interface wildfire response is critical for addressing the specific challenges posed by wildland-urban interface fires. This dual training enables firefighters to respond safely and more effectively to the diverse risks faced by firefighters, particularly in a remote community, and improves overall readiness and ensuring a more integrated approach to interface fire safety and suppression.

Table 54. FireSmart Cross-Training action recommendations.

Recommended Action	Description
14	Training for FireSmart Positions held by the various jurisdictions such as: - Grow the Home Partner's program.
15	Continue Cross-training of fire department members, including structural fire and interface wildfire training. Ensure that local and provincial fire services work together to develop and test coordinated response.

12.7 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 as a whole.

12.7.1 Current Status

Lasqueti Island's logistical isolation offers both benefits and challenges for emergency planning. The isolation, along with the lack of utility services fosters a community culture that may be more resilient however in times of major events such as significant fires the access to mutual aid and other surge supports external to Lasqueti may be delayed. The community's regular access to Vancouver Island via the passenger ferry offers limited ability for the movement of people and resources. Private vessels including barges are available in the greater area.

There is limited communication between the LIVFD and BCWS resources based nearby at Errington, Coastal Fire Centre.

The qRD has developed a community evacuation guide for residents and visitors on Lasqueti. The guide explains available resources and emergency preparedness suggestions. The qRD has a community notification system in place that can alert subscribers via land line, cell phone, text message, and email of important emergency events including fire evacuations.

12.7.2 Action Planning

While the LIVFD already has some wildland and structure protection equipment, the department will benefit from a further stocking of sprinklers in a SPU setup. Currently provincial funding is available for fire departments to develop SPUs.

Engaging on a more frequent basis, at least annually, with the BCWS to engage specifically in discussions of cross-jurisdictional responses and tabletop exercises focused on wildfire suppression will improve readiness for seasonal wildfire risks and help to ensure firefighter safety for both agencies.

Promoting resources such as the community evacuation guides at community events will help residents toward effective preparedness measures. Fostering discussions based on expected wildfire behaviour on Lasqueti toward understanding public safety options; i.e. evacuation necessity vs sheltering in place; this is especially relevant in an isolated community. Developing a re-entry guide and Emergency Recovery Plan will help to provide guidance for post-evacuation recovery, ensuring a smoother transition for affected residents.

Table 55. FireSmart Emergency Planning action recommendations.

Recommended Action	Description
16	Consider purchase of FireSmart structure protection equipment for Island communities

Recommended Action	Description
	Currently lacking SPU for Lasqueti. Logistically, the island would greatly benefit from having access immediately should they need it
18	Participate in a series of cross-jurisdictional meetings focusing specifically on tabletop exercises relating to wildfire preparedness and suppression with the goal of leading toward an actual multi-agency/mutual aid exercise.
19	Purchase ancillary equipment including hoses, fittings, portable pumps for outdated equipment.
20	Use all local materials to promote community emergency preparedness events focused on wildfire. Include priority understanding for shelter in place vs. evacuations.
21	Create a guide to re-entry after evacuation/ Emergency Response Recovery Plan.

12.8 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.

12.8.1 Current Status

There has not been any government sponsored vegetation management projects on Lasqueti Island. The island is predominantly private land thus limiting opportunities for future grant funded fuel treatments.

12.8.2 Action Planning

Conducting FireSmart home assessments to support land owners ensures that residents' decisions are based on accurate, site-specific data and informed by trained expert recommendations. These assessments provide critical insights into fire behavior, fuel loads, and treatment priorities, creating a strong foundation for effective, science-based vegetation management and wildfire risk mitigation. The qRD should continue to support recruitment and training for community members to provide FireSmart assessments.

With so many existing standing water bodies and private land limiting eligible areas no specific publicly funded fuel treatments are being proposed on Lasqueti. Similar to Savary and elsewhere in the rural areas, the qRD should advocate to MOTT to ensure its road right of ways are maintained to minimize accumulations of ground and ladder fuels. Effective maintenance along Lasqueti's public roads would minimize the potential for spreading fires, offer the most practical fuel breaks, and ensure safe public and firefighter access and egress.

Appendix A: Positives In the Current Situation

FireSmart Assessments have been conducted, on request, at over 500 residential properties throughout the Region since 2018.

Things the public can do include:

- Request a FireSmart home assessment then follow through on recommendations.
- Work with neighbours to reduce fire risk at the neighbourhood level.
- Visit <https://firesmartbc.ca/>
- Understand the fire regulations in their area, respect prohibitions, and report non-compliance during fire bans.

The qRD FireSmart Program has provided FireSmart assessments at parks and critical infrastructure throughout the Region. While improvements can still be made, many of the parks and infrastructure possess qualities that minimize fire risk. All parks and critical infrastructure should receive regular FireSmart reassessments.



Figure 32. Mowat Bay fire resistant mowed green grass and water source in foreground



Figure 33. Green space with low wildfire hazard around Hospital



Figure 34. Larry Gouthro Park showing irrigated, mowed green grass. qRD and City Parks are full of year-round green grass and defensible spaces.



Figure 36. Mowat Bay Park outbuilding with non combustible siding and metal Roof



Figure 35. Low Hazard stand of Hybrid Poplar along Hwy 101

Appendices B: Wildfire Threat Assessment Scorecard

WTA Name	Priority Score	Threat Level	Threat Score	Coordinates
WTA-107	10	High	64	124° 28.015' W 49° 42.280' N
WTA-N2	41	High	60	124° 48.326' W 49° 56.397' N
WTA-202	38	High	59	124° 18.667' W 49° 47.427' N
WTA-114	58	High	58	124° 34.142' W 49° 53.517' N
WTA-N1	37	Moderate	53	124° 30.176' W 49° 51.682' N
WTA-110	42	Moderate	52	124° 31.549' W 49° 51.257' N
WTA-N3	41	Moderate	51	124° 47.658' W 49° 56.409' N
WTA-N4	54	Moderate	50	124° 46.304' W 49° 56.764' N
WTA-112	50	Moderate	50	124° 33.239' W 49° 53.113' N
WTA-L2	33	Moderate	50	124° 21.575' W 49° 31.507' N
WTA-111	50	Moderate	49	124° 30.210' W 49° 51.653' N
WTA-102	31	Moderate	47	124° 33.851' W 49° 44.983' N
WTA-113	41	Moderate	45	124° 33.083' W 49° 53.386' N
WTA-103	31	Moderate	45	124° 33.903' W 49° 45.317' N
WTA-106	15	Moderate	45	124° 20.926' W 49° 38.383' N
WTA-206	45	Moderate	44	124° 28.949' W 49° 50.128' N
WTA-L1	39	Moderate	44	124° 21.036' W 49° 29.387' N
WTA-L4	47	Moderate	43	124° 10.267' W 49° 27.054' N
WTA-104	43	Moderate	42	124° 27.867' W 49° 39.425' N
WTA-122	38	Moderate	42	124° 35.743' W 49° 54.399' N
WTA-116	33	Moderate	42	124° 40.214' W 49° 56.086' N
WTA-121	18	Moderate	42	124° 46.001' W 49° 59.926' N
WTA-205	48	Low	41	124° 30.754' W 49° 49.045' N
WTA-204	38	Low	40	124° 30.404' W 49° 48.901' N
WTA-119	25	Low	40	124° 42.619' W 49° 58.339' N

WTA Name	Priority Score	Threat Level	Threat Score	Coordinates
WTA-120	25	Low	40	124° 44.173' W 49° 58.424' N
WTA-207	35	Low	39	124° 29.946' W 49° 50.915' N
WTA-109	34	Low	39	124° 37.483' W 49° 47.739' N
WTA-108	11	Low	39	124° 33.830' W 49° 44.196' N
WTA-201	29	Low	38	124° 12.018' W 49° 47.477' N
WTA-118	48	Low	36	124° 30.887' W 49° 54.208' N
WTA-203	38	Low	36	124° 20.741' W 49° 47.088' N
WTA-117	33	Low	34	124° 41.086' W 49° 56.807' N
WTA-115	30	Low	32	124° 33.785' W 49° 54.288' N
WTA-101	42	Low	31	124° 24.155' W 49° 48.170' N
WTA-L3	40	Low	25	124° 09.997' W 49° 27.129' N
WTA-105	15	Low	19	124° 26.720' W 49° 38.959' N

Appendix C: Preparedness Checklists

Preparedness Checklist			
Increased Situational Awareness and Communication Required if > 15/20 Red Flags are checked			
Category		Y/N	Red Flag Indicators
Seasonal conditions	Weather Conditions		High Temperatures (above 30°C)
			Low RH (below 30%)
			Cross Over (Temps are higher than RH)
			Shifting/ Strong Winds
			Local drought warnings?
	Vegetation Conditions		Dry Fuels = FFMC >80
			DMC > 30
			DC > 300
Weekly Factors	Human Factors		Increased ignition potential (e.g., fireworks, campfires)
			Increased risk indicated by recent wildfires in the Region (ie, lightning busts)
	Community Resources		SPU unit unavailable?
			Are Initial attack crews on deployment.
	Communication		Lack of Communication/ Technical issues?
			Emergency manager on days off/ Incident command changeover?
			Lack of evacuation procedures and emergency contacts
Fire Specific	Wildfire Activity		Other priority fires in Coastal?
			Lack of updates from BCWS
			Lack of evacuation routes
			Fire in difficult access area?
			Steep Slopes affecting initial attack success?

Responder Safety Checklist

All responders will receive a pre-deployment safety briefing that includes:

- ☐ Current wildfire location, rank, and direction of travel and any changes expected during the operational period;
- ☐ Current weather and any changes expected during the operational period;
- ☐ Current and planned air operations;
- ☐ Current and planned fuel mitigation activities (backburns, land clearing)
- ☐ Check-in procedures and intervals;
- ☐ Other hazards in operational areas;
- ☐ Safety zone locations;
- ☐ Medical unit location(s);
- ☐ Reporting structure, assignment, and radio call-sign;
- ☐ Assigned radio frequency(ies);
- ☐ Contingency communications (cell phone, satellite phone numbers); and
- ☐ Expectations for personal protective equipment.

Appendix D: Fire-Landscape Threat Tool Modelling Methodology

Step 1: FireLandTT Modelling and Mapping

FireLandTT Overview

FireLandTT or the **Fire Landscape Threat Tool** is a landscape scale fire behaviour, threat, and risk modelling tool which leverages the predictive power of the Canadian Forestry Fire Danger Rating system⁹⁹, the Fire Behaviour Prediction System¹⁰⁰, and the semi-empirical Crown Fire Initiation and Spread (CFIS)¹⁰¹ to predict wildfire risk at the landscape scale. This tool incorporates a multitude of fire, wind, fuel, and topography models linked together to predict wildfire behaviour outputs over a range of conditions

FireLandTT Inputs

Crown Fire Probability (cBP), **Head Fire Intensity (HFI)**, and **Rate of Spread (ROS)** are important variables to consider when evaluating the potential wildfire threat and risk of a given area. These variables determine where the greatest potential fire behaviour might occur and where suppression resources should be focused. FireLandTT wildfire modelling tool generates cBP, HFI, and ROS outputs by iterating over a range of weather conditions generated based on local, heterogeneous weather specific to a particular AOI to produce the relative wildfire behaviour on a cell-by-cell basis. These iterations are then aggregated for a chosen landscape to generate understanding of the highest potential wildfire risk. While the model does not simulate wildfire spread, it does iterate over real and fine scale heterogeneous weather conditions specific to each cell and includes assessments of specific stand physical attributes like canopy fuel loads, canopy base height, and canopy bulk density. These attributes are critical to assessing crown fire behaviour potential, and thus assessments of wildfire threat and risk. This differs from other wildfire threat methodologies, such as the PSTA, by simulating the physical vegetation on the landscape, as well as the range of potential intensities of the wildfire. It differs from Monte Carlo simulation based spread models such as BurnP3, by linking to semi-empirical models of fire behaviour, CFIS¹⁰², models to assess ignition risk, and including heterogeneous weather and stand conditions.

Major inputs to the program include digital elevation models, historical spatial ignition patterns, Vegetation Resource Inventory (VRI) Data, fire weather data and ground truthed fuel types (Fire Behaviour Prediction System, FBP) datasets. In addition, the program's estimates are improved using interpolated wind grids, historical fire event weather, daily fire weather data, predicted fuel structural

⁹⁹ Van Wagner, C. E. and Pickett, T.L. 1985. "Equations and FORTRAN program for the Canadian forest fire weather index system." *Forestry Technical Report No. 33*. Ottawa, Environment Canada, Canadian Forestry Service, Petawawa National Forestry Institute.

¹⁰⁰ B.M. Wotton, B.M.; Alexander, M.E; Taylor, S.W. 2009. *Updates and Revisions to the 1992 Canadian Forest Fire Behaviour Prediction System*. Information Report GLC-X-10. Sault Ste. Marie, Natural Resources Canada, Great Lakes Forestry Centre.

¹⁰¹ Alexander, Martin E.; Cruz, Miguel G.; Lopes, A.M.G. 2006. "CFIS: a software tool for simulating crown fire initiation and spread." *Proceedings of 5th International Conference on Forest Fire Research*, 27-30 November 2006. Amsterdam, The Netherlands: Elsevier B.V. pp. 1-13.

¹⁰² Alexander et al, 2006.

and moisture condition data – all of which help better describe the landscape conditions conducive to fire behaviour and best contextualize the Regional impact of fire on nearby communities. Results from FireLandTT allows for wildland-urban interface (WUI) areas to be assessed relative to the larger landscape, and understand potential interactions and landscape patterns of fire threat. Table 56 summarized key inputs for FireLandTT.

FLTT follows an iterative process by which fire weather lists are developed wherein weather data is extracted for days in which important indices are above 90th percentile (BUI, ISI, FFMCI, FWI). This process gives FLTT a range of extreme conditions to model fire behavior and spread potential at without oversimplifying to extreme and unlikely conditions, ie all indices at 90th percentile. The model process is then run over everyday in the created fire weather list with static raster scenes of weather variables for each day. Although weather parameters key for predicting fire behavior based on CFFDRS (FFMC, BUI) are not spatially explicit (ie they do not vary over the AOI) they do vary day by day and so median assessments of fire behavior outputs should include fire potential under different weather conditions as an aggregate of all runs; usually 2000+ separate fire weather environments.

Table 56. FireLandTT model inputs and methods for deriving wildfire risk.

Input	Description	Secondary Inputs
Ignition Likelihood Maps	Mapped surface of ignition probability based on biophysical and anthropomorphic input variables fitted to a random forest classification model for both Human and Lightning	Historical Ignition Data from BCWS
Crown Fire Probability Grids	Mapped surface of crown fire probability as produced from CFIS modelling at the landscape scale.	Uses VRI input polygon data to model forest canopy structure data and fuel moisture indices. Those variables along with wind, surface fire behaviour, and environmental variables are fed into the modelling system to predict probability of crown fire activity.
Weather Station Data	Fire weather list of individual stations or mean of all station data within AOI	Last 16 years of weather data: 2009-2024. Used to create surfaces of fire weather indices at 90 th percentile.
Surface Fuel Consumption Grids	Produced as intermediate outputs from fire behaviour prediction system runs and fed into CFIS or modelled through the use of equations from W.J de Groot et al 2009 ¹⁰³ .	Surface fuel consumption is integral to predicting the intensity of surface fires burning in a cell and thus the likelihood that those surface fires will achieve crowning activity.

¹⁰³ de Groot, W.J.; Pritchard, J.M.; Lynham, T.J. 2009. "Forest floor fuel consumption and carbon emissions in Canadian boreal forest fires." *Canadian Journal of Forest Research*. 39(2): 367-382.

Input	Description	Secondary Inputs
Canopy Structure Data	Surfaces of modelled canopy structure data for use in CFIS model. Models from Cruz et al. 2012 ¹⁰⁴ and inputs from MOF VRI data.	Using VRI polygon data on canopy closure, forest type, basal area, stem density, and tree height to predict canopy base height, canopy bulk density, and canopy fuel load. These inputs feed into CFIS.
Forest Structure Data	Used to modify fuel types with tree health data	Percent dead fir and percent conifer in M-1/2 fuels
Environmental Variables	Surfaces of foliar moisture content, fine fuel moisture content (FMC), and 90 th percentile weather indices for build up index (BUI), Fire Weather Index (FWI), Initial Spread Index (ISI), and wind speed.	90 th percentile indices are generated from fire weather list. Environmental conditions for fine fuel moisture are predicted from equations in Wotton and Beverly 2007 ¹⁰⁵ and FMC is predicted from Alexander et al. 2009 ¹⁰⁶ .
Sustained Flaming Ignition Probability Grids	Probability surfaces of AOI based on Beverly and Wotton 2007 models to predict the probability of sustained flaming combustion given observations of fire weather indices.	Predicts likelihood of an ignition of a smoldering firebrand if it were to land on exposed fuels. Can be linked to our empirical crown fire models. ¹⁰⁷

The FBP fuel types used in FireLandTT as a spatial data set require field verification as the spatial data may not capture all recent landscape changes and/or may be inaccurate within particular areas of interest. Reconnaissance was conducted and any inconsistencies between field observations and the spatial data set were corrected using field-derived shapefiles of true fuel types. The fuel type layer was vectorized to merge polygonal changes and then reverted to a raster layer to be implemented in FireLandTT.

FireLandTT Outputs

FireLandTT outputs are in the form of raster cell grids, where each cell grid represents a given area (e.g., 50 m grid resolution means that each square on the map represents 2500 square meters). Chosen cell resolution is determined by a variety of factors including, but not limited to; the scale of historical fire behaviour patterns, potential computational load, data quality, landscape size, and

¹⁰⁴ Cruz, M.G.; Alexander, M.E. 2012. "Evaluating regression model estimates of canopy fuel stratum characteristics in four crown fire-prone fuel types in western North America." *International Journal of Wildland Fire* 21(2):168-179.

¹⁰⁵ Wotton, B. M., and J. L. Beverly. 2007. "Stand-specific litter moisture content calibrations for the Canadian Fine Fuel Moisture Code." *International Journal of Wildland Fire*, v. 16 (4): 463-472.

¹⁰⁶ Wotton et al, 2009.

¹⁰⁷ Beverly and Wotton, "Modelling the Probability of Sustained Flaming."

forest/fuel/landscape structural patterns, but frequently range between 50 and 200m, allowing for relatively fine scale analysis of fire behaviour patterns. These outputs are:

- Mean/Median weighted Head Fire Intensity (HFI) (kw/m)
- Mean/Median weighted Rate of Spread (ROS) (m/min)
- Relative Ignition Likelihood (%)
- Probability of Crown Fire Occurrence (%)
- Probability of Sustained Flaming Combustion (%)

Rate of Spread and Head Fire Intensity

Both HFI and ROS outputs are essential elements to describing wildfire behaviour and the level of difficulty in successful suppression efforts. To generate assessments of mean HFI and ROS, FireLandTT is run on the landscape over all potential weather days in the created fire weather dataset. After processing of all available station data within a particular area, domain winds are generated for each station and for all stations together to get the mean wind speed for eight directions (0, 45, 90, 135, 180, 225, 270, and 315). Depending on the study area, the fire behavior analyst makes the assessment about which station to use or whether to use the mean of all available station data to best assess fire weather for that particular landscape. These values are then interpolated and modeled through the use of the WindNinja modeling software to create wind direction and speed grids for all angles. These grids are then used as structure variables to add our heterogenous fire weather parameter for the model runs over every day of our fire weather dataset. Daily FLTT processing is as follows:

For each day, the wind speed and direction are pulled from the weather list. FLTT then finds the closest wind direction grid based on the observed wind direction that day (i.e. 182 degrees observed = 180-degree bin) and pulls both the wind speed and direction grid from that angle. The wind speed grid is then modified by the proportionate change in wind speed between the actual observed wind speed for that day from the weather list and the mean domain wind that the speed grid was modeled at. For example, if the observed wind speed was 15 km/hr and the domain wind for the closest direction bin was 11 km/hr, the wind speed grid would be multiplied by the ratio of the observed speed to the domain speed (15/11) to get the modified wind speed grid for that day. This allows us to update the model of wind behavior for a given landscape for each individual weather condition and best assess fire behavior across a range of wind speeds. Wind speed grids then go into calculation of ISI surfaces which are used to drive fire behavior outputs in CFFDRS and so introduce fine scale heterogeneity in fire behavior outputs into each daily run. All inputs into CFFDRS FBP {Fuel type, Latitude, Longitude, FPMC, BUI, WS, Slope, Julian Day, Aspect, Percent Conifer, Wind Direction, ISI, Elevation, and Foliar Moisture Content} are then fed into the Fire Behavior Prediction equations to produce assessments of Head Fire Intensity, Rate of Spread, and Surface Fuel Consumption. Fine fuel moisture is then modeled with equations from Wotton and Beverly 2007¹⁰⁸ to predict stand specific litter moisture content based on season, forest type and structure, and fire weather variables. This surface, along with our modified wind

¹⁰⁸ Wotton and Beverly, "Stand-Specific Litter Moisture Content Calibrations for the Canadian Fine Fuel Moisture Code."

speed grids, modeled canopy fuel attribute surfaces (CBH and CBD), and surface fuel consumption outputs from FBP are fed into a raster version of the CFIS modeling system¹⁰⁹ to predict the probability of crowning over the landscape. Finally, the probability of sustained flaming ignitions is predicted over the AOI based on fire weather variables, weather data, and fuel type. These outputs are saved and a new iteration is started until the entire fire weather list has been assessed.

Ignition Likelihood, Crown Fire Probability, Flaming Ignition Probability, and cBP Index

Relative ignition probability of a wildfire occurring in each area is based on the ignition history of a given landscape and leverages machine learning to predict ignitions based on biophysical variables and anthropomorphic activities. An ignition map is built for each cause (both human and lightning) after data cleaning. To determine ignition data to include in the maps, the fire behavior analysts assess ignition distributions by season to determine if seasonal stratification is necessary. Major input variables for the human model are based on important activities which would impact ignition likelihood (e.g. roads), while the lightning models are built off physical variables and weather indices. Models are trained on a total of 400 trees in a random forest classification model and tuned to find the best fit model as measured through accuracy and pseudo R^2 . Final models are then use to predict ignition likelihood and fit on the surface of the AOI. Final ignition likelihood maps are produced as a weighted mean of all input ignition maps based on the proportion of ignitions happening in each season and by each ignition source, which could be anywhere from two to six ignition maps.

FireLandTT outputs are then produced as a relative value for any given cell on the landscape. Since some areas and forest types are more prone to fire ignitions and spread, relative probability gives a better assessment of the potential risk for a given landscape as opposed to an absolute value. Based on historical ignitions points this approach generates ignition likelihood maps which, along with sustained flaming combustion, are then linked to our semi-physical model CFIS to produce crown fire probability surfaces. CFIS's probability of crown fire occurrence metric is produced using wind speed, canopy data (CBH and CBD), surface fuel consumption results from the fire behaviour prediction system and environmental variables like DMC, FFMC, and fine fuel moisture content¹¹⁰. We run this model at the landscape scale using input VRI polygons as the processing level and generate the probability of crown fire occurring in that stand. Like rate of spread and head fire intensity, this method runs CFIS at every individual weather day. After mean surfaces of crown fire probability, ignition likelihood, and probability of sustained flaming combustion are developed, the model links all three to produce the relative probability of crown fire activity also known as our crown Burning Probability Index (cBP). This calculation follows this equation:

$$IGN \times pCrown \times pFlame = cBP$$

¹⁰⁹ Alexander, Cruz, and Lopes, "CFIS."

¹¹⁰Alexander et al, 2006.

The underlying assumption is that spatial ignition likelihood, the probability of sustained flaming combustion and the probability of crowning surfaces act as a proxy for effective burn probability mapping. Since this approach is run everyday in our fire weather list it captures the variation in likelihood of both surface fire activity and crown fire activity for any given landscape. This method both incorporates ignition likelihood and the probability any fire type occurring based on surface fire behaviour, wind, forest structure, and environmental indices, giving a cell-by-cell assessment of burning probability. This approach contextualizes any given location in an area of interest to the broader landscape and helps better inform decision: land managers can prioritize threatened areas with higher relative burn potential rather than highest absolute burn potential.

The FLTT outputs are raster cell grid maps, and each cell in the grid can be overlayed with HFI, cBP, and ROS to determine multiple aspects of fire threat within a single grid cell area. Each grid cell identifies:

1. The mean/median weighted ROS in metres per minutes
2. The mean/median weighted HFI in kilowatts per metre (kW/m)
3. The crown Burning Probability index per cell (%)

Step 2: Wildfire Threat Mapping

Overall wildfire threat can be quantified by combining FLTT output raster cell grid maps together for each grid cell by giving a range of values a score. The scores for each component are obtained by binning a range of values as shown below in Table 57.

Note: The range applied for head fire intensity is based on the PSTA scoring system¹¹¹, and rate of spread intervals were derived from the National categorization from Natural Resources Canada¹¹². Relative probability scoring is tailored to each area of interest using R-generated data analyses, which identifies outliers to remove possibly erroneous maximum values. The analyses then define equal interval breaks based on every tenth percentile using the newly calculated maximum probability.

Table 57. Scoring system for FLTT components

Score	Median HFI (kw/m)	Score	Relative Probability (%)	Score	Median Rate of Spread (m/min)
0 (nonfuel)	0	0 (nonfuel)	0	0 (nonfuel)	0
1	0.01 – 1,000	1	> 0 to 10 th percentile	1	> 0 – 1
2	1,000.01 – 2,000	2	> 10 th to 20 th percentile	2	> 1 – 3
3	2,000.01 – 4,000	3	> 20 th to 30 th percentile	3	> 3 – 6
4	4,000.01 – 6,000	4	> 30 th to 40 th percentile	4	> 6 – 10
5	6,000.01 – 10,000	5	> 40 th to 50 th percentile	5	> 10 – 14
6	10,000.01 – 18,000	6	> 50 th to 60 th percentile	6	> 14 – 18
7	18,000.01 – 30,000	7	> 60 th to 70 th percentile	7	> 18 – 20
8	30,000.01 – 60,000	8	> 70 th to 80 th percentile	8	> 20 – 22
9	60,000.01 – 100,000	9	> 80 th to 90 th percentile	9	> 22 – 25
10	> 100,000	10	> 90 th percentile and all outliers	10	> 25

¹¹¹See: <https://catalogue.data.gov.bc.ca/dataset/bc-wildfire-psta-head-fire-intensity>

¹¹² See: <https://cwfis.cfs.nrcan.gc.ca/ha/fbnormals?type=ros&month=7>

The final output of spatially mapped wildfire threat is the result of taking the three scores of each important component of wildfire threat (BP, ROS, and HFI) and utilizing the weighted sum equation:

$$\text{Wildfire Threat} = (\text{Head Fire Intensity Score} * 0.3) + (\text{Rate of Spread Score} * 0.3) + (\text{Crown Burn Probability Score} * 0.4)$$

The assigned weights for each score represent the importance of that component influencing the overall wildfire threat. All scores range between 0 and 10, with 0 representing non-fuel areas (i.e., no chance of a fire occurring), 1 representing the lowest threat level, and 10 representing the highest threat level. Final wildfire threat is reclassified into four possible rankings using the PSTA ranking system¹¹³:

Table 58. Scores and threat rating.

Scores given equal interval	Overall, Threat Rating
> 8 – 10	4 (Extreme)
> 6 – 8	3 (High)
> 3 – 6	2 (Moderate)
> 0 – 3	1 (Low)
0	0 (No Threat)

¹¹³ ——. “Determining Wildfire Threat and Risk at a Local Level.” BC Fuel Type Map Document, n.d.
https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/2020_determining_wildfire_threat_and_risk_at_a_local_level.pdf.

Step 3: Values at Risk Mapping

Values at risk include all built values such as homes, structures, and critical infrastructure. Values at risk locations are obtained using existing spatial sources and consulting with the local community, conducted as part of the CWRP development process. After obtaining all value spatial information, a proximity analysis is conducted to determine how close each grid cell from Steps 1 and 2 is to these values. Table 59 shows the scoring schemes used for proximity to values for each cell.

Table 59. Proximity to values scoring.

Score	Proximity to Values (m)
0	2000 +
1	1000 - 2000
2	501 - 1000
3	201 - 500
4	0 - 200

A final matrix was used to visually represent the risk for the landscape. As per the threat and proximity criteria, an analysis was made based on the relationship between those two factors.

Table 60. Risk Matrix

		Proximity			
Threat		Low (2000 m - 1001 m)	Moderate (1000 m - 501 m)	High (500 m - 201 m)	Extreme (200 m - 0 m)
	Low	Low	Low	Low	Moderate
	Moderate	Low	Moderate	Moderate	Moderate
	High	Low	Moderate	High	High
	Extreme	Moderate	Moderate	High	Extreme