

COMMUNITY WILDFIRE RESILIENCY PLAN 2023



District of Sooke

June 2023

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<i>I certify that the work described herein fulfills the standards expected of a member of the Association of British Columbia Forest Professionals and that I did personally supervise the work.</i>
Registered Professional Forester Signature and Seal


ACKNOWLEDGEMENTS

The authors would like to thank the Ted Ruiters (Fire Chief) and Ashlene Aktarian (FireSmart Coordinator) of Sooke Fire & Rescue for their direct involvement with planning and review, and key contributions to the District of Sooke's Community Wildfire Resiliency Plan. This report would not be possible without the Community Resiliency Investment (CRI) Program and funding from the Union of British Columbia Municipalities (UBCM).

EXECUTIVE SUMMARY

The Community Wildfire Resiliency Plan (CWRP) process (evolving from the Community Wildfire Protection Plan - CWPP) was created in British Columbia (BC) as a response to the devastating 2003 wildfire in Kelowna. As an integral part of the Community Resiliency Investment Program, managed by the Union of BC Municipalities, CWRPs aim to develop strategic recommendations based on the seven FireSmart® principles (Education, Legislation and Planning, Development Considerations, Interagency Cooperation, Emergency Planning, and Vegetation Management) to assist communities in improving safety and reducing the risk of damage to property and critical infrastructure from wildfires.

This CWRP is an update to the District of Sooke's 2011 Community Wildfire Protection Plan. The area of interest for this plan is Sooke's municipal boundary. The CWRP provides the District of Sooke with an updated action plan to mitigate the wildfire risk to the community. The plan can be used to guide the improvement or development of emergency and evacuation plans, emergency response, communication and education programs, bylaw development, and the management of potentially hazardous vegetation within the eligible Wildland Urban Interface (WUI).

Wildfire management requires a multi-faceted approach for greatest efficacy and risk reduction outcomes. Recommendations and action items within this plan should be considered a toolbox of options to help reduce the wildfire threat to the District of Sooke. The District will have to further prioritize implementation based on resources, strengths, constraints, and availability of funding, and regularly update the prioritization and course of action as variables change through time.

A larger community population, as well as new housing and infrastructure developments are major changes that have occurred since the last CWPP was written. Population in the municipality has increased by more than 32% since 2011. Population density is currently about 267 per square kilometer, compared with 202 per square kilometer in 2011. A major expansion of Highway 14, which connects Sooke with Victoria and adjacent municipalities has recently been completed, while new subdivision development is underway. With new residents, increased development in interface areas, and more activity in parks and green spaces, implementing FireSmart initiatives is of increasing importance for the District. Recognizing this, the District has launched a public education program, managed by its FireSmart Coordinator, to build community awareness of, and engagement with, FireSmart. Maintaining and expanding this program to encourage the continued adoption of FireSmart principles and practices on private property is an important recommendation put forward by this plan. The key to reducing structure loss in a WUI fire is to reduce structures' ignitability. Risk communication, education on the range of available activities, and the prioritization of activities should help home and property owners to feel empowered to complete simple risk reduction activities on their property.

To match its growing population, Sooke Fire Rescue is growing its membership and increasing its capacity to offer 24-hour service. Sooke Fire Rescue is maintaining these initiatives. By 2027, additional career firefighter staffing, complemented by paid-on-call firefighters, should allow for adequate response to incidents within Sooke Fire Rescue's scope.

Other important next steps for the department are to continue maintaining training opportunities for members and building relationships with other first responders, including BC Wildfire Service. Several key emergency planning actions are also recommended, to build on the District of Sooke's Emergency Response and Business Continuity Manual. Of key importance is gathering additional information to support fire department access to rural residential areas, and finalizing evacuation planning.

A key component of community wildfire resiliency for Sooke is to maintain, strengthen, and expand relationships with other local government agencies and first responders – such as the Capital Regional District, BC Wildfire Service, and nearby volunteer fire departments. Only 2% of land within the Eligible WUI is the District of Sooke's jurisdiction; the remainder is a mixture of private, Crown Provincial, and municipal land managed by the Capital Regional District. Some critical infrastructure servicing the municipality (e.g., water treatment and delivery) is also located outside Sooke's boundaries. Working together with adjacent jurisdictions can help increase awareness of different agencies' priorities and concerns. Strong relationships with first responder partners can increase the efficacy of emergency response and recovery.

This plan also puts forward recommendations for fuel management treatments in the municipality. Of particular concern, and rated as a high priority for treatment, are areas where invasive plants (Scotch broom and Himalayan blackberry) have established in high-traffic municipal parks. Another key location recommended for fuel management treatment is alongside the Galloping Goose trail. This would create a fuel break alongside the existing trail, supporting access to backcountry and forested areas for first responders. FireSmart demonstration treatment areas were also identified – key locations where FireSmart landscaping principles can be demonstrated to the public.

Forty-one recommendations and action items are presented in Table 1 below, and are more thoroughly discussed in their appropriate sections within the document.

Table 1: Sooke’s CWRP Action Plan

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
<i>Education - Section 5.1</i>							
1	High	Continue to fund a FireSmart Coordinator position.	A FireSmart Coordinator position will be a requirement to receive funding from the UBCM CRI FireSmart Community Funding & Supports Program starting in the 2024 program year. Maintaining a dedicated FireSmart coordinator is an important way to ensure a high quality, comprehensive and continuous program is offered.	Sooke Fire & Rescue (FireSmart Coordinator)	Annually	FireSmart Coordinator remains part of Fire & Rescue staff	UBCM CRI FCFS funding.
2	High	Maintain current FireSmart public engagement programming.	Consistent delivery of FireSmart messaging is an important component in building resident awareness and engagement over time. The current program delivering FireSmart social media content, participation in local events (e.g., farmers markets), hosting pop-up booths, and offering Home Ignition Zone assessments to residents should be maintained.	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of social media posts made, social media engagement metrics, events hosted or participated in, and HIZ assessments completed.	UBCM CRI FCFS funding (FireSmart Coordinator salary, promotional items and resources)
3	High	Promote resident purchase and installation of reflective address signs.	The Community FireSmart Resiliency Committee noted that rural residential properties often do not have well marked addresses, and that street lighting in these locations can be poor. Reflective signs are currently available for purchase; this program should be promoted, and/or supported with additional staffing (currently run by volunteer and paid-on-call firefighters).	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of visible address signs.	UBCM CRI FCFS funding (FireSmart Coordinator salary)
4	High	Encourage and support elementary schools within School District 62 to adopt and implement the FireSmart BC Education package in current curriculums.	FireSmart education for youth can lead to wildfire awareness being a part of everyday life from a young age. Youth can also bring information home to share with their families. It is recommended to use the latest iteration of the education materials FireSmart BC makes available.	Sooke Fire & Rescue (FireSmart Coordinator)	3-5 years (evaluate success and consider ongoing project)	One FireSmart education day per school year.	UBCM CRI FCFS funding to support delivery of freely available educational materials
5	High	Coordinate with the Capital Regional District, and/or BC Parks to host	Suggested locations include Sooke Potholes Provincial Park and Regional Park, Sea to Sea Regional Park trailhead, and Matheson Lake. Providing information	Sooke Fire & Rescue (FireSmart Coordinator),	1 year (evaluate success and	Events hosted, number of engagements	UBCM CRI FCFS funding (FireSmart Coordinator salary)

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
		FireSmart pop-up booths at high-traffic trailhead and park locations.	about the importance of reducing possible human-caused ignitions, especially in high-traffic forested locations where this is a concern, may increase engagement.	Capital Regional District FireSmart Coordinator, BC Parks	consider ongoing project)		
6	Moderate	Install signs that note campfires prohibited on beach access sites.	Resident awareness about possible ignitions from beach fires should be increased.	FireSmart Coordinator, Parks Department	1 year	Signs installed.	Local government funding (20-40 hrs + signage costs)
7	Moderate	Promote information about adverse impacts of yard waste dumping.	Yard waste dumping has numerous adverse environmental impacts. This includes increased interface wildfire risk due to the accumulations of dead woody plant matter adjacent to homes. Consider targeting anti-dumping information to known problem areas and interface neighborhoods. Information should also be shared with T'Sou-ke First Nation.	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of residents engaged with.	UBCM CRI FCFS funding (FireSmart Coordinator salary)
8	Moderate	Share information through gardening clubs or community garden organizations about FireSmart landscaping.	Public outreach and education initiatives should accompany the proposal for a new bylaw regulating landscaping around residences. The FireSmart BC Plant Program is another potential initiative to increase resident awareness about FireSmart landscaping. Consider offering a FireSmart Landscaping workshop through the organization or providing FireSmart materials.	Sooke Fire & Rescue (FireSmart Coordinator)	1 year (evaluate success and consider ongoing project)	Organizations are engaged and FireSmart materials and/or workshops delivered.	UBCM CRI FCFS funding (FireSmart Coordinator salary)
9	Moderate	Make the completed CWRP publicly available on the District of Sooke website.	Members of the public should be able to review the rationale for FireSmart initiatives in the District. The CWRP may also be directly shared with local stakeholders and land managers who may be interested in collaborating on FireSmart and wildfire risk reduction activities.	Sooke Fire & Rescue (FireSmart Coordinator), Corporate Communications	1 year	CWRP available for download or viewing on the municipal website.	Local government funding (4-8 hrs)

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
10	Moderate	Host all-hazard emergency preparedness workshops for residents, including T'Sou-ke First Nation community members.	Resident engagement on other forms of emergency preparedness is currently high; providing a curriculum that delivers information on topics of interest (e.g., windstorm, earthquake and tsunami preparedness) that adds in FireSmart and wildfire preparedness content may result in higher uptake.	Sooke Fire & Rescue (FireSmart Coordinator), Emergency Program Coordinator.	1 year (evaluate success and consider ongoing project)	Workshops hosted, number of attendees	Local government funding (Emergency Program Coordinator time), UBCM CRI FCFS funding (FireSmart Coordinator salary).
<i>Legislation & Planning – Section 5.2</i>							
11	High	Sooke Fire & Rescue should deem debris piles left over from land clearing for residential development a fire hazard.	Piles of debris left on private land, after land clearing but prior to or concurrent with residential development, are an interface fire hazard. The Fire Chief is empowered by the Fire Protection Services bylaw to deem a 'condition or thing' a fire hazard at their discretion; Bylaw Officers may be involved in enforcing the removal or mitigation of the hazard.	Sooke Fire & Rescue (Fire Chief), Sooke Bylaw Officers	1 year	Debris piles removed after land clearing completed.	Local government funding (20-40 hrs)
12	Moderate	Incorporate FireSmart principles into the completion of the District's Urban Forest Strategy and Tree Management Policy.	To embed FireSmart principles and wildfire risk reduction practices into the District's urban forest.	Parks Department	>5 years	Plans completed	Local government funding
13	Moderate	Update the Fire Services Provision Bylaw, with a focus on outdoor burning regulations.	The CFRC and the Fire Department Master Plan identified the need for an updated or re-drafted version of this bylaw to reduce complexity and increase functionality and readability of the document. Clarifying the language of the bylaw may have a secondary effect of improving resident compliance. The updated bill should include a segment giving overarching authorization to the Fire Chief to prohibit any or all open burning based on concerns relating to fire danger. In updating or revising this bylaw, draft regulations for outdoor burning with consideration for residents who may burn yard waste as the most convenient and economic option for disposal, due to restricted options for yard waste disposal in the municipality.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator)	3-5 years	Updated or new Fire Services Provision Bylaw adopted.	CRI FCFS funding (up to \$10,700)

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
14	Moderate	Establish a bylaw regulating landscaping to be compliant with FireSmart vegetation principles.	Landscaping bylaws are policy tools increasingly used by municipalities throughout the Province to increase adoption of FireSmart landscaping principles in communities. Draft a bylaw with considerations for the placement and spacing of highly flammable plants near residences.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator), Planning & Development	3-5 years	New FireSmart Landscaping Bylaw adopted	CRI FCFS funding (up to \$10,700)
15	Low	Complete or schedule periodic updates of the CWRP.	The frequency of updates is dependent upon major changes which would impact wildfire risk. However, a current (i.e., no more than five years old) CWRP is a requirement for further CRI FireSmart Community Funding & Supports program funding.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator), third party consultant	>5 years	CWRP updated on timeline required for continued funding from UBCM CRI FCFS program	CRI FCFS funding (up to \$32,000)
<i>Development Considerations - Section 5.3</i>							
16	High	Complete FireSmart assessments of critical infrastructure.	Protecting fire halls, water systems and other assets essential for the functioning of government and the community is critical to wildfire response and recovery.	Sooke Fire & Rescue (FireSmart Coordinator)	1-2 years	Critical infrastructure assessments completed	UBCM CRI FCFS funding (up to \$850 per structure)
17	High	Develop a Wildfire Development Permit Area.	Development Permit Areas are policy tools that regulate building design and construction in designated areas within municipalities. The Official Community Plan does not currently include such a policy; however, the District of Sooke Climate Action Plan supports this recommendation.	Sooke Planning Department, Fire & Rescue (FireSmart Coordinator), consultant support	1-2 years	Official Community Plan amended to include Wildfire Development Permit Area	CRI FCFS funding (up to \$10,700)
18	Moderate	Complete upgrades to critical infrastructure and/or landscaping around critical infrastructure sites based on FireSmart assessments.	When critical infrastructure assessments are completed, prioritize implementation of upgrades and landscaping work.	Sooke Fire & Rescue (FireSmart Coordinator)	3-5 years	Critical infrastructure upgrade(s) completed.	UBCM CRI FCFS funding (up to \$53,500 per structure)
19	Moderate	Ensure new critical infrastructure that is built adheres to FireSmart principles for building design and construction materials.	An internal corporate policy for design and construction should include specifications for: roof design and materials; sidings, vents & openings; gutters & eaves; decks & porches; fencing; landscaping; and other key structure features as required.	Sooke Fire & Rescue (FireSmart Coordinator), Sooke Planning Department	1-2 years (corporate policy development); ongoing (building critical infrastructure)	Critical infrastructure built with wildfire resilient materials and design	UBCM CRI FCFS funding for corporate policy development.

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20	Moderate	Develop a policy to ensure that land to be transferred to the District of Sooke as municipal parks as part of the subdivision development process represent an acceptable level of risk prior to the District taking possession.	The District of Sooke should ensure that park land it will acquire are in a low-hazard condition prior to assuming liability for these areas. This recommendation can be fulfilled using a 'Parkland Acquisition Policy', which should include provisions that state the District will not accept land deemed to be a public risk.	Sooke Planning Department, Fire & Rescue (FireSmart Coordinator, Fire Chief), consultant support	3-5 years	Policy adopted	CRI FCFS funding (up to \$10,700)
<i>Interagency Cooperation – Section 5.4</i>							
21	High	Establish a schedule of meetings for the District of Sooke Community FireSmart Resiliency Committee.	The CFRC is an important platform to engage with First Nations communities, stakeholders and local government bodies to ensure that wildfire resiliency initiatives are compatible with other agencies' planning priorities. Maintaining an active CFRC will be a requirement to obtain UBCM CRI FireSmart Community Funding & Supports Program grant funding starting in 2024.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator), all CFRC participants	Ongoing	Meetings occur	CRI FCFS funding (up to \$2,140 per meeting)
22	High	Create a regular schedule of meetings and communication with other local government agencies and first responders.	Sharing and gathering information with local government bodies and first responder agencies is important to maintain readiness to respond and recover to emergency incidents. This could be completed concurrently with the previous recommendation to create a regular schedule of meetings for the CFRC.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator), CFRC participants as necessary	Ongoing	Meetings occur	CRI FCFS funding (up to \$2,140 per meeting – counts as a CFRC activity)
23	High	Attend the FireSmart Conference, and/or Wildland Urban Interface Symposium.	The Wildland Urban Interface Symposium is a training event directed at fire department personnel, while the FireSmart Conference can be attended by any municipal staff members. These events are beneficial for the education and networking opportunities they provide.	Sooke Fire & Rescue (FireSmart Coordinator), and any fire department or municipal staff participants	Annual	Conference / symposium attended	CRI FCFS funding (up to \$2000 per attendee, max. 4 staff attending)
24	Moderate	Engage with T'Sou-ke First Nation to update the existing Fire Services Agreement.	The Fire Services Agreement between T'Sou-ke First Nation and Sooke Fire & Rescue was identified as out of date as part of the Fire Department Master Plan. A clear, comprehensive agreement reflecting current response needs and capacity should be developed. The updated agreement should reflect some of the CWRP recommendations and, describe how T'Sou-ke First	Sooke Fire & Rescue (Fire Chief), T'Sou-ke First Nation	1-2 years	Updated agreement adopted	CRI FCFS funding (up to \$10,700)

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
			Nation and the District will work together, including how T'Sou-ke Nation may be included in the District's plans. Consider expanding the scope of this agreement beyond firefighting services to encompass other areas of emergency response, and interagency cooperation as appropriate.				
<i>Cross-Training – Section 5.5</i>							
25	High	Conduct annual training exercises with mutual aid partners.	No drills or exercises with mutual aid partners have occurred recently. Conducting such exercises can strengthen relationships with other fire departments in the region and identify opportunities to increase efficacy of co-operation and service provision on mutual aid calls. Training exercises may or may not be desktop based. Specifically, seek to conduct training exercises with T'Sou-ke Nation fire department.	Sooke Fire & Rescue (Fire Chief), mutual aid partner departments, T'Sou-ke Nation	Annually	Exercises occur	Tabletop exercises eligible for UBCM CRI FCFS funding (up to \$2140 per meeting).
26	High	Expand Emergency Operations Centre training for municipal staff.	Increasing training, competency and certifications (Incident Command System, Emergency Operations Centre Introduction, Emergency Operations Centre Essentials) for Emergency Operations Centre staff is critical for wildfire response and recovery. This recommendation is supported by the findings in Section 12.2 of the Fire Department Master Plan, as well as feedback from the CFRC. Training should be offered to municipal staff identified for EOC deployment and/or key District leadership roles. Collaborate with T'Sou-ke Nation to determine if completing training in tandem is appropriate. Information should also be shared with T'Sou-ke Nation so that T'Sou-ke emergency responders and administrators know how the District will operate, and how operations might be integrated with T'Sou-ke Nation's emergency planning.	Emergency Program Coordinator, District of Sooke municipal staff (various), T'Sou-ke Nation	Annually (maintain currency of certifications)	Certifications per person are maintained or increased	UBCM CRI CEPF funding (Emergency Operations Centres & Training)
27	Moderate	Organize a schedule for practice and training with BCWS, using wildland equipment.	Wildland-specific training is integral to WUI wildfire response. Annual training exercises create an opportunity to strengthen working relationships with BCWS.	Sooke Fire & Rescue (Fire Chief),	Every second year	Exercises occur	Local government funding

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			Specifically, seek to include T'Sou-ke Nation fire department members in annual exercises.	T'Sou-ke Nation, BCWS			
28	Moderate	Maintain or expand wildfire-specific training for members.	Continue to certify members in WSPP-WFF1 and WSPP-115, and maintain or expand specialized training courses (Strike Team / Task Force Leader, Engine Boss). Collaborate with T'Sou-ke Nation, to determine if completing training together is appropriate. If training providers are brought to Sooke, T'Sou-ke Nation participants may be able to boost numbers and reduce training program costs.	Sooke Fire & Rescue (Fire Chief)	Ongoing	Certifications per person are maintained or increased	UBCM CRI FCFS funding
<i>Emergency Planning – Section 5.6</i>							
29	High	Maintain or expand the number of community spaces that can be used as cooling centres during extreme heat events and fresh air spaces during poor air quality events.	Extreme heat events and poor air quality events are associated with wildfire season and carry public health risks, especially for vulnerable populations, including members of T'Sou-ke Nation.	Sooke Emergency Program Coordinator	Annually / as needed during weather events	Number of cooling and fresh air spaces in the community maintained or increased	Local government funding
30	High	Conduct Emergency Operations Centre activation drills annually.	The CFRC identified training and exercises for EOC membership as priority activities. Drills and test exercises can help identify areas where roles, responsibilities and operational guidelines can be clarified. Consider focussing one such drill on an evacuation scenario. Specifically, include T'Sou-ke Nation in annual drills.	Sooke Emergency Program Coordinator	Annually	Drills or exercises occur annually.	UBCM CRI CEPF program funding (Emergency Operation Centres & Training)
31	High	Update the Emergency Response and Business Continuity Plan, with a focus on: a) identifying key EOC positions and municipal staff positions that could fill these roles; b) adding evacuation route and procedures information; and, c) an Emergency Communications Plan component.	Clearly defined EOC roles and responsibilities are critical for delivering services in an emergency, and the Emergency Response and Business Continuity Plan should clarify these. While evacuation route data has been compiled, the District of Sooke currently does not have an evacuation plan formalized within this document, which is the primary guide to be used in any emergency. An Emergency Communications Plan was identified as a necessary addition to the Emergency Response and Business Continuity Plan by the CFRC. Given the current age of the plan (published 2013), and the extent of development and population growth in the region since	Sooke Emergency Program Coordinator	1 year	Plan is reviewed and updated.	Possible funding from UBCM CRI CEPF (Emergency Operation Centres & Training, Public Notification & Evacuation Route Planning), and/or local government funding.

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
			that time, a general review of the plan is also recommended. Evacuation planning should consider the residents of T'Sou-ke Nation, as well as the wider area – given that there are many adjacent municipalities, and few routes to leave the District.				
32	High	Engage with the Capital Regional District to obtain the most recent location of locked gates and updated key copies for all gates.	The CFRC noted that organization and access to Capital Regional District park gate keys could be improved. Ensuring the District of Sooke has access to gate keys is important because Sooke Fire & Rescue is a first responder for Capital Regional District parks that are within municipal boundaries.	Sooke Fire & Rescue (Fire Chief), Capital Regional District (Parks Department)	1 year	New copies of keys obtained; gate locations updated	Local government funding (15-20 hrs)
33	Moderate	Gather information about locations of long and/or narrow public and private roads, private driveways, and dead-end roads without turnarounds.	Rural private and public roads and rural residential properties sometimes have long, narrow gravel stretches with unknown constraints to fire department access (i.e., steep slopes, vegetation encroachment). Areas of particular concern include the north end of Phillips Road, and strata and public roads and driveways throughout East Sooke. Consider conducting a survey program to map driveways, starting in rural residential areas, especially near East Sooke Regional Park and on the east and west side of the Sooke River. A survey program could be conducted by hiring seasonal workers (e.g., summer students) to measure length, width and slope of roadway, or by requesting this information from residents.	Sooke Fire & Rescue (FireSmart Coordinator)	1-2 years	Data compiled and locations with constraints identified	UBCM CRI FCFS funding (FireSmart Coordinator salary)
34	Moderate	Create a plan to promote the use of residential rooftop sprinklers.	Rooftop sprinklers are a tool to reduce the possibility of structure ignition in the face of an imminent wildfire. They can be most effectively used when the local fire department helps residents plan to install and use them. Fire department planning for residential sprinklers can ensure that water pressure and availability is maintained in an interface fire event. It can also ensure residents are aware that the use of sprinklers should not replace FireSmart work on their properties.	Sooke Fire & Rescue (FireSmart Coordinator, Fire Chief), Sooke Engineering Department	1-2 years	Plan completed; resident engagement occurs, as applicable.	Local government funding (15-20 hrs)

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
35	Moderate	Promote resident registration to the Alertable app notification system.	Expanding this app's audience will increase the ability of the municipality to provide information directly to residents in any emergency. Specifically, the District should also include T'Sou-ke Nation community members in their promotion campaign for the app.	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of downloads of Alertable app increases	UBCM CRI FCFS (FireSmart Coordinator salary)
36	High	Develop a FireSmart demonstration project on critical infrastructure or a community asset that displays FireSmart practices and principles to the public.	A demonstration of FireSmart principles can passively increase resident awareness while protecting community assets or infrastructure. An investment in a community demonstration of FireSmart activities, which is currently lacking in Sooke, can provide a showcase for residents year after year. A demonstration project can provide a focal point for other events and engagement – such as an opening day 'launch' event, social media post content during design and construction, and an attraction for local media attention.	Sooke Fire & Rescue (FireSmart Coordinator), Sooke Engineering Department (depending on infrastructure or community asset)	1-2 years	Demonstration project complete	UBCM CRI FCFS funding (FireSmart Coordinator salary, up to \$850 for assessment, up to \$53,500 for building materials and labour for structure upgrades), local government costs (signage, other municipal staff time)
37	High	Seek funding to a build weather station in Sooke.	Accurate weather data for Sooke is not available at a local station. The nearest weather station is several kilometers from the centre of the District. An established weather station constructed in collaboration with T'Sou-ke Nation and the CRD will provide accurate weather data.	Sooke Fire & Rescue (FireSmart Coordinator), T'Sou-ke First Nation, Capital Regional District	1-2 years	Weather station funding applications are submitted	UBCM CRI FCFS program funding, local government, Indigenous Services Canada
<i>Vegetation Management – Section 5.7</i>							
38	High	Continue to fund and promote Scotch broom removal events in Sooke.	A broom removal pilot program was offered in 2022, where residents could remove broom from their own property and drop off the plant debris at the public works yard. Maintaining this popular event is recommended to mitigate the hazard of flammable Scotch broom on	Sooke Parks Department, Sooke Fire & Rescue (FireSmart Coordinator).	Ongoing	Events are hosted.	Local government funding

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
			private property. The District should collaborate with T'Sou-ke Nation to promote this event to T'Sou-ke Nation members as well, and/or offer this event in the T'Sou-ke Nation community.				
39	Moderate	Seek funding to waive tipping fees at the transfer station for yard waste and woody debris.	This activity is fundable under the 2023 CRI FireSmart Community Funding & Supports Program. Currently, tipping yard waste costs residents a fee. For a pilot version of this program, consider waiving tipping fees for a two-week spring clean-up program. Extend this program to T'Sou-ke Nation community members as well.	Sooke Fire & Rescue (FireSmart Coordinator), Sooke Environmental Services.	1-2 years	Tipping fees are waived for woody debris and yard waste drop off	UBCM CRI FCFS program funding
40	Moderate	Develop operational guidelines for the Parks Department that provide guidance for debris removal after felling of hazard trees.	When hazard trees are felled and debris is not appropriately distributed and/or abated, accumulations may become hazardous -- especially when located close to homes and trails. The Parks Department should use operational guidelines that specify: a) appropriate distribution of coarse woody debris (to maintain this beneficial habitat feature in a low-risk configuration); and, b) appropriate quantities and distribution of fine woody debris to be retained.	Sooke Parks Department, consultant support	1 year	Operational guidelines are adopted	UBCM CRI FCFS program funding
41	Moderate	Develop and implement fuel management prescriptions for treatment units identified in this plan.	Treatment units are identified by priority in Section 5.7. Three types of treatment units are identified - FireSmart Demonstration Treatments, Fuel Management Treatments for Forest Fuels, and Fuel Management Treatments for Invasive Species. Consider installing interpretive signage at fuel management treatment sites for public education.	Sooke Fire & Rescue (FireSmart Coordinator), consultant support	3-5 years	Prescriptions are developed	UBCM CRI FCFS program funding

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FREQUENTLY USED ACRONYMS

AOI	Area of interest
BC	British Columbia
BCWS	British Columbia Wildfire Service
BEC	Biogeoclimatic Ecosystem Classification
CFDRS	Canadian Forest Fire Danger Rating System
CFRC	Community FireSmart & Resiliency Committee
FCFS	FireSmart Community Funding and Supports program
CI	Critical Infrastructure
CRI	Community Resiliency Investment program
CWPP	Community Wildfire Protection Plan
CWRP	Community Wildfire Resiliency Plan
DPA	Development Permit Area
EMCR	Emergency Management and Climate Readiness
FBPS	Fire Behaviour Prediction System
FESBC	Forest Enhancement Society of British Columbia
FPA	Fire Protection Area
HIZ	Home Ignition Zone
HRVA	Hazard, Risk and Vulnerability Analysis
MOF	Ministry of Forests
MOTI	Ministry of Transportation and Infrastructure
NDT	Natural Disturbance Type
PSTA	Provincial Strategic Threat Assessment
OCP	Official Community Plan
UBCM	Union of British Columbia Municipalities
VAR	Values at risk
WRR	Wildfire Risk Reduction program
WUI	Wildland urban interface

SECTION 1: INTRODUCTION

In November 2022, B.A. Blackwell and Associates Ltd. was retained to assist the District of Sooke in developing a Community Wildfire Resiliency Plan (CWRP). A CWRP is both a localized risk assessment and an action plan to improve wildfire resiliency in a region. This CWRP revisits some areas assessed in Sooke's 2011 Community Wildfire Protection Plan (CWPP), but with a focus on updated BC Wildfire Service (BCWS) fuel type mapping, an improved wildfire threat analysis methodology, and a focus on the seven FireSmart® principles. This plan accounts for changes that have occurred in the past ten years and takes advantage of the newest community wildfire planning framework in BC.

CWRPs are the latest evolution in community wildfire planning in British Columbia; local government plans written before 2020 used the 'Community Wildfire Protection Plan' framework, which was established in response to the devastating wildfire season of 2003. Since then, many communities in BC have continued to face an ever-increasing threat of wildfire, as the 2017, 2018, and 2021 fire seasons proved to be three of the most damaging seasons on record at the time. The 2023 fire season has since surpassed the 2018 season in BC and across Canada as the worst wildfire season on record, with more than 1.4 million hectares of land burned in province, and more than 12.3 million hectares burned across the country, as of July 2023.

CWRPs are individually tailored to address the needs of different communities in response to their size, their capacity, and the unique threats that they face, and incorporate the latest understandings about evaluating local risk from wildfire, and the common factors of wildfire resilient communities.

1.1 PLAN PURPOSE AND GOALS

This CWRP identifies the level of interface wildfire risk in the District of Sooke and gives the community a current and accurate understanding of the threats to human life, infrastructure, and values at risk from wildfire. This CWRP is intended to serve as a framework to guide the implementation of specific actions and strategies to:

- 1) Increase the efficacy of fire suppression and emergency response,
- 2) Reduce potential impacts and losses to property and critical infrastructure from wildfire, and
- 3) Reduce wildfire behavior threat within the community.

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

- 1) An assessment of wildfire risk to the community,
- 2) An assessment of values at risk and potential consequences from wildfire,
- 3) Maps of fuel types and recommended areas for fuel treatments,
- 4) A review of emergency and interface wildfire response capacity, and
- 5) Options and strategies to reduce wildfire risk in seven FireSmart disciplines: education, legislation and planning, development considerations, interagency cooperation, cross-training, emergency planning, and vegetation management.

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

1.2 PLAN DEVELOPMENT SUMMARY

The planning for this CWRP was based on the wildland-urban interface (WUI) of the District of Sooke. The WUI is generally understood as the zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.¹ For the purpose of this CWRP, the WUI represents a one-kilometer buffer around areas with a certain density of structures (≥ 6 structures/km²) within the AOI. Map 1 in Section 3.1 illustrates the WUI area.

The CWRP process consists of five general phases:

- 1) Formation of the Community FireSmart Resiliency Committee (CFRC). (*Information sharing with the CFRC and information sharing with stakeholders and First Nations occurred throughout*).
- 2) Review of relevant plans and legislation regarding emergency response and wildfire (Section 2).
- 3) Community description and identification of values at risk (Section 3).
- 4) Assessment of the local wildfire risk (Section 4).
- 5) Analysis and action plan for each of the seven FireSmart disciplines (Section 5).

¹ FireSmart Canada. 'What is the wildland urban interface?' <https://www.firesmartcanada.ca/what-is-firesmart/understanding-firesmart/what-is-the-wui/>

SECTION 2: RELATIONSHIP TO OTHER PLANS AND LEGISLATION

Wildfire can affect all aspects of a community. As a result, there are many plans that relate to this CWRP. The intent of this section is to review all municipal, regional, and provincial bylaws, policies, plans, and guidelines and identify any sections that are relevant to wildfire emergency planning and response.

2.1 LOCAL AUTHORITY EMERGENCY PLAN

The District of Sooke Emergency Program is authorized by the *Emergency Program Bylaw, 2003* to respond and manage major emergency incidents in the municipality. This program is guided by higher level legislation including the provincial Emergency Program Act.² The Emergency Program Act describes the various roles and administrative duties of the province and local governments with regards to emergency organization, the implementation of higher-level emergency plans, the processes of declaring a state of emergency, and coordinating post-disaster relief programs and assistance.

2.2 LINKAGES TO OTHER CWPPS / CWRPS

District of Sooke Community Wildfire Protection Plan (2011)

In 2011, B.A. Blackwell & Associates completed a Community Wildfire Protection Plan for the District of Sooke. Recommendations were made relating to:

- Communication and education
- Structure protection
- Emergency response
- Vegetation management

Some of the observations and recommendations made in the 2011 plan remain relevant, and these are discussed in Section 5. Recommendations that were not fulfilled were reviewed, and some were adapted into recommendations made throughout this plan. However, since 2011 when the last report was written, aspects of the Sooke community context have changed. New understandings of FireSmart principles have emerged, funding structures have changed, and new standards for CWRP writing and reporting have also been developed. As a result, some recommendations that were not fulfilled since 2011 are no longer relevant for consideration. However, recommendations on the following topics remain relevant and have been revisited in this plan:

- Incorporating wildfire mitigation strategies into the Official Community Plan and bylaws.

² British Columbia Provincial Government, 2020. Emergency Program Act. Retrieved from: https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/00_96111_01

- Evacuation planning and refining emergency management planning (e.g., defining roles and responsibilities for Emergency Operations Centre staff and development of an Emergency Communication Plan.
- Partnership and collaboration with external groups for emergency planning purposes.

Capital Regional District Community Wildfire Resiliency Plans (2022)

The Capital Regional District (CRD) completed a series of CWRPs in 2022 for communities and natural areas within its jurisdiction. Wildfire planning in the regional district is linked to wildfire planning in Sooke due to close jurisdictional proximities, the need for inter-agency cooperation during emergencies, and mutual aid agreements between Sooke Fire & Rescue and the regional district fire departments. Another important linkage is that parks, green spaces, and trails that are the jurisdiction of the CRD are located within Sooke municipal boundaries. Assessment of vegetation and fuel loading within CRD parks, green spaces, and trails within Sooke municipal boundaries did not take place as part of the CRD CWRPs. Accordingly, these areas were assessed as part of this CWRP (Sections 4.3, 5.7).

T'Sou-ke Nation Community Wildfire Resiliency Plan (2023)

T'Sou-ke Nation commenced developing a CWRP a few months after the District of Sooke. Engagement and interagency co-operation efforts that took place as the two plans were developed concurrently are documented in Section 5.4. Community wildfire resiliency planning in the District of Sooke is linked with initiatives undertaken by T'Sou-ke Nation due to the close proximity of reserve land to municipal land, because the District of Sooke provides fire response services on reserve land, per an agreement signed between Sooke and T'Sou-ke Nation, and because of the need for interagency co-operation during emergencies in general. For example, an event that might prompt an evacuation of District residents will likely also impact T'Sou-ke Nation, who will need to know the protocol being employed by the District. Recommendations to enhance the effectiveness of interagency cooperation are found in Section 5.4.

2.3 DISTRICT OF SOOKE OFFICIAL COMMUNITY PLAN

An Official Community Plan is an expression of the objectives and policies of the local government and provides the District of Sooke with a long-range framework to guide, monitor, and evaluate future land use and development. Table 2 below summarizes the objectives and policies within Sooke's Official Community Plan. The Official Community Plan has not been finalized as of summer 2023; however, no changes to objectives or policies are anticipated. It also summarizes provisions in local bylaws that are directly relevant to wildfire risk reduction, emergency response, and community resilience post-disaster.

Table 2: Summary of Official Community Plan objectives and policies, related to emergency planning and wildfire risk reduction.

Part / Chapter / Section	Policy Description & Relationship to CWRP
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<p>Part 3: Growth Management Objectives</p>	<p>This section designates different areas of the municipality for different growth management objectives. Designations and objectives are written to promote focused residential growth. Policy 3.3.1 prohibits urban sprawl, which is the non-contiguous low-density expansion of urban areas.</p> <p><i>Policies relating to how neighborhood development and growth is planned in a municipality, especially at the edges of current neighborhoods and in the wildland-urban interface, may complement or contradict FireSmart development considerations. This is further discussed in Section 5.3: Development Considerations.</i></p>
<p>Part 4: Community Policies</p> <p>Section 4.2: Natural Environment</p>	<p><u>Objective 4.2.2</u>: “Proactively and responsibly manage Sooke’s ecological assets, enhancing opportunities for connections to place.”</p> <ul style="list-style-type: none"> ○ Action: “Prepare an Urban Forest Strategy that evaluates the existing tree canopy across the District and establishes a target and measures to improve Sooke’s tree canopy.” ○ Action: “Prepare a Tree Management Policy, requiring the protection of significant trees and trees in environmentally sensitive areas, and replacement trees for new developments and projects.” <p><i>Policies and plans relating to tree management and urban forest management may complement or contradict FireSmart vegetation management best practices. These best practices are further discussed in Section 5.7: Vegetation Management.</i></p> <p><u>Objective 4.2.5</u>: “Prepare for the impacts of climate change.”</p> <ul style="list-style-type: none"> ○ Action: “Develop a Climate Action Adaptation Strategy that addresses severe wildfire season, seasonal water shortages, heat waves, ocean acidification, sea level rise, and flood risk at the local level.” ○ Action: “Ensure the District has appropriate strategies to manage the hazards, risks, and vulnerabilities of the community through an integrated Emergency Management Plan.” ○ Action: “Work proactively in conjunction with the CRD to better understand the local effects of climate change and identify adaptation measures, taking into consideration an integrated approach to environment, social, economic, and human safety.” <p><i>Policies and plans relating to emergency management may complement or contradict emergency management planning best practices for a wildfire or interface fire incident. Further review of existing plans and recommendations for emergency preparedness are made in Section 5.6: Emergency Management</i></p>

<p>Part 7: Development Permit Areas</p> <p>Section 7.1.1: General Requirements</p>	<p>This section states that all proposed developments, land alterations, redevelopments and subdivisions are subject to a Development Permit unless specifically exempted. It also states that applicants for a Development Permit must produce a wildfire hazard assessment for lands larger than 4 hectares, lands abutting properties greater than 4 hectares, or for properties abutting the municipal boundary.</p> <p><i>‘Development permit areas’ are a commonly used policy tool to facilitate the adoption of FireSmart best practices for building design and construction at the wildland-urban interface. Further review of this policy occurs in Section 5.3: Development Considerations.</i></p>
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2.4 LOCAL BYLAWS

Table 3 below lists the District of Sooke’s municipal bylaws and their relation to the CWRP, and identifies any gaps relating to wildfire management, emergency planning, and evacuation planning. Recommendations relating to legislation and planning are addressed in Section 5.2, and recommendations relating to development considerations are addressed in Section 5.3.

Table 3. Summary of local bylaws related to emergency planning and wildfire risk reduction.

Part / Chapter / Section	Policy Description & Relationship to CWRP
<p>Official Community Plan Bylaw No. 800, 2022</p>	<p>A bylaw to adopt the District of Sooke’s 2022 Official Community Plan.</p> <p><i>The municipal Official Community Plan is an important planning tool where objectives and policies can be detailed, with the opportunity to strengthen community wildfire resiliency.</i></p>
<p>Fire Protection Services Bylaw No. 292, 2007</p>	<p>A bylaw to provide for fire protection services in the District of Sooke</p> <ul style="list-style-type: none"> • Sooke Fire Rescue is empowered to provide “Fire Protection, Assistance Response, Mutual Aid and Public Services.” • Gives powers to the Fire Chief to enforce the bylaw provision where removal of fire hazard is required. • Regulates open air fires in the municipality, including provisions for circumstances where permits are required or not required. Residential yard debris fires are permitted given precautions. • High risk activities as defined by the Wildfire Act must be carried out in accordance with that legislation. <p><i>The Fire Protection Services bylaw provides the legal basis for the fire services that are offered by the department, and empowers the Fire Chief to take measures to mitigate hazards on private property including open burning – as such, it is a relevant policy tool.</i></p>

<p>Silver Spray Fire Protection Bylaw No. 239, 2004</p>	<p>A bylaw to provide for a fire protection local area service for the Silver Spray fire protection area.</p> <p><i>The extent of the fire protection area where Sooke Fire Rescue responds to incidents within is relevant to consider when assessing the adequacy of fire protection resources and the local wildfire threat of the area.</i></p>
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2.5 OTHER LOCAL PLANS

Table 4 contains other local plans and policies which are directly relevant to the CWRP.

Table 4: Summary of other local plans and policies relating to the CWRP

Plan	Description and Relationship to CWRP
<p>District of Sooke Climate Action Plan (2022)</p>	<p>The Climate Action Plan is a strategic plan that identifies mitigation and adaptation concerns and issues related to climate change in the Sooke municipality. It describes strategic actions the District will undertake to respond to climate change. This plan identifies increased impacts of wildfire as a climate change risk to Sooke residents.</p> <ul style="list-style-type: none"> • Strategic actions identified in this plan include: <ul style="list-style-type: none"> ○ <i>‘Develop and implement a Wildland and Urban Interface Zone policy using FireSmart principles and best practices to mitigate wildfire risk in neighbourhoods within that zone. This policy would consider wildfire prevention strategies and treatment areas, egress concerns and evacuation routes.’</i> ○ <i>‘Develop and implement a wildfire resistant construction and landscaping bylaw. Such a bylaw would consider FireSmart construction materials, fire resistant plants and materials for landscaping within FireSmart ignition zones. Consultation with parks and environmental professionals are required to ensure native plantings and environmental values are retained.’</i> • Priority strategies identified in this plan include: <ul style="list-style-type: none"> ○ <i>‘Increased public awareness and engagement regarding FireSmart, air quality, and emergency preparedness.’</i> ○ <i>‘Development of an annual emergency program, goals, events, resources, communications, etc.’</i> ○ <i>‘In high-risk areas, create buffer area between buildings and forest by education about home ignition zones.’</i> ○ <i>‘Require building design and retrofit measures to reduce impact of forest fires, including wildland sprinkler systems.’</i> ○ <i>‘Update Interface Hazard Development Permit Area.’</i> <p>The strategic actions and priority strategies identified in this plan are discussed further in Sections 5.1, 5.2, 5.3, and 5.7.</p> <p>Achievements to date, and ongoing actions related to community wildfire resiliency are also identified in this report. These are discussed throughout in Section 5: FireSmart Principles.</p>

Plan	Description and Relationship to CWRP
<p>District of Sooke Emergency Response Plan (2013)</p>	<p>This is the local emergency management plan for the District of Sooke. The intent of the plan is to use it to manage resources under the control of the District of Sooke for the purpose of emergency response and recovery. It can be used to provide guidance to the Incident Commander at site during a disaster, as well as to the site support Emergency Operations Centre Commander. There is a companion document, ‘District of Sooke Emergency Operations Manual’ that is intended to be used concurrently in the event of a disaster.</p> <p>Relevant provisions, and topics of discussion in this plan are further discussed in Section 5.6 of this document.</p>
<p>District of Sooke Emergency Operations Centre Manual (2013)</p>	<p>This document provides guidance for the management, operation and staffing of the Emergency Operations Centre during disaster response and recovery. It is intended to be used concurrently with the Emergency Management Plan.</p> <p>Relevant provisions, and topics of discussion in this plan are further discussed in Section 5.6 of this document.</p>
<p>District of Sooke Fire Department Master Plan (2022)</p>	<p>This plan is a comprehensive review of the background and services provided by Sooke Fire Rescue, including discussion of: legislative authority, financial structure, services and programming provided, training and qualification systems for department members, fire department resources, plus analysis of response and a department ‘benchmarks’ survey.</p> <p>Relevant provisions and statistics from this plan are further discussed in Section 5.5 of this document.</p>
<p>District of Sooke Parks and Trails Master Plan (2020)</p>	<p>This plan describes the existing trails and parkland managed by the District of Sooke. It details the management principles used to maintain these areas. It also discusses the plans and priorities for acquiring more parkland and expanding the municipal trail network in areas of growth potential in the municipality. Relevant provisions of this plan are discussed further in Section 5.7</p>
<p>Capital Regional District Regional Parks and Trails Strategic Plan (2022-2032)</p>	<p>This plan lays out the principles for management, describes the current state of parks, and names the key Parks priorities and initiatives for the Capital Regional District (CRD). The CRD manages large areas of parkland that overlap the boundary of the District of Sooke. Fire is recognized as a possible threat to ecological values within parks. Management of parks and natural areas, including relevant areas managed by the CRD, is further discussed in Section 5.7 of this document.</p>
<p>Capital Regional District Regional Water Supply Master Plan (2022)</p>	<p>This plan analyzes future water demand, existing water supply, water quality and treatment systems, treated water balancing storage, and water transmission systems. Water supply for fire suppression purposes is discussed further in Section 5.6. Water infrastructure as a value at risk is discussed further in Section 3.2.3, and forested watershed areas as values at risk are discussed further in Section 3.2.6.</p>

Plan	Description and Relationship to CWRP
<p>Capital Regional District Regional Water Supply Strategic Plan (2017)</p>	<p>This plan sets out the commitments, strategic priorities, and actions for the Regional Water Supply Service of the CRD. The 2022 Master Plan was prepared to address the primary objectives and strategic priorities outlined in the 2017 Regional Water Supply Strategic Plan. Planning priorities include forested watershed management, which is discussed further in Section 3.2.6.</p>
<p>Capital Regional District Regional Growth Strategy (2018)</p>	<p>This plan establishes a vision and supporting objectives for future community development within the Capital Regional District. It defines the Regional Growth Management Area, which encompasses the District of Sooke. It also defines the Urban Containment Policy Area, which overlaps the District of Sooke. Development outside the Urban Containment Policy Area boundary is to be kept to 5% or less of the regional total. The pattern, pace, and extent of community development is discussed further in Section 5.3.</p>

2.6 LINKAGES TO HIGHER LEVEL PLANS AND LEGISLATION

Land use objectives, ministerial orders, and non-legal planning objectives outlined in Table 5 below should be reviewed, considered, and addressed during the fuel management prescription phase.

Table 5: Higher level plans and relevant legislation

Plan/Legislation	Description and Relationship to CWRP
<p>BC Provincial Open Burning Smoke Control Regulation (2019)</p>	<p>The Open Burning Smoke Control Regulation governs open burning for land clearing, forestry operations and silviculture, wildlife habitat enhancement, and community wildfire risk reduction.</p> <ul style="list-style-type: none"> <i>The District of Sooke and surrounding areas are located in a High Smoke Sensitivity Zone – resulting in the strictest rules and regulations for open burning.</i> <i>OBSCR includes provisions for eased setbacks and requirements for open burning that is strictly related to an approved plan for community wildfire risk reduction (Division 2), or when utilizing an air-curtain incinerator (Division 5)</i> <i>The District of Sooke’s open burning regulations (per Fire Protection Services Bylaw) are more stringent than OBSCR and therefore supersede the legislation within the municipality; OBSCR is relevant to this plan when considering debris management activities that may take place in cooperation with other jurisdictions outside municipal boundaries.</i>
<p>Vancouver Island Land Use Plan (2000)</p>	<p>The Vancouver Island Land Use Plan is the higher-level planning document for all of Vancouver Island. The plan provides strategic direction for the following categories: 1) Protected Areas Network; 2) Forest Land Base; 3) Regional Biodiversity Direction; 4) Food Production Activities; 5) Settlement Lands; 6) Energy and Mining Opportunities; 7) Integrated Coastal Management; and 8) Community Stability. The plan also identifies Land Use Zones, which are used to delineate areas which require specific management. The District of Sooke’s wildland-urban interface overlaps with the ‘General Management Zone,’ where no special values are identified for management</p>

Plan/Legislation	Description and Relationship to CWRP
	<p>and ‘settlement lands,’ which correspond to areas where established communities and urban development has occurred. No Old Growth Management Areas, (legal or non-legal), established under the Vancouver Island Land Use Plan or otherwise overlap the District of Sooke.</p> <ul style="list-style-type: none"> • Objectives identified for particular land use designations may create constraints to, or encourage the development of, forest fuel management treatments. However, no such relevant land use designations overlap the District of Sooke. • Constraints to prescription and implementation forest fuel management treatments occur where Old Growth Management Areas are designated.

SECTION 3: COMMUNITY DESCRIPTION

This section defines the planning area and provides general demographic information about the District of Sooke, plus additional context regarding the surrounding area. An understanding of population trends, land use patterns, and values at risk can help best direct FireSmart outreach and risk mitigation activities.

3.1 AREA OF INTEREST AND WILDLAND-URBAN INTERFACE

The Wildland-Urban Interface (WUI) is defined by FireSmart Canada as the zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

For the purpose of the FireSmart Community Funding and Supports program, the ‘Eligible WUI’ refers to the area 1 km from a structure density class greater than 6 per km². The ‘Eligible WUI’ is defined by BC Wildfire Service, and is a standard parameter used to define the scope of all CWRPs funded through the FireSmart Community Funding & Supports Program. This CWRP therefore focusses on conditions and issues that can be addressed within the ‘Eligible WUI’, which totals an area of 6,686 hectares. Within and surrounding the municipal boundaries of Sooke where urban development borders and mixes with forests and open green space is the *wildland-urban interface*.³ Map 1 shows the area of interest (municipal boundary), WUI, and land ownership types within the District of Sooke.

Most land within the bounds of the Eligible WUI and within the municipal boundary is privately owned (about 60%), and is parceled either into individual lots in established neighbourhoods or held by developers for future subdivision. Public land is a secondary ownership component, comprised of Crown Provincial and municipal ownership types. Of the areas identified as municipal ownership within the WUI, the largest parcels of continuous forested land are primarily under the jurisdiction of the CRD. T’Sou-ke Nation has two reserves, totaling 75.6 ha in area, and are isolated parcels of land surrounded on all sides by District of Sooke municipal land. One parcel is located near the mouth of the Sooke River and one is on

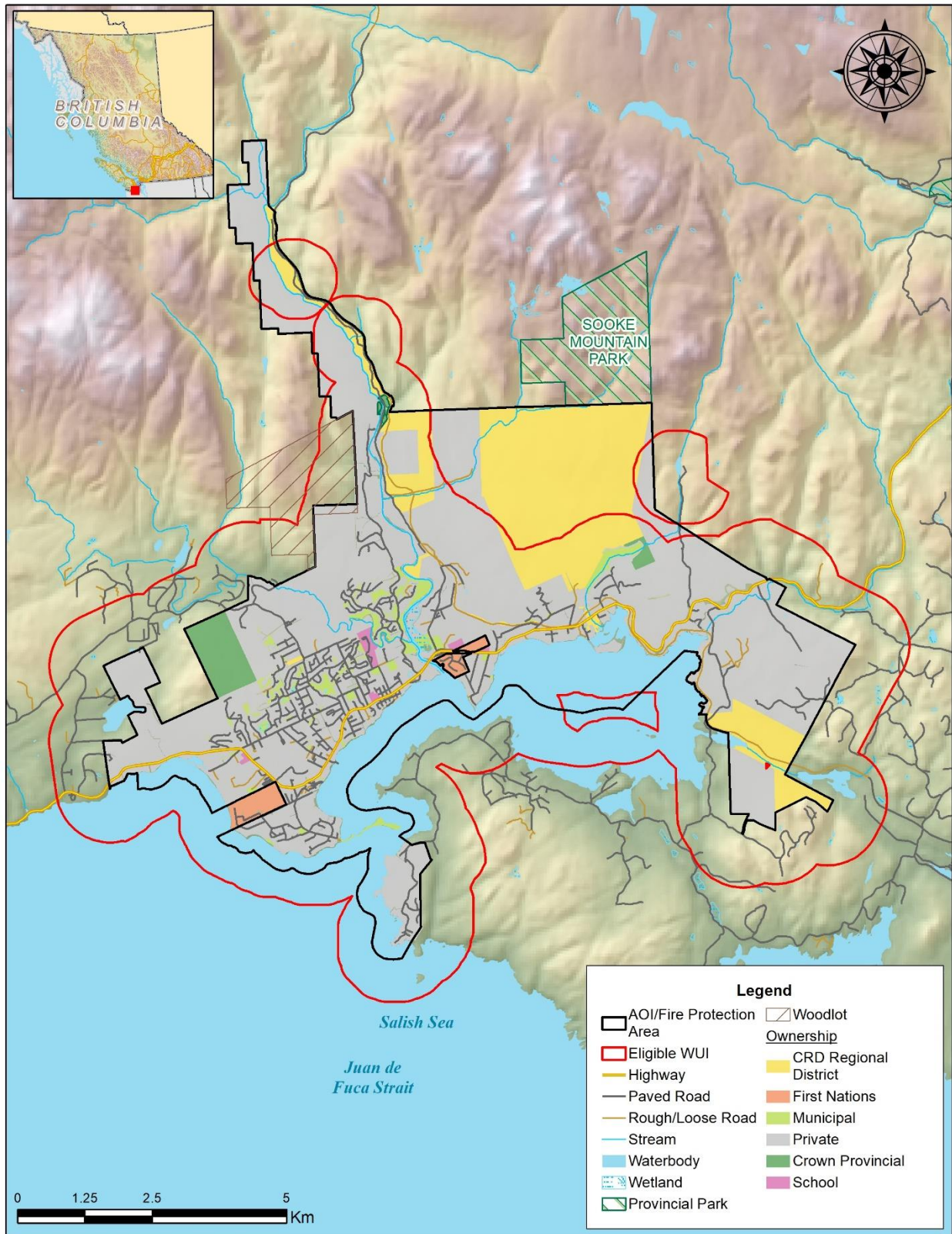
³ British Columbia Wildfire Service. (2021). *Wildfire Glossary*. Retrieved from: <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/glossary>

the shoreline north of Whiffin Spit, where most community members live.⁴ Existing and proposed neighborhood and community developments are more thoroughly discussed in Section 5.3. Jurisdictions and ownership within the WUI are shown on Map 1 and listed in Table 6.

Table 6: Land Ownership within the Sooke wildland-urban interface

Land Ownership	Area (ha)	Percent of WUI (%)
District of Sooke	134	2%
Capital Regional District	1257	19%
Private	3914	59%
Crown Provincial	142	2%
School District	26	<1%
First Nations	76	1%
Waterbody	1142	17%

⁴ <https://www.tsoukenation.com/welcome-to-tsouke-nation/>



Map 1: District of Sooke CWRP Area of Interest and Eligible WUI.

3.2 COMMUNITY INFORMATION

The District of Sooke (Sooke) is situated at the edge of the Juan de Fuca Strait, with the centre of the community located at the mouth of the Sooke River. Sooke is located on the traditional, unceded territories of the T'Sou-ke and Sc'ianew First Nations.

Since the publication of the last Community Wildfire Protection Plan in 2011, Sooke's municipal boundary have remained the same, but the community population and the extent of development has changed substantially. The community has grown by more than 32% since 2011, to a population of 15,086 as of the 2021 census.⁵ Population density is currently about 267 per square kilometer, compared with 202 per square kilometer in 2011.⁶ The 2022 Official Community Plan projects continued growth in the municipality, with an estimated population of 34,561 by 2050. Census statistics also show a faster rate of growth in Sooke compared with other municipalities in the Greater Victoria region.⁷ Future development is governed by policies in the Official Community Plan. The most recent development completed to date is concentrated on the upper slopes of the municipality west of the Sooke River.

The area surrounding Sooke's municipal boundaries to the southeast and southwest is characterized by rural residential neighborhoods, where homes are widely spaced and intermixed into continuous forested areas. Several large parks and protected areas under the jurisdiction of the CRD and BC Parks are located in the northern area of the municipality. Protection and conservation of these areas is important to residents and recreational traffic in green spaces throughout the Sooke interface and backcountry is substantial, especially in the summer.

Key services provided by the municipality include fire protection, emergency operations centre coordination, emergency management program administration, waste management services, building and development permits, and bylaw enforcement. The drinking water supply area that provides water supply to Sooke is located approximately 15 km outside the municipality and is managed by the CRD for distribution to several municipalities in the greater Victoria area. The CRD also administers fire protection services in adjoining districts.

Table 7: District of Sooke Socio-Economic Statistics⁸

Metric	Value
Total Population	15,086

⁵ District of Sooke. (2022). *District of Sooke Fire Department Master Plan*. <https://sooke.ca/wp-content/uploads/2023/01/Sooke-Fire-Master-Plan-June-2022.pdf>

⁶ District of Sooke. (2023). Statistics and Surveys. <https://sooke.ca/community/community-of-sooke/statistics-surveys/#:~:text=Statistics%20%26%20Surveys&text=The%20District%20of%20Sooke%20was,District%20of%20Sooke%20was%2011%2C435>.

⁷ Samasnki-Langille, Justin. (2022, February 9). Census 2021: Sooke grows 16 percent, tops 15,000 residents. *Vancouver Island Free Daily*. <https://www.vancouverislandfreedaily.com/news/census-2021-sooke-grows-16-per-cent-tops-15000-residents/>

⁸ Statistics Canada. (2023). *Census Profile*. 2021 Census of Population. <https://www12.statcan.gc.ca/census-recensement/2021/dp->

Metric	Value
Population Density (people/km ²)	267
Average Age (years)	43
Average household size	2.4
Total occupied private dwellings	6130
Total private dwellings	6431
Private dwellings occupied by usual residents	6129

3.2.1 CRITICAL INFRASTRUCTURE

Protection of critical infrastructure and values at risk during a wildfire event is an important consideration for emergency response effectiveness, ensuring that coordinated evacuation can occur if necessary and that essential services can be maintained or restored quickly in an emergency. Emergency Management BC defines critical infrastructure as assets that are essential for the functioning of government and society. A select inventory of municipal critical infrastructure is shown on Map 2, and listed in Table 8. Cultural, environmental, and other resource values not identified as critical infrastructure are also displayed on Map 3. Civic structures such as schools and community halls, communication towers, and facilities for emergency services are primarily located in the developed areas of the community core, not at the interface. However, lift stations, reservoirs and other water distribution infrastructure are located at the perimeters of currently developed areas. These structures are all administered by the CRD as part of their regional water distribution service network.

It is recommended that the critical infrastructure in the municipality be assessed by a FireSmart Coordinator or Local FireSmart Representative. Additionally, constructing new infrastructure in accordance with FireSmart principles and upgrading the landscaping around older infrastructure to comply with FireSmart principles is important to increase the resilience of structures used to respond to emergency events. Completing FireSmart upgrades, or constructing critical infrastructure with FireSmart principles, can be useful as a public education tool. FireSmart landscaping is an important component of critical infrastructure resiliency, and may be a less time-consuming or costly task to complete compared to structural upgrades or retrofits. However, it should be noted that the FireSmart Community Funding & Supports Program currently funds projects for a narrower definition of critical infrastructure than Emergency Management BC provides. Only publicly or First Nations owned buildings or community assets critical to support effective emergency response to a wildfire event are eligible.⁹

When assessing or renovating critical infrastructure, consider prioritizing projects in the following order:

- 1) Structures intermixed in a continuous forested area

[pd/prof/details/page.cfm?Lang=E&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0&DGUIDlist=2021A00055917052&SearchText=Sooke](https://www.ubcm.ca/sites/default/files/2023-01/LGPS_CRI-FCFS_2023ApplGuide%20Jan-23%20Update.pdf)

⁹ Community Resiliency Investment. *2023 FireSmart Community Funding & Supports Program & Application Guide*. https://www.ubcm.ca/sites/default/files/2023-01/LGPS_CRI-FCFS_2023ApplGuide%20Jan-23%20Update.pdf

- 2) Structures within a Wildfire Development Permit Area
- 3) Structures within the developed community core.

Table 8. Inventory of select critical infrastructure within (and adjacent to) the District of Sooke.¹⁰

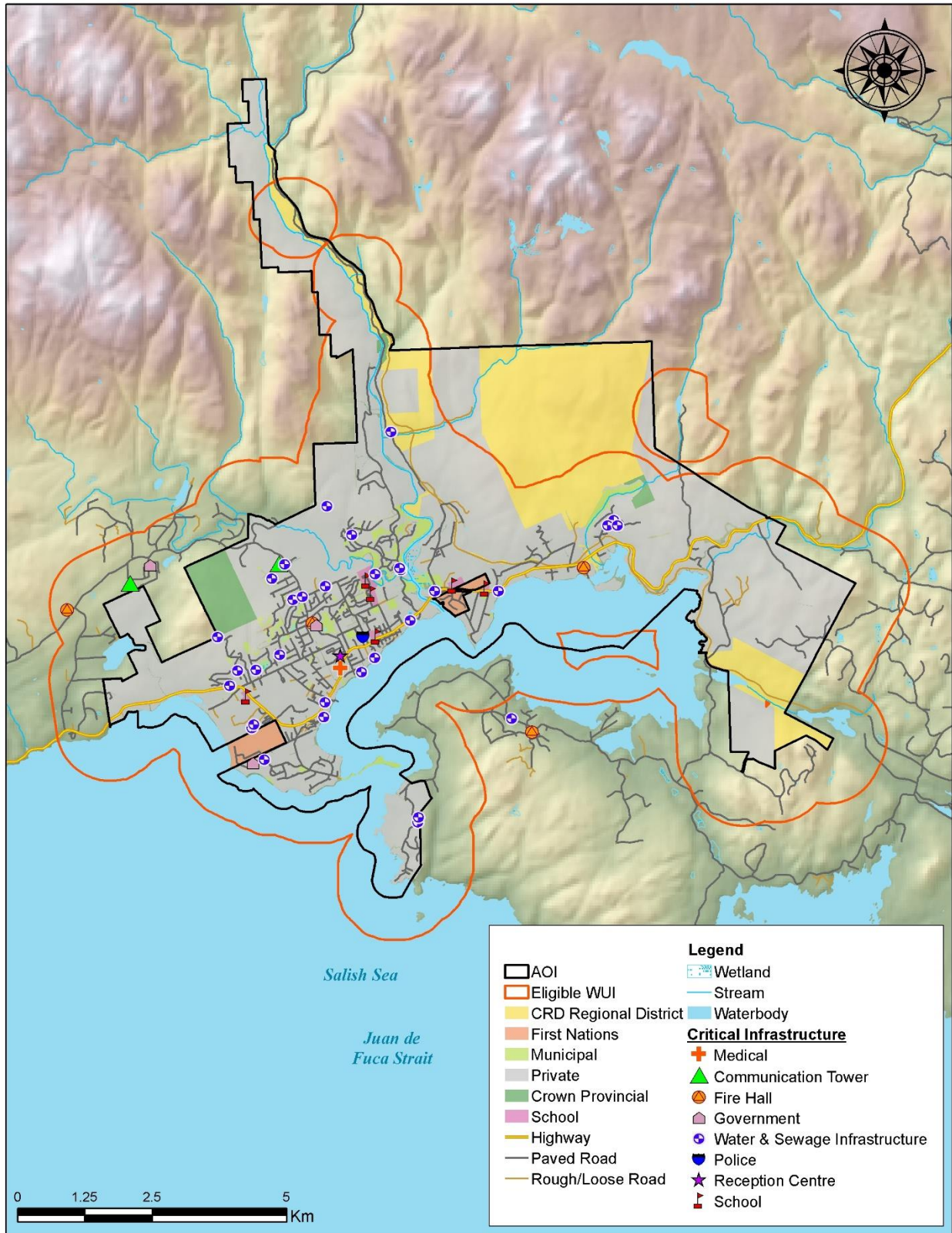
Type	Address	Name
<i>Emergency Services</i>		
Fire Hall	2225 Otter Point Rd	Fire Hall 1
Fire Hall	2011 Goodridge Rd	Fire Hall 2
Fire Hall	1397 Copper Mine Rd	East Sooke Fire Hall ¹¹
Ambulance	6742 West Coast Rd	BC Ambulance Service
Fire Hall	3727 Otter Point Rd	Otter Point Fire Hall ¹¹
Police	2076 Church Rd	RCMP
<i>Government</i>		
Government	2205 Otter Point Rd	Municipal Hall
Government	7450 Butler Rd	CRD
Government	7316 McMillan Rd	Crown Federal Building
Medical	6744 Ayre Rd	Ayre Manor
Reception Centre	2039 Shields Rd	Community Hall
School	7179 West Coast Rd	John Muir Elementary School
School	6524 Throup Rd	Ecole Poirier Elementary
School	6522 Throup Rd	Journey Middle School
School	6560 Sooke Rd	Sooke Elementary
School	6218 Sooke Rd	Edward Milne Community School
School	6066 Sooke Rd	Saseenos Elementary School
<i>Utilities & Other</i>		
Communication Tower	2614 Otter Point Rd	Communication Tower
Communication Tower	Butler Rd	Communication Tower
<i>Water & Sewer</i>		
Bulk Water	East Sooke Rd	East Sooke Bulk Water Station
Bulk Water	6270 Sooke Rd at Sooke River Rd	Sooke Bulk Water Station
Lift Station	6401 Sooke Rd	Lift Station #3
Lift Station	6658 Helgesen Rd	Lift Station #1
Lift Station	6872 West Coast Rd	Lift Station #2
Lift Station	6933 West Coast Rd	Prestige Lift Station #5

¹⁰ Road, bridge, gas station, hotels, and transfer stations are specifically identified as ineligible in the 2023 CRI FireSmart Community Funding & Supports Program & Application Guide; accordingly, these are not included on this list. Privately operated facilities or utilities are also ineligible for funding, and are not included.

¹¹ Not within the District of Sooke or operated by the District of Sooke; however, located close to the WUI and operated by mutual aid partners.

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Lift Station	6900 Burr Dr	Farrel Estates Lift Station
Lift Station	6599 Goodmere Rd	Mariner's Village Lift Station
Lift Station	2306 Phillips Rd	Sun River Lift Station #4
Lift Station	7113 West Coast Rd	WWTP Lift Station
Pumpstation	2106 Ayum Rd	CRD Water Pumpstation
Pumpstation	2195 Silver Spray Dr	CRD Water Iron Mine Pumpstation
Pumpstation	2095 Erinan Blvd	Erinan Fire Pumpstation
Pumpstation	2192 Henlyn Dr	CRD Water Henlyn Pumpstation
Pumpstation	6499 Riverstone Dr	CRD Water Sunriver Pumpstation
Pumpstation	2148 Firwood Pl	CRD Water Pumpstation
Pumpstation	2412 Otter Point Rd	CRD Water Helgesen Pumpstation
Pumpstation	2080 Ludlow Rd	CRD Water Fire Pumpstation
Pumpstation	2101 Ayum Rd	CRD Water Fire Pumpstation
Reservoir	2700 Sunriver Way	CRD Water Sunriver Reservoir
Reservoir	2410 Otter Point Rd	CRD Water Helgesen Reservoir
Reservoir	7198 Cedar Park Pl	CRD Water Henlyn Reservoir
Reservoir	1305 Silver Spray Dr	CRD Water Silver Spray Reservoir
Sewer Treatment	7113 West Coast Rd	WWTP
Water Chamber	6025 Sooke Rd	CRD Water Parkland Chamber
Water Chamber	7240 McMillan Rd	CRD Water McMillan Chamber
Water Station	Otter Point Rd at Ridgecrest Rd	CRD Potable Water Station
Water Station	2158 Maple Ave N	CRD Water Pressure Control Station
Water Treatment	2899 Sooke River Rd	CRD Water Disinfection Facility



Map 2: Critical infrastructure within the District of Sooke wildland-urban interface.

3.2.2 ELECTRICAL POWER

A large fire has the potential to disrupt electrical service distribution through direct or indirect processes. For example, heat from flames or fallen trees associated with a fire event may cause power outages. Older neighborhoods in Sooke are served by distribution networks characterized by small, street-side wooden poles that connect to homes. These networks are more vulnerable to fire in the interface where poles are not planted with concrete or gravel footings and vegetation encroaches around the base of the pole. New neighborhoods in Sooke are served primarily by underground distribution lines which eliminates this hazard and is an important feature of wildfire resiliency.

Secondary power sources are also important to reduce critical infrastructure vulnerability in the event of an emergency which cuts power for extended periods of time. The municipality should ensure back-up power sources are present and operational for critical infrastructure, including Emergency Operations Centre locations, first responder facilities, and water and wastewater systems. Vulnerabilities for secondary power sources which should also be considered include mechanical failure, insufficient power supply (should a wide-scale outage occur), and fuel shortage in the event of long outages.

BC Hydro distribution lines supply the municipality with electrical power. One transmission line right-of-way traverses the municipality. No observations made during field work or reports from CFRC staff members identified concerns about transmission line maintenance, or other risks for ignition in these areas. BC Hydro manages vegetation around facilities and rights of way for transmission lines and distribution lines according to integrated vegetation management plans which are renewed and updated periodically.^{12, 13} BC Hydro operates various risk management programs for their infrastructure, with an overall emergency management program based on best practices, including the requirements of the Provincial Emergency Program Act.

3.2.3 WATER AND SEWAGE

The functionality of critical water and sewage infrastructure can be impacted by an interface wildfire event as a result of emergency power cuts or physical damage. Infrastructure may be located in forested or interface areas which increase its vulnerability.

Sooke's water supply is incorporated into the CRD's distribution network, and is part of the Juan de Fuca Water Distribution Service Area. Watersheds, dams, reservoirs, treatment and transmission systems are operated by the regional district. Sooke Lake Reservoir is the primary source for all service areas, and is located approximately 15 kilometers northwest of the municipality. From the reservoir, a supply main delivers water to the Sooke River Road Treatment Plant. This supply line parallels the Galloping Goose rail

¹² BC Hydro. (2021). Integrated Vegetation Management Plan For Control of Vegetation at BC Hydro Facilities. <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/safety/facilities-pmp-final-confirmed-sept-16-posted.pdf>

¹³ BC Hydro. (2021). Integrated Vegetation Management Plan For BC Hydro Transmission and Distribution Power Line Corridors. <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/safety/powerline-ivmp-2022-2027-confirmed-nov.2-2022.pdf>

trail along the Sooke River, enabling the fire hydrant network to extend into the continuous forested areas north of the municipality. The Sooke Lake Reservoir, and Sooke Water Supply Area, are displayed in Figure 1.

The CRD water supply infrastructure program is guided by the comprehensive Regional Water Supply Master Plan, which was updated and renewed in 2022. The plan reviewed the current water supply infrastructure program and proposed infrastructure to improve water supply and transmission and add redundancy to critical components to address hazards and risks.¹⁴ Three additional studies were conducted concurrently, including a supply system risk and resiliency investigation, seismic assessments, and a feasibility study for a secondary intake transmission and treatment option. One rationale for planning a secondary intake is to increase the resiliency of the system in the event the watershed is impacted by wildfire.

While Sooke is located in a climate historically characterized by warm, dry summers and while climate change projections anticipate summer dry spells to lengthen in the coming decades¹⁵, the studies completed for the Water Master Plan found that demand is well managed and the Sooke watershed is expected to produce adequate, high-quality supply into the 2040s for residents, and possibly into the 2060s if lower water demand rates can be achieved. The Water Master Plan found that the CRD currently has a successful water demand management program, with some of the lowest rates of per capita demand in BC for major metropolitan areas.

CRD water supply services a fire hydrant network that extends throughout the municipality. Some areas are supplied with a higher density of hydrants than others. The southwest area of the municipality adjacent to Metchosin is one area where long driveways and widely dispersed structures mean that there may be longer distances between homes and hydrants. However, Sooke Fire & Rescue achieved Superior Tanker Shuttle Service accreditation in 2017, which shows a demonstrated ability to the standards of the Fire Underwriters' Survey of maintaining firefighting water flows to protect properties that lack hydrants.⁵ This is further discussed in Section 5.5.

¹⁴ Capital Regional District. (2022). *Regional water supply master plan*. <https://getinvolved.crd.bc.ca/2022-regional-water-supply-master-plan>

¹⁵ Capital Regional District. (2017). *Climate projections for the Capital Region*. https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/2017-07-17_climateprojectionsforthecapitalregion_final.pdf?sfvrsn=bb9f39ca_12

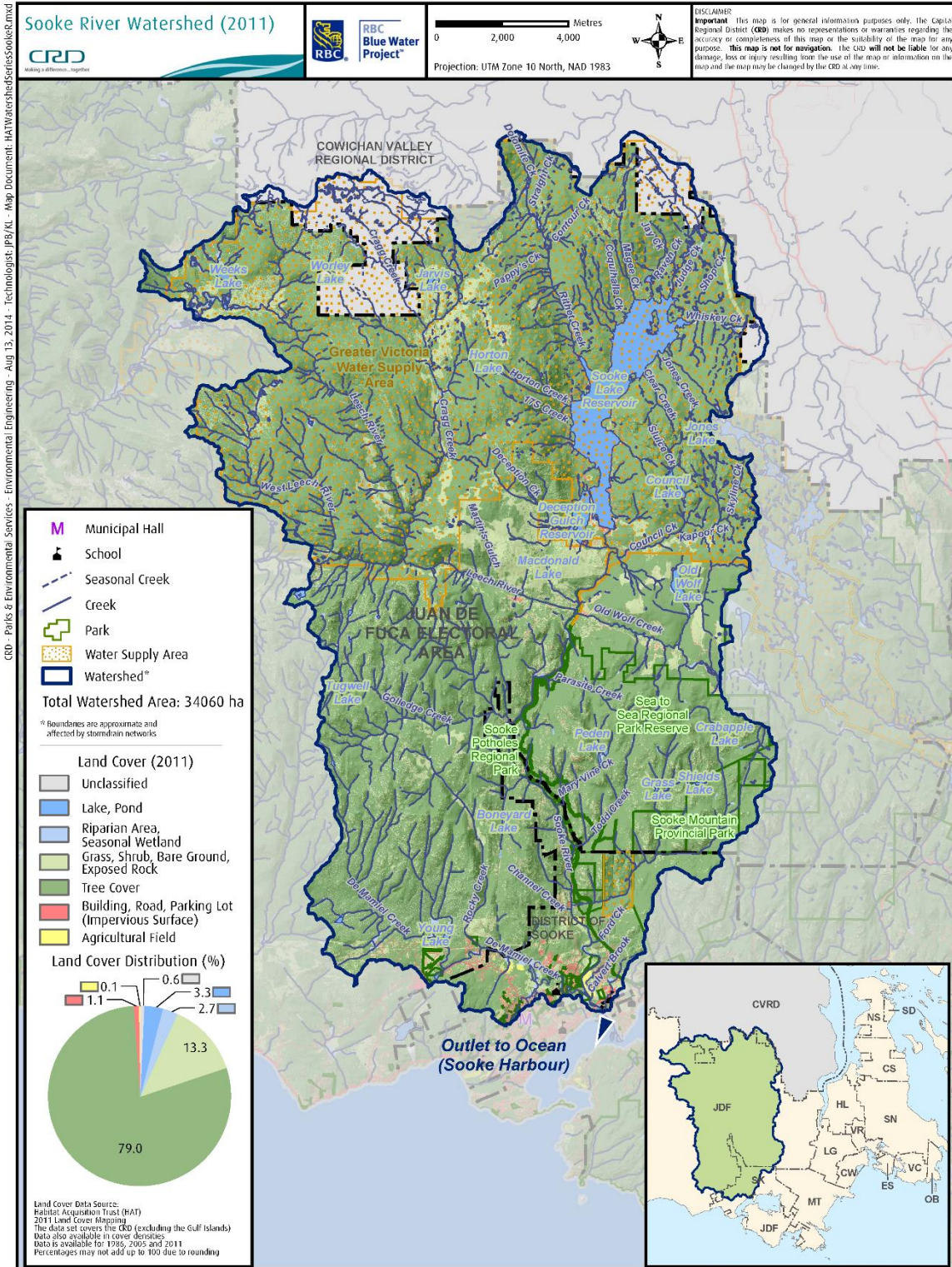


Figure 1. Capital Regional District map of Sooke River Watershed and Sooke Water Supply Area.¹⁶

3.2.4 HAZARDOUS VALUES

Hazardous values are defined as values that pose a safety hazard to emergency responders. Protecting hazardous values from fires can prevent the exacerbation of preventing interface fire disasters. Anywhere combustible materials, explosive chemicals, gas, or oil is stored can be considered a hazardous value.

Fortis BC operates underground pipelines that traverse the extent of the municipality to transmit and distribute natural gas. The transmission pipeline travels east-west through the municipality terminating at a facility east of the Sooke River. The distribution network for the town centre extends from there. In the event of a wildfire, FortisBC will work with local and provincial emergency responders and employ their own emergency response protocols, including shutting down compressor stations, if required.¹⁷

3.2.5 CULTURAL VALUES

Cultural values have the potential to be impacted by wildfire through physical damage or alteration. Wildfire suppression techniques have the potential to disturb unidentified archaeological sites. If cultural values are inventoried and identified as sensitive sites, the possibility of protection and accommodation of these features in a wildfire incident is increased.

Given the overlap with T'Sou-ke First Nation traditional territory, there is potential for archaeological sites to be found within the municipal boundaries. Known archaeological sites are recorded by the Archaeology Branch and protected under the Heritage Conservation Act, which applies on both public and private lands. Sooke and T'Sou-ke Nation signed a Memorandum of Understanding in 2007 and have committed to working together on areas of mutual interest including protection of heritage sites and cultural protection.¹⁸ Fuel management treatments proposed in this CWRP may overlap with areas of high archaeological potential, and known or unknown archaeological sites. Archaeological assessments can provide information to avoid damage to archaeological values.

The District of Sooke, and other agencies that the District may partner with should continue to consult with applicable First Nations well before development and implementation of any proposed fuel prescriptions in the area to allow for meaningful review and input. Archeological or cultural resource assessments may be required to ensure that known or unknown cultural resources are not inadvertently damaged or destroyed, and that First Nations strategies for land management in their traditional territory are complied with.

¹⁶ Capital Regional District. (2011). Sooke Watershed. <https://www.crd.bc.ca/service/drinking-water/watershed-protection/sooke-water-supply-area-primary-water-supply>

¹⁷ FortisBC. *Wildfires and evacuations*. Retrieved from: <https://www.fortisbc.com/safety-outages/preparing-for-emergencies/wildfires-and-evacuations>

¹⁸ District of Sooke. (2022). *District of Sooke Official Community Plan*. <https://sooke.ca/district-services/departments/development-services/official-community-plan/>

3.2.6 HIGH ENVIRONMENTAL VALUES

Sooke is characterized by several important environmental values that may be impacted by wildfire events, and also may be impacted by fuel management treatments designed to mitigate the threat of wildfire. These values include:

- Provincially-designated species at risk
- Critical habitat for federally listed species at risk
- Sensitive ecosystems
- Water quality and riparian ecosystems

The BC Conservation Data Centre inventories species and ecosystems that occur in BC, assesses conservation status ranks for species and ecosystems, and assigns some a red- or blue-list designation according to their risk of extinction. Occurrences of red- or blue-listed vascular and non-vascular plants, vertebrate and invertebrate animals, and an ecological community overlap the municipality. These are listed in Table 9 and shown on Map 3. While occurrences were not identified in the WUI, the little brown myotis (*Myotis lucifugus*) and northern myotis (*Myotis septentrionalis*) are BC blue-listed species whose range overlaps with the area of interest, and who have federally-protected critical habitat overlapping the municipality.

Table 9. Publicly available occurrences of red and blue-listed species recorded in the WUI.

Scientific Name	English Name	Category	BC List	Habitat Type
<i>Allium amplexans</i>	Slimleaf Onion	Vascular Plant	Blue	TERRESTRIAL: Rock Outcrop
<i>Ardea herodias fannini</i>	Great Blue Heron, Fannini Subspecies	Vertebrate Animal	Blue	TERRESTRIAL: Woodland Mixed
<i>Calystegia soldanella</i>	Beach Bindweed	Vascular Plant	Blue	TERRESTRIAL: Sand/Dune
<i>Chrysemys picta pop. 1</i>	Painted Turtle - Pacific Coast Population	Vertebrate Animal	Red	LACUSTRINE
<i>Chrysemys picta pop. 1</i>	Painted Turtle - Pacific Coast Population	Vertebrate Animal	Red	LACUSTRINE: Shallow Water; TERRESTRIAL
<i>Chrysemys picta pop. 1</i>	Painted Turtle - Pacific Coast Population	Vertebrate Animal	Red	TERRESTRIAL: Roadside
<i>Contia tenuis</i>	Sharp-tailed Snake	Vertebrate Animal	Red	TERRESTRIAL: Forest Needleleaf, Old Forest, Forest Broadleaf
<i>Corallorhiza maculata var. ozettensis</i>	Ozette Coralroot	Vascular Plant	Blue	TERRESTRIAL: Forest Needleleaf
<i>Entosthodon fascicularis</i>	Banded Cord-moss	Nonvascular Plant	Blue	TERRESTRIAL: On Soil
<i>Festuca roemerii - Koeleria macrantha</i>	Roemer's Fescue - Junegrass	Ecological Community	Red	TERRESTRIAL; GRASSLAND/HERBACEOUS
<i>Githopsis specularioides</i>	Common Bluecup	Vascular Plant	Blue	PALUSTRINE: Temporary Pool
<i>Githopsis specularioides</i>	Common Bluecup	Vascular Plant	Blue	TERRESTRIAL: Grassland/Herbaceous, Shrubland

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<i>Githopsis specularioides</i>	Common Bluecup	Vascular Plant	Blue	TERRESTRIAL: Seepage; Rock Outcrop
<i>Hemphillia glandulosa</i>	Warty Jumping-slug	Invertebrate Animal	Red	TERRESTRIAL: Forest Mixed; Coarse Woody Debris
<i>Hypogymnia heterophylla</i>	Seaside bone	Fungus	Red	TERRESTRIAL: Rock Outcrop, Epiphytic, Forest Needleleaf
<i>Hypogymnia heterophylla</i>	Seaside bone	Fungus	Red	TERRESTRIAL: Forest Needleleaf
<i>Isoetes nuttallii</i>	Nuttall's Quillwort	Vascular Plant	Yellow	TERRESTRIAL: Grassland/Herbaceous, Seepage, Rock Outcrop
<i>Isoetes nuttallii</i>	Nuttall's Quillwort	Vascular Plant	Yellow	TERRESTRIAL: Seepage
<i>Leptogium platynum</i>	Batwing vinyl	Fungus	Yellow	TERRESTRIAL: Cliff
<i>Leptogium polycarpum</i>	Peacock vinyl	Fungus	Yellow	TERRESTRIAL: Forest Mixed; RIVERINE: Riparian
<i>Microseris bigelovii</i>	Coast Microseris	Vascular Plant	Red	TERRESTRIAL: Cliff, Grassland/Herbaceous
<i>Nearctula sp. 1</i>	Threaded Vertigo	Invertebrate Animal	Blue	TERRESTRIAL: Forest Mixed
<i>Nearctula sp. 1</i>	Threaded Vertigo	Invertebrate Animal	Blue	TERRESTRIAL: Woodland Mixed
<i>Nearctula sp. 1</i>	Threaded Vertigo	Invertebrate Animal	Blue	TERRESTRIAL: Woodland Mixed; RIVERINE: Riparian
<i>Nuttallanthus texanus</i>	Texas Toadflax	Vascular Plant	Blue	TERRESTRIAL: Grassland/Herbaceous, Rocky Outcrop, Seepage
<i>Packera macounii</i>	Macoun's Groundsel	Vascular Plant	Yellow	TERRESTRIAL: Forest Mixed
<i>Polygonum paronychia</i>	Black Knotweed	Vascular Plant	Blue	Marine: Beach
<i>Prophysaon coeruleum</i>	Blue-grey Taildropper	Invertebrate Animal	Blue	TERRESTRIAL: forest mixed
<i>Prophysaon coeruleum</i>	Blue-grey Taildropper	Invertebrate Animal	Blue	TERRESTRIAL: Forest Mixed
<i>Pseudotsuga menziesii / Berberis nervosa</i>	Douglas-fir / Dull Oregon-grape	Ecological Community	Red	
<i>Rana aurora</i>	Northern Red-legged Frog	Vertebrate Animal	Blue	
<i>Sericocarpus rigidus</i>	White-top Aster	Vascular Plant	Blue	TERRESTRIAL: Woodland Broadleaf
<i>Thelypteris nevadensis</i>	Nevada Marsh Fern	Vascular Plant	Red	RIVERINE: Riparian; TERRESTRIAL: Forest Broadleaf

Critical habitat is the habitat needed for the survival or recovery of a threatened or endangered species listed on Schedule 1 of the federal Species at Risk Act, and it is formally identified in the final recovery strategy that is made for every endangered species. Critical habitat for the following species at risk have overlaps with the municipality:

- Marbled murrelet (*Brachyramphus marmoratus*) – proposed critical habitat
- Western painted turtle pacific coast population (*Chrysemys picta bellii*)
- Blue grey taildropper (*Prophysaon coeruleum*)
- Batwing vinyl lichen (*Lepogium platynum*)
- Seaside bone lichen (*Hypogymnia heterophylla*)
- Little brown myotis (*Myotis lucifugus*)
- Northern myotis (*Myotis septentrionalis*)

Site level operational plans must identify and mitigate potential impacts to ecosystems or species at risk and critical habitat for federally listed species at risk, and may require rationales or mitigation measures for harvesting in some areas.

The East Island Terrestrial Ecosystem Mapping project identified sensitive ecosystems throughout the Gulf Islands and south and east Vancouver Island, with the study area overlapping Sooke.¹⁹ Ecosystem types that overlap the municipality include wetlands, riparian areas, older second growth forests, and older forests. These ecosystems overlap the eastern area of the municipality, adjacent to Metchosin, and are predominantly on private land.

Water quality is another environmental value that may be impacted by wildfire events. In addition to their Regional Water Master Plan (2022), the CRD has identified planning priorities in the 2017 Strategic Plan to protect the water supply areas and associated water quality, which include:

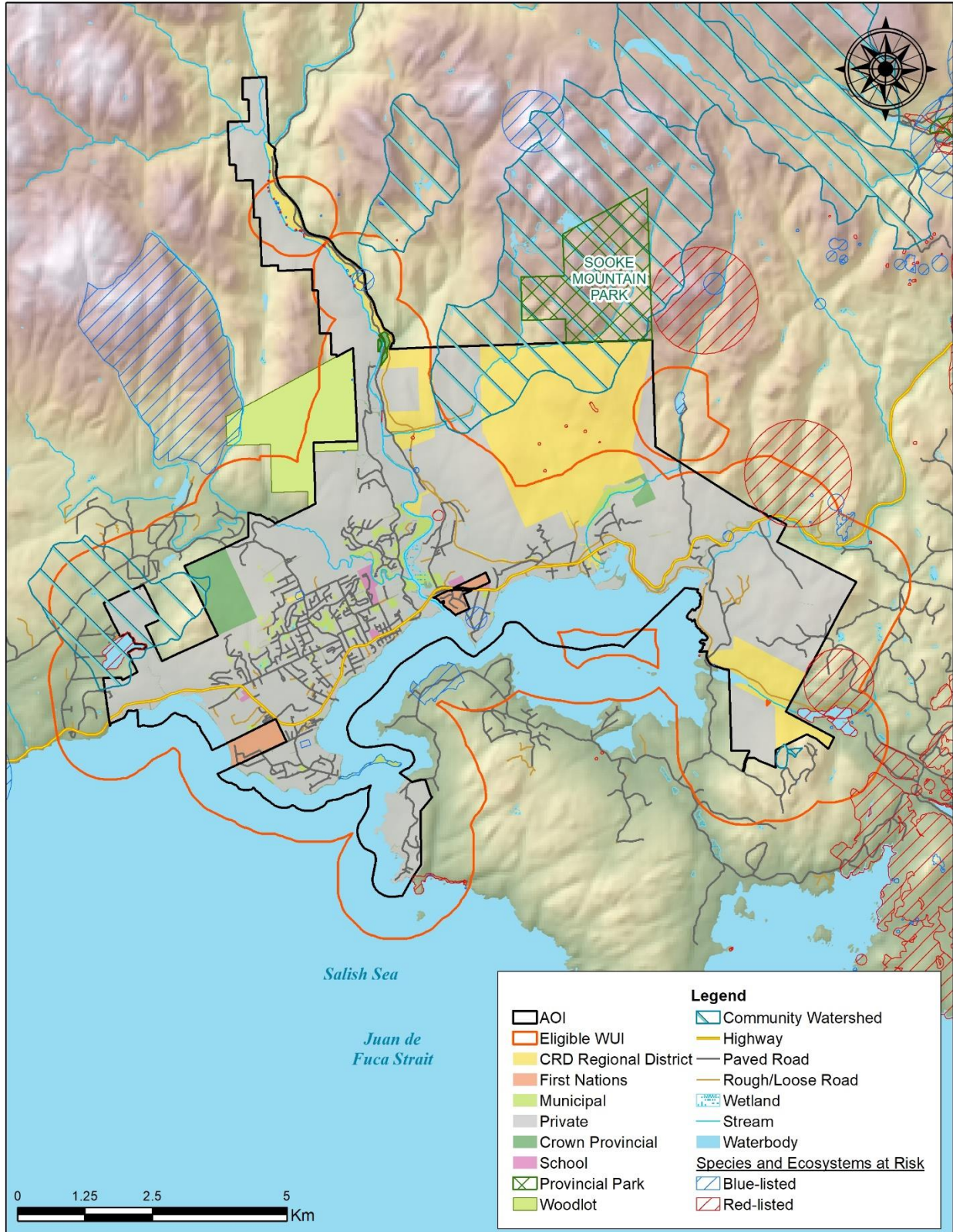
- Assessing the need for more active forest management to protect and enhance forest health and resilience.
- Reduce the risk of landscape level wildfire by designing and implementing forest fuel management treatments .

Forest health and resilience within drinking water supply areas and local watersheds are relevant to identify for the purposes of this CWRP because factors that either enhance, or erode, forest health and resilience are directly tied to the local threat of wildfire. Example identified factors include:

- Ignitions that begin in the WUI can become fires that spread to forests within drinking water supply areas and/or local stream watersheds, contributing to a loss of forest cover.
- Reduced forest cover in the watershed influences many inter-connected ecosystem processes, with effects including increased sediment loading, altered peak runoff rates, and timing of flows.²⁰
- Changes to water quality, quantity, and timing of flow as a result of wildfire events can impact other environmental values in and around the community, as well as water availability for drinking water supply.

¹⁹ Canadian Wildlife Service, BC Ministry of Environment. Sensitive ecosystem inventory

²⁰ Jordan, P. (2015). *Post-wildfire debris flows in southern British Columbia, Canada*. International Journal of Wildland Fire 25(3)322-336.



Map 3. Environmental values at risk within the District of Sooke wildland-urban interface.

3.2.7 OTHER RESOURCE VALUES

The value of natural ecosystems and the importance of conservation and protection of environmental values to Sooke residents was frequently cited in both the Official Community Plan, and the Sooke Climate Action Plan. Parks and trails that are managed by the CRD and BC Parks are located within the municipal boundaries of the District of Sooke. These parks overlap, and are managed to protect, environmental values. However, they also provide for recreation values.

Hiking, mountain biking and other outdoor recreation pursuits are popular with residents. There are several campground areas, both private and within parks, on the Sooke River. Additionally, there are informal, unsanctioned trails on private land and Crown land on the east side of the municipality.

SECTION 4: WILDFIRE RISK ASSESSMENT

This section summarizes the factors that contribute to local wildfire risk in the Sooke wildland urban interface. The wildfire risk assessment provides a decision support tool to determine the most effective wildfire risk reduction actions and opportunities to increase community resilience.

The relationship between wildfire risk and wildfire threat can be summarized as follows:

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

Where:

Wildfire risk is the potential losses incurred to human life, property, and critical infrastructure within a community in the event of a wildfire.

Consequences are the repercussions associated with fire occurrence in an area (higher consequences are associated with densely populated areas, areas of high biodiversity, etc.).

Probability is the likelihood of fire occurring in an area and that area's ability to ignite, spread, and consume organic material in the forest – its *wildfire threat*. Wildfire threat is driven by three major components of the wildfire environment:

- **Fuel** – quantity, size, shape, arrangement (horizontal and vertical), compactness, chemical properties, and fuel moisture.
- **Weather** – temperature, relative humidity, wind speed, and direction and rainfall.
- **Topography** - slope (increases or decreases rate of spread), and aspect (affects fuel dryness)

4.1 WILDFIRE ENVIRONMENT

The ecological context of wildfire and the role of fire in the local ecosystem under both current and historical conditions is an important basis for understanding the current and future wildfire threat to a community.

4.1.1 FUEL

A primary factor in a community’s wildfire threat is its proximity to the forest, which is the ‘fuel’ in a wildfire scenario. The closer values-at-risk are to the forest, the greater the probability of impact from a forest fire, either due to direct flame contact or ember spotting.

Natural areas, parks and green spaces in the WUI are characterized by different types of vegetation, with some general patterns qualitatively assessed during field work. Many ravines and riparian areas in the south end of the municipality are primarily comprised of mature, multi-layered and multi-species conifer forests, with large open canopy gaps and well-developed herb and shrub layers. On drier sites in the continuously forested area at the north end of the municipality, forests are dominated by mature, widely spaced Douglas-fir trees with high crown base heights, and an understory herb and shrub layer dominated by salal. Additionally, fuel continuity on the landscape is disrupted by features that create natural fuel breaks, including irrigated or turf fields and maintained transmission line rights-of-way.

The most hazardous forest stands and wildfire fuels identified in-situ and through spatial analysis are generally located in areas where recent disturbance or development occurred, including some of the following sites:

- Edges of lots, right of ways and medians along roads
- Areas returned to the municipality after land clearing as parks
- Recently cleared vacant lots
- Behind homes in recent developments
- Trailsides

The Canadian Forest Fire Behaviour Prediction System was used to assess forest stand and structure characteristics within the WUI as they relate to wildfire behaviour potential. This system outlines sixteen fuel types (distinctive forest structure types), each associated with different fire behaviour characteristics under defined conditions.²¹ Fuel types were confirmed or updated during fieldwork for all public land within municipal boundaries in order to quantify areas of different forest fuel types. The results of this classification process, and the verified fuel types that were determined to comprise the forests and green spaces within the wildland-urban interface, are shown below on Map 4 and are summarized below in Table 10.

Table 10. Fuel types in the wildland urban interface.

Fuel Type	Area (Ha)	Percentage of Public Land
C-3	30	<1%
C-4	2	<1%
C-5	2707	40%

²¹ Forestry Canada Fire Danger Group. (1992). *Development and Structure of the Canadian Forest Fire Behavior Prediction System: Information Report ST-X-3.*

D-1/2	1227	18%
M-1/2	479	7%
Non-fuel	17	<1%
O-1a/b	21	<1%
Water	2229	33%

A large portion of the interface encompasses mature stands of second growth forests that were mostly assigned a fuel type of C-5. Forest stands with a mix of coniferous and deciduous tree species were assigned a fuel type of M-1/2. Dense, largely even-aged coniferous forest stands were assigned a C-3 or C-4 (over-dense) fuel type. In some locations, disturbed conditions favorable to the establishment of invasive species have resulted in vegetation complexes that present a wildfire risk but do not conform readily to the Canadian Forest Fire Behaviour Prediction System fuel types. Such vegetation complexes are characterized by Himalayan blackberry and Scotch broom growing in dense shrub formations, creating horizontally and vertically integrated fuels and fine woody debris fuel loading on the ground surface. With confirmation from BC Wildfire Service staff, these sites were assigned a fuel type of O-1b, which represents vegetation where overstory forest cover is absent, but can support very high rates of surface fire spread.²² It should be noted that these vegetation complexes have established because of human activities including land clearing, fill deposition, and transportation of invasive species seed sources. Without intervention, there is the possibility that more area within the municipality may be characterized by these volatile vegetation complexes. Additionally, since the species that comprise these vegetation complexes are notoriously challenging to remove, abatement will likely become more resource-intensive over time.

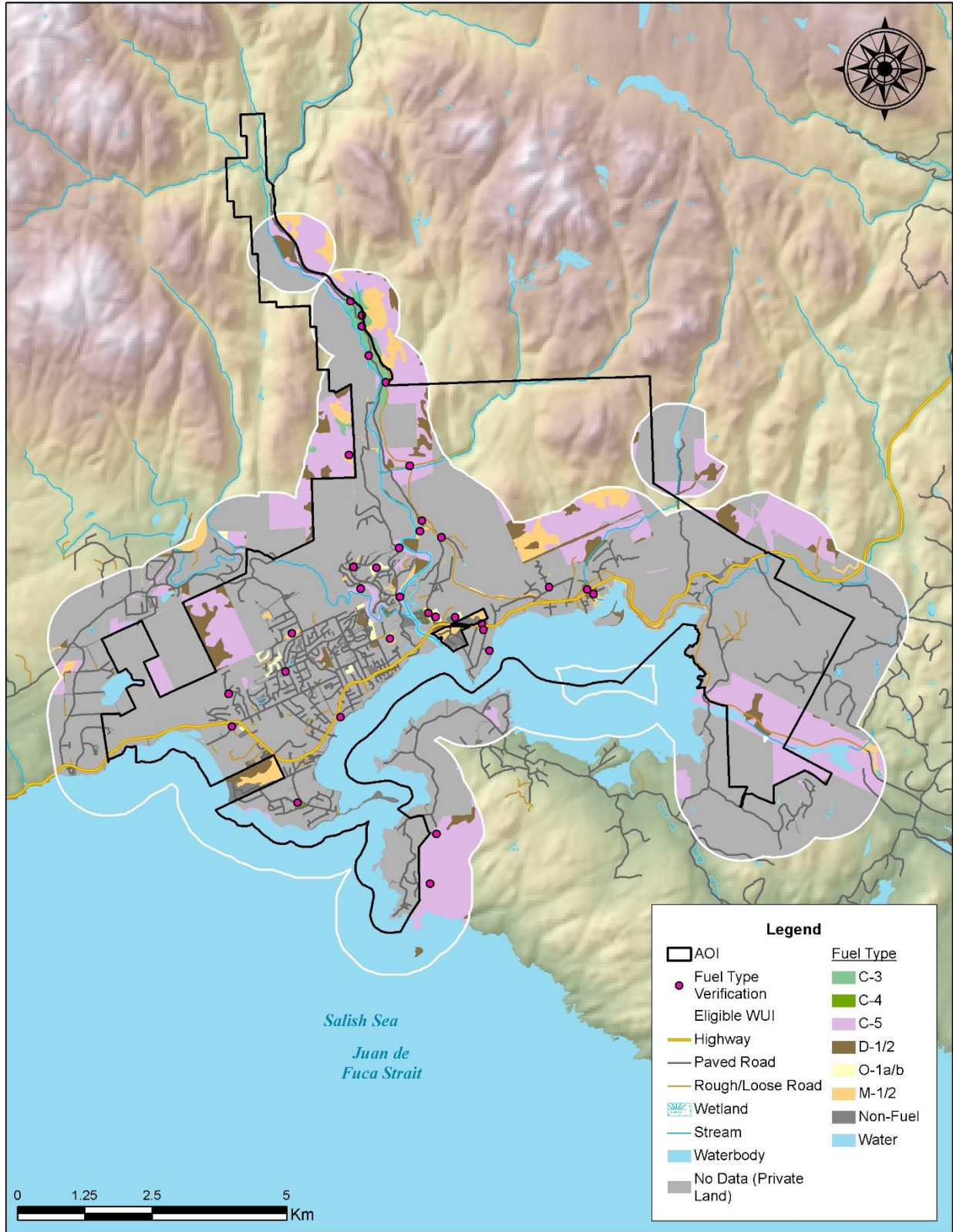


Figure 2. Photos taken during prescribed burns completed on southern Vancouver Island (fall 2022) showing Scotch broom burning. (Photos: Morgan Boghean, RFT – BCWS)

²² Personal correspondence. (March 24, 2023). Morgan Boghean, RFT; Tony Botica, MSc, RPF; Nadia Skokun, RPF; and Pete Laing, RFT.

Finally, a significant proportion of area within the Sooke municipality is privately owned, including large, forested parcels held by developers, likely to be subdivided into neighborhoods in the future. Assessing the fuel type of these and other private land holdings is outside the scope of this plan. Assessing risk on private property near homes is within the scope of FireSmart Home Ignition Zone Assessments which can be completed by Local FireSmart Representatives (see Section 5.1).

More information about the Canadian Fire Behaviour Prediction System fuel types can be found in Appendix A-1: Fuel Typing Methodology and Limitations. Recommendations for vegetation management are reviewed in Section 5.7.



Map 4: Fuel types present in the District of Sooke's wildland-urban interface.

4.1.2 WEATHER

It is important for the development of appropriate prevention programs that the average exposure to periods of high fire danger is determined. ‘High fire danger’ includes Danger Class ratings of 4 (High) and 5 (Extreme) based on the Canadian Forest Fire Danger Rating System. Danger Class days were summarized to provide an indication of the fire weather in the Sooke wildland-urban interface. Since fire danger varies from year to year, historical weather data can provide information on the number and distribution of days when the WUI is typically subject to high fire danger conditions, which supports an assessment of overall wildfire risk.

Figure 3 below displays the average frequency of days rated as different danger classes between the months of April and October. The data summarized is averaged between the Chemainus, Barnard, and Mesachie fire weather stations, which provides a 15-year fire weather data collection interval for the WUI.

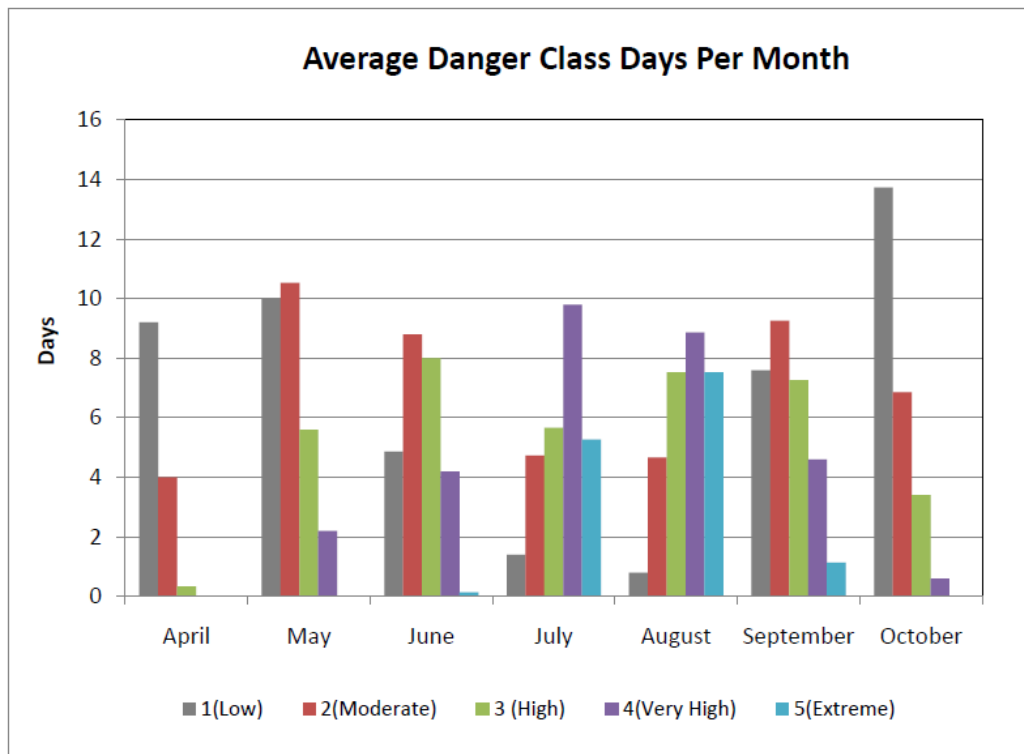


Figure 3. Average number of danger class days for Mesachie 2, Chemainus, and Barnard fire weather stations (averaged).

Climate Change

The Sooke Climate Action Plan and *Climate Projections for the Capital Region* have reported on the current and anticipated impacts of climate change, including the increased risk for wildfires in Sooke and the surrounding area. Longer dry spells, overall reduced precipitation, and more extreme heat events are

projected for summers. Some of these projected changes are already observable, with water shortages becoming more common and more frequent instances of drought and extreme heat and precipitation events impacting the region in the last three years. These impacts are associated with an increased likelihood of wildfire risk in the region, which the Sooke Climate Action Plan acknowledges.

Climate change is a serious and complex aspect to consider in wildfire management planning. Numerous studies outline the nature of climate change impacts on wildland fire across Canada, and globally.²³ Although there are uncertainties regarding the extent of these impacts on wildfire, the frequency, intensity, severity, duration, and timing of wildfire and other natural disturbances is expected to be altered significantly with the changing climate.²⁴ Despite the uncertainties, trends within the data are visible.

Climate scientists expect that the warming global climate will trend towards wildfires that are increasingly larger, more intense, and more difficult to control; it is likely that these fires will be more threatening throughout the wildland-urban interface due to increased potential fire behaviour, fire season length, and fire severity. Researchers studying the relationship between climate change and potential impacts of wildfires to Canadian forests have found that:

- Fuel moisture is sensitive to temperature change, and projected spring precipitation increases will be insufficient to counteract the impacts of the projected summer precipitation decreases and increases in temperature. Results conclude that future conditions will include drier fuels and a higher frequency of extreme fire weather days.²⁵
- The future daily fire severity rating (a seasonally cumulative value) is expected to have higher peak levels, and head fire intensity is expected to increase significantly in western Canada. The length of fire seasons is expected to increase, and the increase will be most pronounced in the northern hemisphere. Fire season severity seems to be sensitive to increasing global temperatures; larger and more intense fires are expected, and fire management will become more challenging.^{26, 27}

Hourly wind speed and direction is also recorded at BCWS weather stations. Data is publicly available in the form of Initial Spread Index data.²⁸ The Initial Spread Index (ISI) is a numeric rating of the expected

²³ Flannigan, M.D et al. 2009. *Implications of changing climate for global wildland fire*. International Journal of Wildland Fire 18, 483-507.

²⁴ Dale, V., L. Joyce, S. McNulty, R. Neilson, M. Ayres, M. Flannigan, P. Hanson, L. Irland, A. Lugo, C. Peterson, D. Simberloff, F. Swanson, B. Stocks, B. Wotton. 2001. *Climate Change and Forest Disturbances*. BioScience 2001 51 (9), 723-734.

²⁵ Flannigan, M.D., B.M. Wotton, G.A. Marshall, W.J. deGroot, J. Johnston, N. Jurko, A.S. Cantin. 2016. *Fuel moisture sensitivity to temperature and precipitation: climate change implications*. Climatic Change (2016) 134: 59-71. Retrieved from: <https://link.springer.com/content/pdf/10.1007%2Fs10584-015-1521-0.pdf>.

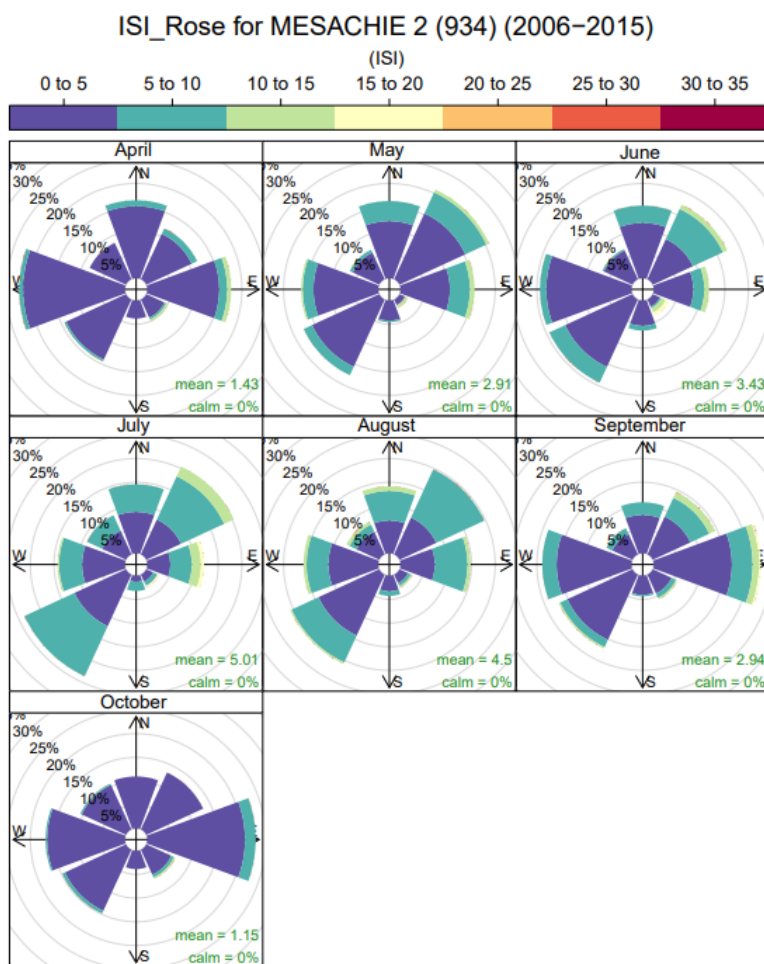
²⁶ Flannigan, M.D., A.S. Cantin, W.J. de Groot, M. Wotton, A. Newbery, L.M. Gowman. 2013. *Global wildland fire season severity in the 21st century*. Forest Ecology and Management (2013) 294: 54 - 61.

²⁷ Jandt, R. 2013. *Alaska Fire Science Consortium Research Brief*. 2013-3.

²⁸ <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/fire-fuel-management/fuel-management>

rate of fire spread that combines the effects of wind speed and fine fuel moisture. Wildfire that occurs upwind of a value poses a more significant threat to that value than one which occurs downwind.

Figure 4 below shows daily average ISI values and wind direction between April and October for the Mesachie 2 fire weather station. The length of each segment in the graphic indicates the proportion of days where winds occur from that cardinal direction; the color indicates ISI value. High ISI values (i.e., >10) indicate strong winds and/or low humidity, so are expected to peak in the summertime, as is seen. A high ISI value is a good indicator that BCWS ground crews may have fire control difficulties, as the fire is likely to have a high rate of spread.²⁹ Monthly data shows that July and August are peak months. During the peak of the fire season, westerly winds predominate, with some influence from the north. Wind speed decreases on average during the fire season and wind speeds are more stable.³⁰



Frequency of counts by wind direction (%)

Figure 4: Initial Spread Index roses indicating average daily wind speed and direction for each month during the fire season (April – October). Data taken from the Mesachie 2 fire weather station, 2006-2015.

²⁹ BC Wildfire Service. (2020). *Wildfire Season Outlook – mid-month update – July 24, 2020*. Retrieved from: <https://nr.civicweb.net/document/166218/>

³⁰ <https://weatherspark.com/>

4.1.3 TOPOGRAPHY

Slope percentage (steepness) influences a fire’s trajectory, rate of spread, and ability to gain momentum uphill. Table 11 shows slope steepness in the wildland-urban interface, by slope percent class categories and implications for fire behaviour. The majority of the wildland-urban interface in the District of Sooke (71%) is on located on slopes less than 20% in gradient and will likely not experience accelerated rates of spread. A moderate proportion of the WUI is located on gently sloping (14%) or moderate slopes (8%). These terrain gradients will result in increased rates of spread.

Table 11. Slope percentage and fire behaviour implications.

Slope	Percent of Eligible WUI	Fire Behaviour Implications
<20%	71%	Very little flame and fuel interaction caused by slope, normal rate of spread.
21-30%	14%	Steeper slopes tilt flames upward, beginning to preheat fuel and increase rate of spread.
31-45%	8%	Flames are tilted upward, preheating fuels and directing flames towards fuels upslope. High rate of spread.
46-60%	6%	Flames are tilted upward, preheating fuels and directing flames towards fuels upslope. Very high rate of spread.
>60%	1%	Flames are tilted upwards, preheating fuels and directing flames towards fuels further upslope. Extreme rate of spread.

When slope percentage is considered in context with a value’s slope position, that value’s risk to increased fire behaviour can change dramatically – i.e., a value located in the upper third of a steep slope (>40%) will be exposed to fires downslope travelling very quickly uphill towards it. Table 12 summarizes the fire behaviour implications for slope position. A value located at the bottom of a slope is equivalent to a value on flat ground. A value on the upper third of the slope would be impacted by preheating and faster rates of spread. On the larger topographic scale, development in Sooke is located from the very bottom of slopes (e.g., Sooke River valley bottom and ocean waterfront neighborhoods) to mid-slope and upper-slope locations, as well as ridgetops (e.g., at tops of ravines, bluffs, and newer subdivisions on upper slopes at the north of the municipality).

Table 12. Slope position of values-at-risk and fire behaviour implications.

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

4.2 WILDFIRE HISTORY

Based on the biogeoclimatic zones that make up Sooke, the wildland-urban interface is characterized by ‘Natural Disturbance Type 2’: ecosystems where stand-replacing disturbances occurred infrequently. Occurrences of fire every 250-450 years are likely for this Natural Disturbance Type according to the Biodiversity Guidebook and analyses in similarly ‘dry’ (relative to other wet coastal forest) ecosystems.³¹ Fire regimes in these drier ecosystems were likely mixed severity – a combination of low-, moderate-, and high-severity fires. Low severity fires may kill many small saplings, but only a few large trees; moderate severity fires can cause patchy mortality, while high-severity fires can cause mortality for many large trees.³¹ As a result, forests may historically have been characterized by a combination of even-aged and uneven-aged stands. Overall, wildfire has historically been recorded as an infrequent, but not rare or undocumented, disturbance in this landscape.

Historic fire ignition and perimeter data is depicted below on Map 5, and summarized below in Table 13 and Table 14. Based on BCWS’s historical wildfire dataset, wildfires in Sooke’s WUI occur with moderate frequency, and ignitions rarely result in wildfire events. In general, BCWS data shows that area burned per decade has decreased over the past 75 years, both within the municipal boundaries and surrounding it. For example, in Sooke and 15 km from the municipal boundaries, over 1500 ha burned in the 1950s. In comparison, approximately 200 ha burned in the 2010s over the same area.

Table 13. Fire perimeters (1950 – present) within or intersecting with Sooke’s Eligible WUI, as illustrated on Map 5.

Fire Year	Fire Size (ha)	BC Wildfire Service Fire Number
1951	28.7	V00370
1952	64.8	V00556
1951	496.7	V00559
1961	37.1	V01806
1961	43.1	V01315
2007	1.9	V60051

Table 14. Fire ignitions (1950 - present) within or intersecting with Sooke's Eligible WUI, as illustrated on Map 5.

Decade	Person Caused	Lightning Caused
1950's	55	1
1960's	26	0
1970's	46	6
1980's	19	2

³¹ Droner, B. and Wong, C. (2003). Prepared for the Coast Information Team, Natural Disturbance Dynamics in Coastal British Columbia. <https://www.for.gov.bc.ca/tasb/slrp/citbc/b-NatDist-DornerWong-May03.pdf>

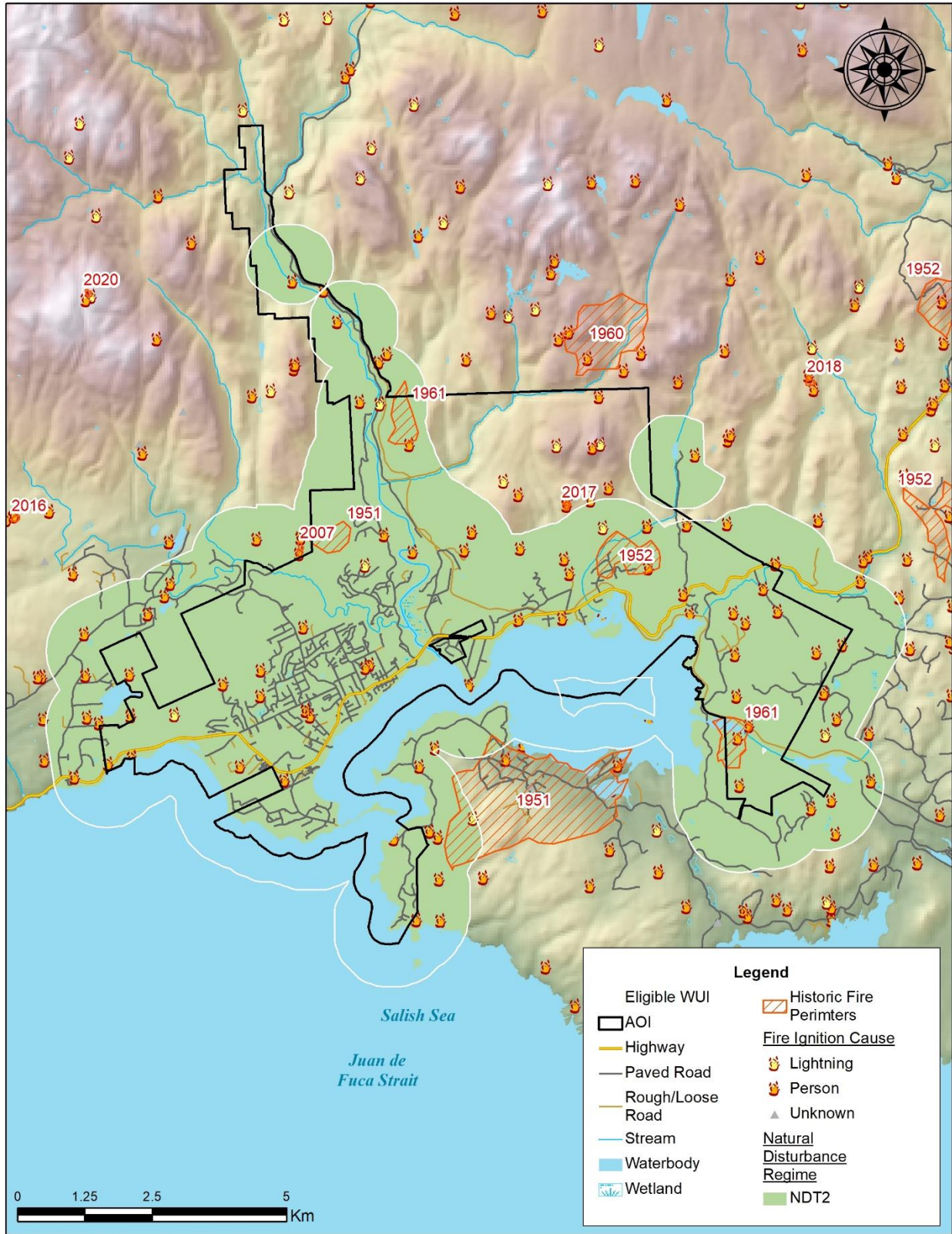
1990's	11	1
2000's	18	0
2010's	9	0

Despite this general trend, several interface wildfire events have occurred in the past five years that illustrate the potential for this disturbance to occur. Many of these incidents were relatively small in size but presented disproportionate suppression challenges due to gusting coastal winds and steep or inaccessible terrain:

- In 2017, a one-hectare fire burned on the south face of Mount Manuel Quimper, a popular hiking area in Sooke Hills.
- In 2018, a wildfire burned 84 ha in early July at Tugwell Creek, about 18 km northwest of Sooke on private managed forest land. Sooke Fire Rescue members worked with BC Wildfire Service crews to extinguish the fire.
- In 2019, Sooke Fire Rescue, with Otter Point and Metchosin fire departments, responded to an interface fire at Henlyn Drive.
- In 2021, BC Wildfire Service responded to a one hectare fire west of Sooke on private managed forest land.

Table 15: BEC zones, subzones, and variants found within the WUI

Biogeoclimatic Zone	Natural Disturbance Type	Area (ha)	Percent (%)
Coastal Western Hemlock, Very Dry Maritime (CWHxm2)	NDT2	6686	100%



Map 5: Natural disturbance regimes and historical fire ignitions and occurrences within the WUI, from 1950 to the present day.

4.3 WILDFIRE THREAT ASSESSMENT

The local wildfire threat assessment process includes several key steps as outlined in Appendix A: Local Wildfire Risk Process and summarized as follows:

- **Fuel type attribute assessment** – ground truthing and updating forest fuel types as required to develop a local fuel type map (Appendix A-1: Fuel Typing Methodology and Limitations, Map 4).
- **Consideration of the proximity of fuel to the community** – recognizing that fuel closest to the community usually represents the highest hazard (Appendix A-5: Proximity of Fuel to the Community).
- **Analysis of predominant summer fire spread patterns** – using wind speed and wind direction during the peak burning period using ISI Rose(s) from BCWS weather station(s) (Section 4.1.2 - *Weather*).
- **Consideration of topography in relation to values** – slope percentage influences the fire’s trajectory and rate of spread and slope position relates to the ability of a fire to gain momentum uphill (Section 4.1.3 - *Topography*).
- **Stratification of the WUI** – according to relative wildfire threat based on the above considerations, other local factors, and field assessment of priority wildfire risk areas.

Wildfire Threat Assessment plots were completed over several field days in February 2023 in conjunction with verification of fuel types (see Appendix A-1: Fuel Typing Methodology and Limitations) to support development of priority treatment areas and to confidently ascribe threat to polygons which may not have been visited or plotted, but which have similar fuel, topographic, and proximity to structure characteristics to those that were. Twenty-seven Wildfire Threat Assessment plots were completed and 185 other field stops (e.g., qualitative notes, fuel type verification, and/or photograph documentation) were made across the WUI in areas that had road or trail access in order to build the most accurate assessment of local fire risk possible.

Field assessment locations were prioritized based upon:

- **Proximity to values at risk:** Field assessments were clustered in the intermix and interface, as well as around critical infrastructure.
- **Local knowledge:** Areas identified as hazardous, potentially hazardous, with limited access/egress, or otherwise of particular concern as vulnerable to wildfire, as communicated by local fire officials and community forest representatives.
- **Observations:** Additional areas potentially not recognized prior to field work were visually identified as hazardous and assessed during the week.

It is important to note that the Local Wildfire Threat Assessment analyses do not apply to areas outside of the Eligible WUI (displayed in Map 1). As well, the threat assessment quantifies threat as it relates to forest fuels, and does not include the ignition potential of residential landscaping, structures or other infrastructure. Structure fires and structure-to-structure spread in a wildfire scenario are largely

attributable to hazardous conditions in the Home Ignition Zone of a structure (i.e., the area within 30 meters of the principal building and/or its attachments). However, the analyses do provide relevant information regarding wildfire threat that should be considered for FireSmart and emergency management planning and preparedness.

4.4 WILDFIRE BEHAVIOR RISK CLASS ANALYSIS

Classes of the wildfire behaviour threat class analysis are as follows:

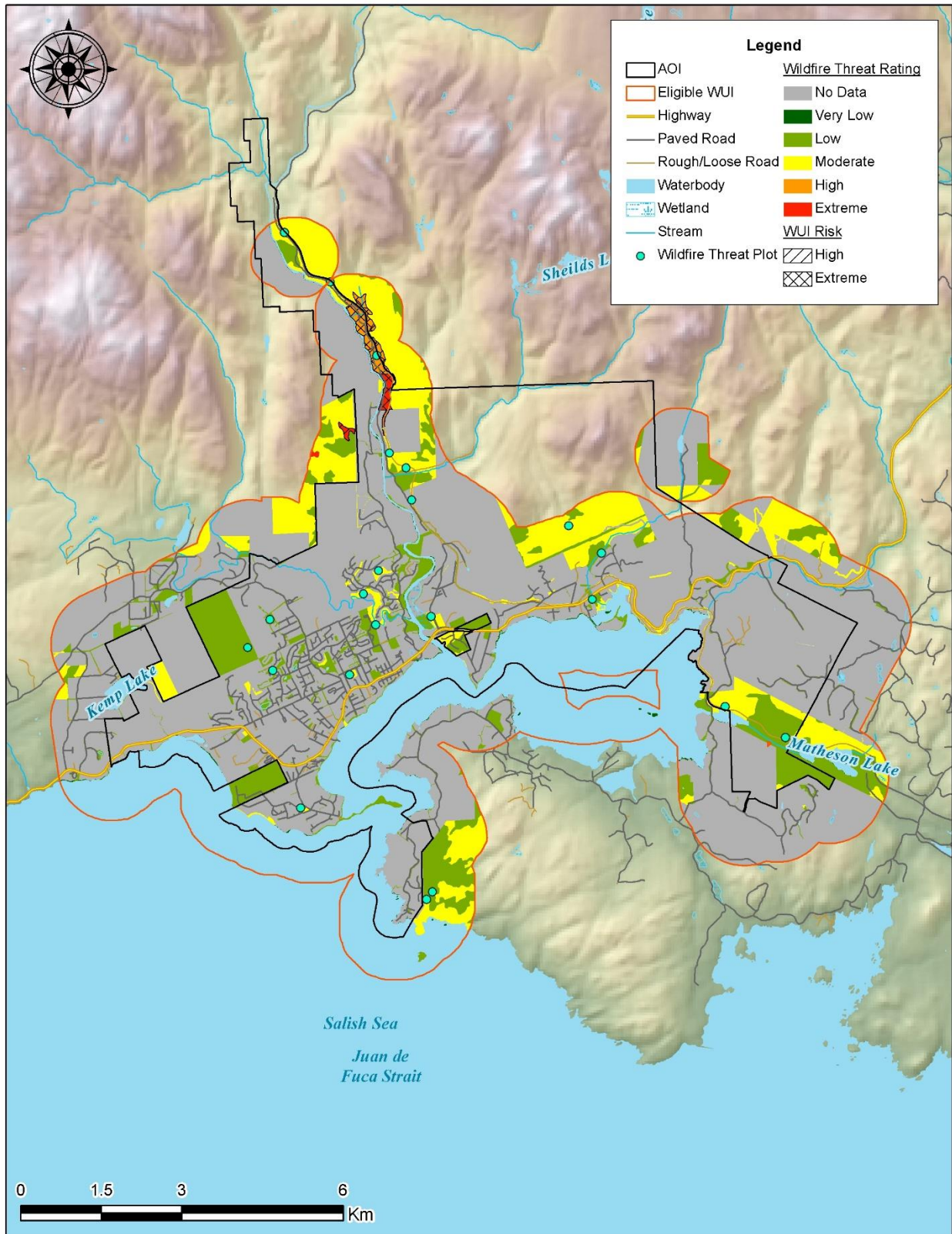
- **Very Low:** Waterbodies with no forest or grassland fuels, posing no wildfire threat;
- **Low:** Developed and undeveloped land that will not support significant wildfire spread;
- **Moderate:** Developed and undeveloped land that will support surface fires that are unthreatening to homes and structures;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

The results of the wildfire behaviour threat class analysis are shown on Map 6 and in Table 16 below. About 55% of the WUI is classified as private land and as such has not been allocated fire threat data. About 22% of the WUI is either water, or very low threat. Less than 1% of the WUI is extreme threat., and less than 1% is high threat. Most of the WUI is moderate or low threat.

Table 16: Fire behavior threat summary for the WUI

Wildfire Threat			
Threat Class	Hectares	Percentage (%) of WUI	Percentage (%) of Assessable Public Land
Extreme	19	<1%	<1%
High	42	<1%	1%
Moderate	1120	11%	24%
Low	1231	12%	26%
No Threat (Water)	2235	22%	48%
<i>Private Land – Undetermined</i>	<i>5654</i>	<i>55%</i>	<i>-</i>

a



4.4.1 WUI THREAT CLASS ANALYSIS

WUI Threat classes are quantified when the Wildfire Behaviour Threat is assessed as high or extreme, causing the potential of unacceptable wildfire threats when near communities and developments. WUI Threat Classes are described below:

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

Table 17 below (and Map 6 above) summarizes the WUI threat class ratings within the WUI. 46 hectares have an extreme threat class rating, 13 hectares have a high threat class rating, and 2 hectares have a moderate threat class rating.

Table 17: WUI threat class ratings

WUI Threat Class Analysis			
Threat Class	Hectares	% of Entire WUI	% of Assessable Public Land
Extreme	46	<1%	1%
High	13	<1%	<1%
Moderate	2	<1%	<1%
<i>N/A (Moderate, Low, Very Low Fire Behavior)</i>	<i>4586</i>	<i>45%</i>	<i>99%</i>
<i>No Data (Private Land)</i>	<i>5654</i>	<i>55%</i>	<i>-</i>

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

4.5 HAZARD, RISK, AND VULNERABILITY ASSESSMENT

The Hazard, Risk and Vulnerability Analysis that local governments undertake as part of the legislative requirements to develop a local Emergency Management Plan may provide additional locally derived information about critical infrastructure important to the community.³² Emergency Management and Climate Readiness BC supports this by providing the Critical Infrastructure Assessment Tool.³³

The purpose of a Hazard, Risk and Vulnerability Assessment is to help a community make risk-based choices to address vulnerabilities, mitigate hazards, and prepare for responding to and recovering from hazard events. The report assesses sources of potential harm, their likelihood of occurring, the severity of their possible impacts, and who or what is particularly exposed or vulnerable to these impacts.³⁴

A *Regional Hazard, Risk & Vulnerability Assessment Report* was completed for the Regional Emergency Management Partnership, which municipalities in the Capital Region, in 2020. This document does not provide a specific assessment for Sooke. Sooke's Hazard, Risk and Vulnerability Analysis is no longer current, with updates delayed due to staffing changes within the municipality. Sooke plans to hire an Emergency Program Manager by the fall of 2023, who will be able to lead the process of updating this document, as well as other aspects of the emergency management program.

SECTION 5: FIRESMART PRINCIPLES

FireSmart is the nationally accepted set of principles, practices, and programs for reducing losses from wildfire.³⁵ FireSmart concepts, including recommended FireSmart guidelines,³⁶ have been formally adopted by almost all Canadian provinces and territories, including British Columbia in 2000. FireSmart has become the de facto Canadian standard. FireSmart is founded in standards published by the National Fire Protection Association.

FireSmart includes seven disciplines, which provide a sound framework for reducing wildfire risk to communities:

- Education
- Legislation and Planning
- Development Considerations

³² UBCM. 2020. *Community Wildfire Resiliency Plan Instruction Guide*. Retrieved from: [Community Wildfire Resiliency Plan Instruction Guide \(www.ubcm.ca\)](http://www.ubcm.ca)

³³ More information on the instruction guide can be found here: <https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/local-emergency-programs/critical-infrastructure-assessment>.

³⁴ Government of BC. 2020. *HRVA Example Report*. https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/local-government/hrva/hrva_forms-step_8-anytown_bc-sample_hrva_report.pdf.

³⁵ FireSmart is the registered trademark held by the Partners in Protection Association.

³⁶ FireSmart guidelines first published in the 1999 manual "*FireSmart: Protecting Your Community from Wildfire*", with a second edition published in 2003. The most recent "*FireSmart Begins at Home Manual*" is available at <https://firesmartcanada.ca/resources/>. The "*British Columbia FireSmart Begins at Home Manual*" provides detailed guidance and is available at BC FireSmart: <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/firesmart>

- Interagency Cooperation
- Cross-Training
- Emergency Planning
- Vegetation Management

The following parts of this section provide information on each FireSmart discipline. FireSmart activities that Sooke has already implemented are discussed, as well as any relevant gaps and potential to expand and strengthen this programming. Each section contains a table of recommended actions for Sooke relating to that FireSmart discipline. Most actions are fundable through the CRI FireSmart Community Funding and Supports program. Each recommendation includes a rationale, lead agency, timeline and estimated resources to complete.

The overarching goal of FireSmart is to encourage communities and citizens to adopt practices to mitigate the negative impacts of wildfire to assets on public and private property. While responsibility for effectively mitigating hazards must be shared between many entities including residents, industry, businesses, and governments,³⁷ the ultimate root of the WUI problem is the vulnerability of structures and homes to ignition during wildfire events, in particular vulnerability to embers. As a result, risk mitigation actions on private properties are emphasized.

Community Overview

During CWRP development, FireSmart vulnerability and resilience factors for homes and neighbourhoods within the District of Sooke were noted. These observations are qualitative notes on FireSmart structural characteristics and natural as well as landscaped vegetation, in neighborhoods in the wildland-urban interface.

Table 18: FireSmart vulnerability and resilience factors within the District of Sooke.

Vulnerabilities	Resilience
<ul style="list-style-type: none"> • Neighbourhoods with homes on large lots, intermixed into forested areas. • Some homes with long, narrow driveways of unknown length, width, or grade, creating possible access restrictions for Sooke Fire & Rescue. • Large tracts of forested land within District of Sooke municipal boundaries but managed by other agencies (e.g., CRD). • Large tracts of private land where fuels cannot be assessed and hazard cannot be quantified under the CWRP framework. • Neighbourhoods with narrow public roads with restricted turnaround areas, and one-way access 	<ul style="list-style-type: none"> • Fire suppression capacity from a local fire department – compared to unincorporated communities nearby under the regional district’s Fire Protection Area. • Medium to large lots, with room to create defensible space according to FireSmart principles. • Homes in new neighborhoods have many FireSmart attributes: Class A roofing, cement board siding, little forested cover on lots. • New neighbourhoods with greater compliance in FireSmart principles are generally located closest to wildland urban interface.

³⁷ <https://www.firesmartcanada.ca>

Vulnerabilities	Resilience
<p>and egress routes out of forested areas (e.g., Phillips Road on west side of Sooke River).</p> <ul style="list-style-type: none"> Expansion of wildland urban interface as homes and neighborhoods are constructed further into wildland areas. 	<ul style="list-style-type: none"> Developed land continues outside of the wildland-urban interface, creating large areas without wildland fuels.

5.1 EDUCATION

The goal of FireSmart education is to provide information to communities and citizens on how best to adopt and conduct practices to mitigate the negative impacts of wildfire to assets on public and private property.

FireSmart education and public outreach initiatives in Sooke are supervised by the Fire Chief and managed by the FireSmart Coordinator. The FireSmart Coordinator staff position was created in 2021, fulfilling a recommendation in the Fire Department Master Plan that creates capacity to deliver a consistent public engagement program. Both the Fire Chief and the FireSmart Coordinator have received Local FireSmart Representative training.

FireSmart and wildfire resiliency messaging is new to many residents of the municipality. A community consultation project was conducted in 2021 to gather information on residents’ questions and concerns regarding FireSmart. Residents that replied noted that more information and resources, a dedicated FireSmart information session, and increased awareness of the current wildfire hazards would support them in beginning or continuing to FireSmart their homes.

Over the last two years, the Sooke’s FireSmart programming has aligned with those homeowner requests, completing the following activities, most of which are offered every year:

- FireSmart Home Ignition Zone Assessments for residents – based on voluntary requests from residents, as well as canvassing higher risk neighborhoods in the community.
- Tracking the results of Home Ignition Zone Assessments in order to support the delivery of other fire department services such as fire inspections.
- Community information sessions.
- Print, web and social media communications (newsletters, web page updates, newspaper publications).
- Community clean-up days.
- Wildfire preparedness days.
- Pop-up booths at community events, and local markets.
- Fire Danger Rating signs posted in the district, plus fire prohibitions and danger rating updates posted on the website and social media.

While Sooke has developed a robust FireSmart program, challenges remain to facilitate substantive community engagement in FireSmart. Historically, emergency preparedness planning in Sooke has focused on natural hazards typical of the West Coast, such as earthquakes and tsunamis. Because large wildfire incidents have not occurred close to the community in recent decades, and historically it has not been a primary forest disturbance, perceptions that wildfire cannot or will not impact the community in the future may prevail. However, as discussed in Section 4.1.2 and 4.2, fire is not an unknown disturbance on Vancouver Island and the probability of a wildfire event impacting Sooke is increasing in the context of a changing climate.

It is recommended that Sooke continue to evolve their FireSmart program – maintaining resource allocation to education initiatives, while testing and adjusting them based on uptake to build community engagement over time. Sharing information through established organizations, to new audiences, and adding a FireSmart dimension to initiatives already popular with community members, are suggested options for enhancing the public education programming.

A summary of recommendations related to FireSmart education is detailed in Table 19 below.

Table 19: Education recommendation and action items

#	Priority	Recommendation	Comment	Lead	Timeframe	Metric for Success	Funding Source
1	High	Continue to fund a FireSmart Coordinator position.	A FireSmart Coordinator position will be a requirement to receive funding from the UBCM CRI FireSmart Community Funding & Supports Program starting in the 2024 program year. Maintaining a dedicated FireSmart coordinator is an important way to ensure a high quality, comprehensive and continuous program is offered.	Sooke Fire & Rescue (FireSmart Coordinator)	Annually	FireSmart Coordinator remains part of Fire & Rescue staff	UBCM CRI FCFS funding.
2	High	Maintain current FireSmart public engagement programming.	Consistent delivery of FireSmart messaging is an important component in building resident awareness and engagement over time. The current program delivering FireSmart social media content, participation in local events (e.g., farmers markets), hosting pop-up booths, and offering Home Ignition Zone assessments to residents should be maintained.	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of social media posts made, social media engagement metrics, events hosted or participated in, and HIZ assessments completed.	UBCM CRI FCFS funding (FireSmart Coordinator salary, promotional items and resources)
3	High	Promote resident purchase and installation of reflective address signs.	The Community FireSmart Resiliency Committee noted that rural residential properties often do not have well marked addresses, and that street lighting in these locations can be poor. Reflective signs are currently available for purchase; this program should be promoted, and/or supported with additional staffing (currently run by volunteer and paid-on-call firefighters).	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of visible address signs.	UBCM CRI FCFS funding (FireSmart Coordinator salary)
4	High	Encourage and support elementary schools within School District 62 to adopt and implement the FireSmart BC Education package in current curriculums.	FireSmart education for youth can lead to wildfire awareness being a part of everyday life from a young age. Youth can also bring information home to share with their families. It is recommended to use the latest iteration of the education materials FireSmart BC makes available.	Sooke Fire & Rescue (FireSmart Coordinator)	3-5 years (evaluate success and consider ongoing project)	One FireSmart education day per school year.	UBCM CRI FCFS funding to support delivery of freely available educational materials
5	High	Coordinate with the Capital Regional District, and/or BC Parks to host FireSmart pop-up booths at high-traffic trailhead and park locations.	Suggested locations include Sooke Potholes Provincial Park and Regional Park, Sea to Sea Regional Park trailhead, and Matheson Lake. Providing information about the importance of reducing possible human-caused ignitions, especially in high-traffic forested	Sooke Fire & Rescue (FireSmart Coordinator), Capital Regional District	1 year (evaluate success and consider	Events hosted, number of engagements	UBCM CRI FCFS funding (FireSmart Coordinator salary)

			locations where this is a concern, may increase engagement.	FireSmart Coordinator, BC Parks	ongoing project)		
6	Moderate	Install signs that note campfires prohibited on beach access sites.	Resident awareness about possible ignitions from beach fires should be increased.	FireSmart Coordinator, Parks Department	1 year	Signs installed.	Local government funding (20-40 hrs + signage costs)
7	Moderate	Promote information about adverse impacts of yard waste dumping.	Yard waste dumping has numerous adverse environmental impacts. This includes increased interface wildfire risk due to the accumulations of dead woody plant matter adjacent to homes. Consider targeting anti-dumping information to known problem areas and interface neighborhoods. Information should also be shared with T'Sou-ke First Nation.	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of residents engaged with.	UBCM CRI FCFS funding (FireSmart Coordinator salary)
8	Moderate	Share information through gardening clubs or community garden organizations about FireSmart landscaping.	Public outreach and education initiatives should accompany the proposal for a new bylaw regulating landscaping around residences. The FireSmart BC Plant Program is another potential initiative to increase resident awareness about FireSmart landscaping. Consider offering a FireSmart Landscaping workshop through the organization or providing FireSmart materials.	Sooke Fire & Rescue (FireSmart Coordinator)	1 year (evaluate success and consider ongoing project)	Organizations are engaged and FireSmart materials and/or workshops delivered.	UBCM CRI FCFS funding (FireSmart Coordinator salary)
9	Moderate	Make the completed CWRP publicly available on the District of Sooke website.	Members of the public should be able to review the rationale for FireSmart initiatives in the District. The CWRP may also be directly shared with local stakeholders and land managers who may be interested in collaborating on FireSmart and wildfire risk reduction activities.	Sooke Fire & Rescue (FireSmart Coordinator), Corporate Communications	1 year	CWRP available for download or viewing on the municipal website.	Local government funding (4-8 hrs)
10	Moderate	Host all-hazard emergency preparedness workshops for residents, including T'Sou-ke First Nation community members.	Resident engagement on other forms of emergency preparedness is currently high; providing a curriculum that delivers information on topics of interest (e.g., windstorm, earthquake and tsunami preparedness) that adds in FireSmart and wildfire preparedness content may result in higher uptake.	Sooke Fire & Rescue (FireSmart Coordinator), Emergency Program Coordinator.	1 year (evaluate success and consider ongoing project)	Workshops hosted, number of attendees	Local government funding (Emergency Program Coordinator time), UBCM CRI FCFS funding (FireSmart Coordinator salary).

5.2 LEGISLATION AND PLANNING

Local plans and bylaws relevant to wildfire risk and emergency planning were reviewed during the CWRP development process, with key points summarized in Sections 2.4 and 2.5. Reviewing zoning bylaws through a wildfire lens to assess where they inadvertently promote conditions that may contribute to fire spread (*i.e.*, landscaping, fencing), and determining where bylaws can be updated or strengthened to reduce wildfire risk to development (such as adopting bylaws tied to wildfire hazard levels and requiring minimum standards for access, water supply, construction materials and techniques, and vegetation management) can help accomplish the goal of a more wildfire resilient community. While Sooke's existing planning and bylaw framework is up to date and robust, several opportunities to strengthen it were identified through this review process and through feedback from the CFRC.

One key change recommended is an update to the Fire Protection Services bylaw. This bylaw was originally passed in 2007, and multiple amendments have been made to it over time, resulting in a document that is complicated to interpret and apply, according to CFRC members, who have received concerns and complaints about this from Sooke residents. This issue was also reported in the 2021 Sooke Fire Department Master Plan, which suggested revising several provisions, including the provision for open burning. The Fire Department Master Plan proposed that discretionary power be given to the Fire Chief to ban any open burning based on their concerns related to fire risk, or that a second bylaw be created to regulate open burning. Fulfillment of either of these recommendations are in alignment with the objectives of this plan. Because of the lack of free yard waste disposal in the municipality, backyard burning may be a preferred debris disposal option for some residents. An updated or re-drafted bylaw should include provisions that will effectively reduce the potential hazards related to open burning, and provide the Fire Chief discretionary powers to prohibit it based on fire danger in the municipality, while not creating undue obstacles for this activity under safe conditions.

Another regulatory tool that can influence the rate at which FireSmart principles are adopted, and which the Sooke should consider implementing, is a landscaping bylaw. Several jurisdictions, including the District of Squamish and the City of Nelson, have implemented Wildfire Landscaping Bylaws to prohibit the planting of new flammable conifer shrubs next to residences. Even without much enforcement, such a bylaw can a) educate the public on FireSmart best practices; b) set the tone for FireSmart recognition at the local government scale; and, c) be implemented for public infrastructure.

Finally, it is recommended that the District of Sooke implement an Urban Forest Management Strategy, as discussed in the Official Community Plan. This plan should be completed in alignment with community wildfire resiliency objectives, and with consideration for wildfire as a possible hazard to, and disturbance factor of, urban forests. Policies and management strategies that support urban forest ecosystem health, functionality, and resiliency are in alignment with the objectives of this plan. Objectives or actions that could be considered in the Urban Forest Management Strategy include:

- Acknowledgement of interface fire as a possible disturbance facing urban forests.
- Monitoring the state of urban forests for patterns of tree mortality related to pathogens, insects, or climate-related events (e.g., heat or drought events, severe winter storms, etc.).

- Adopting FireSmart Landscaping principles for tree planting in proximity to structures.

The review of the Sooke's existing suite of bylaws, plans and legislation found that together, these policies sufficiently fulfill most needs for mitigating fire ignition and wildfire hazards on private and municipal land in the municipality. The above opportunities to strengthen or expand these policies have been detailed in Table 20.

Table 20: Legislation and planning recommendation and action items

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
11	High	Sooke Fire & Rescue should deem debris piles left over from land clearing for residential development a fire hazard.	Piles of debris left on private land, after land clearing but prior to or concurrent with residential development, are an interface fire hazard. The Fire Chief is empowered by the Fire Protection Services bylaw to deem a 'condition or thing' a fire hazard at their discretion; Bylaw Officers may be involved in enforcing the removal or mitigation of the hazard.	Sooke Fire & Rescue (Fire Chief), Sooke Bylaw Officers	1 year	Debris piles removed after land clearing completed.	Local government funding (20-40 hrs)
12	Moderate	Incorporate FireSmart principles into the completion of the District's Urban Forest Strategy and Tree Management Policy.	To imbed FireSmart principles and wildfire risk reduction practices into the District's urban forest.	Parks Department	>5 years	Plans completed	Local government funding
13	Moderate	Update the Fire Services Provision Bylaw, with a focus on outdoor burning regulations.	The CFRC and the Fire Department Master Plan identified the need for an updated or re-drafted version of this bylaw to reduce complexity and increase functionality and readability of the document. Clarifying the language of the bylaw may have a secondary effect of improving resident compliance. The updated bill should include a segment giving overarching authorization to the Fire Chief to prohibit any or all open burning based on concerns relating to fire danger. In updating or revising this bylaw, draft regulations for outdoor burning with consideration for residents who may burn yard waste as the most convenient and economic option for disposal, due to restricted options for yard waste disposal in the municipality.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator)	3-5 years	Updated or new Fire Services Provision Bylaw adopted.	CRI FCFS funding (up to \$10,700)
14	Moderate	Establish a bylaw regulating landscaping to be compliant with FireSmart vegetation principles.	Landscaping bylaws are policy tools increasingly used by municipalities throughout the Province to increase adoption of FireSmart landscaping principles in communities. Draft a bylaw with considerations for the placement and spacing of highly flammable plants in close proximity to residences.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator), Planning & Development	3-5 years	New FireSmart Landscaping Bylaw adopted	CRI FCFS funding (up to \$10,700)
15	Low	Complete or schedule periodic updates of the CWRP.	The frequency of updates is dependent upon major changes which would impact wildfire risk. However, a current (i.e., no more than five years old) CWRP is a requirement for further CRI FireSmart Community Funding & Supports program funding.	Sooke Fire & Rescue (Fire Chief, FireSmart)	>5 years	CWRP updated on timeline required for continued funding	CRI FCFS funding (up to \$32,000)

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Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
				Coordinator), third party consultant		from UBCM CRI FCFS program	

5.3 DEVELOPMENT CONSIDERATIONS

As introduced in Section 5.2, there are important structure and neighborhood design features that can be regulated through land use planning and the development processes as a means to mitigate the risk of impacts to a community by wildfire. These include:

- Location of development, including hazardous or vulnerable land uses, in relation to high hazard forested vegetation, steep slopes, and other geographical features that contribute to extreme fire behavior.
- Access and circulation patterns.
- Availability and adequacy of water supply.
- Type of construction materials on structures and attachments (privately and publicly owned).
- Lot size and structure density.
- Design guidelines and architectural standards.

A key policy tool that can be used to regulate development and facilitate the adoption of FireSmart best practices are Development Permit Areas. These are geographic areas, defined in the Official Community Plan, where special conditions must be met, or construction or building design practices must be adhered to, to obtain a development permit. Pursuant to Section 5 of the 2015 BC Building Act, municipalities may not establish technical regulations related to buildings in their Building Bylaw. As a result, Development Permit Areas are commonly used to enact FireSmart requirements for new buildings (and specific renovations of existing buildings) and subdivision development.

Currently in Sooke, all proposed developments, land alterations, redevelopments and subdivisions are subject to a Development Permit unless specifically exempted. Applicants for a Development Permit must produce a wildfire hazard assessment for lands larger than 4 hectares, lands abutting properties greater than 4 hectares, or for properties abutting the municipal boundary. However, this is not considered a robust Wildfire Development Permit Area policy, and the following issues were identified:

- Policy may not cover individual home builds or construction of smaller subdivisions (<4 ha).
- No actions are mandated after the wildfire hazard assessment is completed.
- It is possible for potential developers to rationalize development or home construction that does not align with FireSmart standards.

Incorporating a specific, comprehensive Wildfire Development Permit Area will guide the design of subdivision developments and the construction of individual properties to minimize wildfire hazards and contribute to the fire safety of the neighbourhood and community. The following aspects should be considered in the creation of the Wildfire Development Permit Area:

- Establish DPA objectives, to give direction and measurable targets to this policy. Examples of DPA policy objectives could include: minimizing risk to property and people from wildfires, minimizing risk to forested areas surrounding the municipality, and conserving the visual and ecological assets of the forests surrounding communities, etc.

- Where possible, it is recommended to mandate FireSmart construction materials within the established wildfire hazard development permit area. This might include mandating the use of fire-resistant roofing, and siding.
- Where possible, it is recommended to mandate the inclusion of a 1.5 meter non-combustible zone, and FireSmart landscaping on the property.
- Engage the development community and the public in the DPA development process to educate, inform, and allow for input (e.g. through workshops, informational sessions, or open houses).

A Wildfire Development Permit Area can incorporate as many or as few FireSmart construction and landscaping principles to achieve the level of risk reduction acceptable by the community and the municipality. However, three key principles have been proven to provide the greatest risk reduction and should be seriously considered:³⁸

- Installing fire-resistant roofing.
- Installing fire-resistant structure siding.
- Creating a 1.5 metre non-combustible zone surrounding the structure.

Providing more detailed specifications for a Wildfire Development Permit Area is beyond the scope of this plan. However, developing a Wildfire Development Permit Area policy is fundable through the CRI FireSmart Community Funding and Support Program.³⁹ Two important next steps to take to initiate a Wildfire Development Permit Area process include: a) retaining a qualified forest professional with wildfire management in their scope of practice, to interpret local threat data presented in this report, and gather additional information as required; and b) creating a working group of municipal staff from appropriate departments (e.g., Planning Department, Sooke Fire & Rescue), to collaborate on acceptable policy language and structure. For example, in lieu of a Wildfire DPA, new developments might follow FireSmart principles during the rezoning phase, where recommendations can be made through a covenant to restrict property use to ensure fire risks are mitigated.

Additionally, the municipality should consider incorporating a clause or provision in the Development Permit Area policy regulating the return of subdivision lands to the municipality as parkland. Before ownership transfer occurs, a wildfire hazard assessment should take place to determine any hazard posed by vegetation. Fuel management treatment may be required where hazard is unacceptably high. This is relevant for consideration as several of the proposed treatment units identified in this CWRP are located in municipal parks where vigorous invasive plant growth has resulted in high hazard vegetation types. A provision requiring developers to abate fuel hazards prior to the municipality assuming liability for park lands would reduce the need for the municipality to undertake risk-reduction works like this in the future.

³⁸ As noted in FireSmart BC's recently published "An examination of the Lytton, BC wildland-urban fire destruction" document and additionally detailed and discussed in the National Research Council's "National Guide for Wildland-Urban Interface Fires".

³⁹ 2024 CRI FireSmart Community Funding & Supports Program

Finally, the construction of critical infrastructure should also be considered through a wildfire lens. An inventory of critical infrastructure was listed previously in Section 3.2 above. Existing critical infrastructure has not been assessed for wildfire risk – completion of such assessments is recommended in Section 5.6.

A summary of recommendations that Sooke can implement to embed FireSmart practices and considerations into development are detailed below in Table 21.

Table 21: Development Considerations recommendation and action items

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
16	High	Complete FireSmart assessments of critical infrastructure.	Protecting fire halls, water systems and other assets essential for the functioning of government and the community is critical to wildfire response and recovery.	Sooke Fire & Rescue (FireSmart Coordinator)	1-2 years	Critical infrastructure assessments completed	UBCM CRI FCFS funding (up to \$850 per structure)
17	High	Develop a Wildfire Development Permit Area.	Development Permit Areas are policy tools that regulate building design and construction in designated areas within municipalities. The Official Community Plan does not currently include such a policy; however, the District of Sooke Climate Action Plan supports this recommendation.	Sooke Planning Department, Fire & Rescue (FireSmart Coordinator), consultant support	1-2 years	Official Community Plan amended to include Wildfire Development Permit Area	CRI FCFS funding (up to \$10,700)
18	Moderate	Complete upgrades to critical infrastructure and/or landscaping around critical infrastructure sites based on FireSmart assessments.	When critical infrastructure assessments are completed, prioritize implementation of upgrades and landscaping work.	Sooke Fire & Rescue (FireSmart Coordinator)	3-5 years	Critical infrastructure upgrade(s) completed.	UBCM CRI FCFS funding (up to \$53,500 per structure)
19	Moderate	Ensure new critical infrastructure that is built adheres to FireSmart principles for building design and construction materials.	An internal corporate policy for design and construction should include specifications for: roof design and materials; sidings, vents & openings; gutters & eaves; decks & porches; fencing; landscaping; and other key structure features as required.	Sooke Fire & Rescue (FireSmart Coordinator), Sooke Planning Department	1-2 years (corporate policy development); ongoing (building critical infrastructure)	Critical infrastructure built with wildfire resilient materials and design	UBCM CRI FCFS funding for corporate policy development.
20	Moderate	Develop a policy to ensure that land to be transferred to the District of Sooke as municipal parks as part of the subdivision development process represent an acceptable level of risk prior to the District taking possession.	The District of Sooke should ensure that park land it will acquire are in a low-hazard condition prior to assuming liability for these areas. This recommendation can be fulfilled using a 'Parkland Acquisition Policy', which should include provisions that state the District will not accept land deemed to be a public risk.	Sooke Planning Department, Fire & Rescue (FireSmart Coordinator, Fire Chief), consultant support	3-5 years	Policy adopted	CRI FCFS funding (up to \$10,700)

5.4 INTERAGENCY COOPERATION

The goal of interagency cooperation is to approach community wildfire resiliency planning from a landscape-level, multi-agency perspective.⁴⁰ When planning occurs only within single agencies or departments, the potential for efforts to be duplicated increases. Inter-agency cooperation increases the ability of local governments to plan for and respond to emergencies effectively. For a municipality like Sooke, which is surrounded by large tracts of forest land managed by other jurisdictions, and with critical infrastructure servicing the municipality located outside its boundaries, this is particularly important. Working together with adjacent jurisdictions can help increase awareness of different agencies’ priorities and concerns.

A Community FireSmart and Resiliency Committee (CFRC) is recommended as part of the CWRP development process.⁴¹ A CFRC reflects the key planners and responders most involved in local FireSmart, wildfire resiliency planning, wildfire and emergency response, and land management specific to the WUI. Committees such as this foster collaborative problem solving and planning, and delineate required roles and actions during times of emergency response. Table 22 shows the participants in the CWRP development process, who are land managers or are involved in community wildfire resiliency work in Sooke and the surrounding area. Going ahead, membership of the CFRC may change or expand, depending on the scope of projects that are identified.

Table 22: District of Sooke’s Community FireSmart Resiliency Committee (CFRC)

Agency	Title
Sooke Fire Rescue	Fire Chief
	FireSmart Coordinator
District of Sooke	Planning & Development
	Parks and Environmental Services
T’Sou-ke First Nation	Lands Manager
Capital Regional District	Parks Department - Regional Manager
	FireSmart Coordinator

The District of Sooke has taken steps to cooperate and plan collaboratively with adjacent jurisdictions and land management agencies. There is currently a good working relationship with BCWS, mostly through deployment and working together on recent local wildfire response. Sooke also participates in both the Regional Emergency Management Partnership and Local Government Emergency Planning Committee via ongoing meetings and collaborations.

There are also opportunities to strengthen interagency cooperation for the purpose of community wildfire resiliency. For example, a regular schedule of meetings would help develop the relationship between

⁴⁰ CRI FireSmart Community Funding and Supports 2021 CWRP Supplemental Instruction Guide

⁴¹ Starting in 2024, UBCM CRI funding for the FireSmart Community Funding & Supports program will be contingent on having an active CFRC.

Sooke and BCWS and encourage collaboration on strategies for wildfire resiliency in the region. Increasing communications and collaborations with the CRD is also recommended. Because the CRD provides services within Sooke, and because of the extensive tracts of land managed by CRD Parks within Sooke's WUI, it is important to maintain current relationships with key staff members. This also relates to the issue of access and management of gate keys for CRD parks located within Sooke Fire & Rescue's Fire Protection Area, discussed in Section 3.2. The CRD has recently completed their own series of Community Wildfire Resiliency Plans. Increasing a schedule of formal meetings and collaboration (for example, through the CFRC), will increase the likelihood that community wildfire resiliency initiatives will align across the region.

T'Sou-ke First Nation is developing a Community Wildfire Resiliency Plan in 2023. Through the development of this plan, preliminary conversations were held and information shared. However, due to the close proximity of Sooke and T'Sou-ke First Nation, continuing to build the relationship with T'Sou-ke First Nation is of key importance to the District; and because Sooke Fire & Rescue is contracted to provide services to T'Sou-ke First Nation, additional collaboration beyond the completion of this plan is recommended. Continued collaboration will increase the likelihood that opportunities for joint initiatives are identified.

It is recommended that the CFRC focus on the following important risk reduction and planning measures during its initial meetings:

- Implementation of CWRP recommendations and monitoring progress.
- Focus of UBCM CRI FireSmart Community Funding & Supports funding requests, as well as other grants, as applicable.
- Progress of other emergency management planning.
- Discussion of ongoing projects, priorities, and concerns for other agencies involved in emergency response or land management, including (but not limited to) the following:
 - Ministry of Forests – Wildfire Risk Reduction
 - BC Wildfire Service
 - FortisBC
 - BC Hydro
 - CRD – Parks and Water Services

Additional recommendations and action items Sooke can implement to increase interagency cooperation are listed below in Table 23.

Table 23: Interagency Cooperation recommendation and action items

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
21	High	Establish a schedule of meetings for the District of Sooke Community FireSmart Resiliency Committee.	The CFRC is an important platform to engage with stakeholders and local government bodies to ensure that wildfire resiliency initiatives are compatible with other agencies' planning priorities. Maintaining an active CFRC will be a requirement to obtain UBCM CRI FireSmart Community Funding & Supports Program grant funding starting in 2024.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator), all CFRC participants	Ongoing	Meetings occur	CRI FCFS funding (up to \$2,140 per meeting)
22	High	Create a regular schedule of meetings and communication with other local government agencies and first responders.	Sharing and gathering information with local government bodies and first responder agencies is important to maintain readiness to respond and recover to emergency incidents. This could be completed concurrently with the previous recommendation to create a regular schedule of meetings for the CFRC.	Sooke Fire & Rescue (Fire Chief, FireSmart Coordinator), CFRC participants as necessary	Ongoing	Meetings occur	CRI FCFS funding (up to \$2,140 per meeting – counts as a CFRC activity)
23	High	Attend the FireSmart Conference, and/or Wildland Urban Interface Symposium.	The Wildland Urban Interface Symposium is a training event directed at fire department personnel, while the FireSmart Conference can be attended by any municipal staff members. These events are beneficial for the education and networking opportunities they provide.	Sooke Fire & Rescue (FireSmart Coordinator), and any fire department or municipal staff participants	Annual	Conference / symposium attended	CRI FCFS funding (up to \$2000 per attendee, max. 4 staff attending)
24	Moderate	Engage with T'Sou-ke First Nation to update the existing Fire Services Agreement.	The Fire Services Agreement between T'Sou-ke First Nation and Sooke Fire & Rescue was identified as out of date as part of the Fire Department Master Plan. A clear, comprehensive agreement reflecting current response needs and capacity should be developed.	Sooke Fire & Rescue (Fire Chief), T'Sou-ke First Nation	1-2 years	Updated agreement adopted	CRI FCFS funding (up to \$10,700)

5.5 CROSS-TRAINING

Sooke Fire Rescue's current schedule of training includes both standard and specialized wildfire training for members. In-house wildfire skills refresher courses/training occur annually. The program as it stands is considered robust, and the focus should be on maintaining the program as the department adds new members. The specialized training offered to some members currently includes:

- Strike Team / Task Force Leader training
- Engine Boss training
- RT-130 Wildland Fire Safety Training and S-190 Introduction to Wildland Fire Behaviour (third-part training and certifications – Quintech Fire Services, International Association of Fire Fighters)

Sooke Fire Rescue has also participated in some multi-agency and team cross-training exercises in the past, including the following:

- Wildfire training exercise (2022)
- Wildland-Urban Interface Symposium in Penticton (2019)
- Erinan Estates emergency training exercise (2018)

All staff and agency partners who are expected to participate in the development and implementation of this plan, or participate in wildfire response and recovery, should be appropriately trained. In addition to fire department members, grant funding for training opportunities is available for other emergency management staff. Training programs include, but are not limited to: Introduction to Emergency Management in Canada (basic concepts and structure of emergency management); and ICS-100 (introduction to an effective system for incident command, control, and coordination of response at an emergency site – available online). Assessing the skills and training of municipal staff who may be involved in the Emergency Operations Centre, and providing training courses as required, is recommended.

Expanding multi-agency training experiences is also a focus for recommendations. Regular in-person cross-training between BCWS and structural fire crews is important as crews are likely to work together and use each other's equipment in the event of an interface wildfire. Cross-training exercises and multi-jurisdictional exercises are also valuable to schedule with mutual aid partners and other emergency responders (e.g., Search and Rescue organizations, or the RCMP), for similar reasons. The objectives for these exercises overlap with objectives for Interagency Cooperation (Section 5.4), which includes strengthening relationships and sharing information between agencies.

Firefighting Resources

Sooke Fire Rescue is a composite department, with ten full-time and 23 paid-on-call members. In the spring of 2023, the department adopted a 24-hour staffing schedule. There are plans to hire six additional career firefighters to staff in the next three years, to achieve 24-hour staffing of Station One by career

firefighters. This will allow for quicker response, and match services to the increased population growth in the community.⁴²

Equipment deficiencies were not reported as a concern by the CFRC, a finding that is supported by this plan. Sooke Fire Rescue maintains an equipment and vehicle inventory with the following forestry- and wildfire-related components (summarized):

- Three large apparatuses that carry forestry equipment:
 - 'Engine 12', which meets the standard for Type 1 engine deployment in BC
 - 'Brush 1' and 'Tender 1' carry forestry equipment
- SPU Type 2 trailer that meets 2021 BC Wildfire Service specifications
- UTV and trailer (with handtools, hose)
- Spare equipment (sprinklers, pump, hand tools, etc.)
- PPE (intended for members deployed to BCWS incidents)

Water availability for suppression purposes where required within the municipality is considered adequate. Hydrant flow testing has been completed in the core municipal areas, with no deficiencies reported. Flow testing is ongoing for the outer areas of the municipality. Some areas of the municipality are located outside of hydrant coverage (e.g., Phillips and Glinz Lake Road). However, Sooke Fire & Rescue has attained tender shuttle accreditation, which is a recognized equivalency to hydrant protection. To be accredited, fire departments must commit to maintaining a high standard of organization, and practice delivering the service regularly.⁴³ The fire department must be able to show through testing and documentation that it can continuously provide water supplies in excess of the minimum required for hydranted municipal-type water supplies.⁴³ As such, Sooke Fire and Rescue is well equipped to respond to structural and small interface fires within its response area.

Recommendations related to cross-training are listed in Table 24.

⁴² <https://www.sookenewsmirror.com/news/sooke-fire-rescue-hopes-to-hire-six-more-firefighters/>

⁴³ <https://fireunderwriters.ca/grading/superior-tanker-shuttle-service.html#:~:text=Accredited%20Superior%20Tanker%20Shuttle%20Service%20is%20a%20recognized%20equivalency%20to,practice%20delivering%20the%20service%20regularly.>

Table 24: Cross-training recommendation and action items

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
25	High	Conduct annual training exercises with mutual aid partners.	No drills or exercises with mutual aid partners have occurred recently. Conducting such exercises can strengthen relationships with other fire departments in the region and identify opportunities to increase efficacy of co-operation and service provision on mutual aid calls. Training exercises may or may not be desktop based. Specifically, seek to conduct training exercises with T'Sou-ke Nation fire department.	Sooke Fire & Rescue (Fire Chief), mutual aid partner departments	Annually	Exercises occur	Tabletop exercises eligible for UBCM CRI FCFS funding (up to \$2140 per meeting).
26	High	Expand Emergency Operations Centre training for municipal staff.	Increasing training, competency and certifications (Incident Command System, Emergency Operations Centre Introduction, Emergency Operations Centre Essentials) for Emergency Operations Centre staff is critical for wildfire response and recovery. This recommendation is supported by the findings in Section 12.2 of the Fire Department Master Plan, as well as feedback from the CFRC. Training should be offered to municipal staff identified for EOC deployment and/or key District leadership roles. Collaboration with T'Sou-ke Nation should occur, to determine if completing training in tandem is appropriate. Information should also be shared with T'Sou-ke Nation so that T'Sou-ke emergency responders and administrators know how the District will operate, and how operations might be integrated with T'Sou-ke Nation's emergency planning.	Emergency Program Coordinator, District of Sooke municipal staff (various)	1-2 years	Certifications per person are maintained or increased	UBCM CRI CEPF funding (Emergency Operations Centres & Training)
27	Moderate	Organize a schedule for practice and training with BCWS, using wildland equipment.	Wildland-specific training is integral to WUI wildfire response. Annual training exercises create an opportunity to strengthen working relationships with BCWS. Specifically, seek to include T'Sou-ke	Sooke Fire & Rescue (Fire Chief)	Every second year	Exercises occur	Local government funding

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
			Nation fire department members in annual exercises.				
28	Moderate	Maintain or expand wildfire-specific training for members.	Continue to certify members in WSPP-WFF1 and WSPP-115, and maintain or expand specialized training courses (Strike Team / Task Force Leader, Engine Boss). Collaborate with T'Sou-ke Nation, to determine if completing training together is appropriate. If training providers are brought to Sooke, T'Sou-ke Nation participants may be able to boost numbers and reduce training program costs.	Sooke Fire & Rescue (Fire Chief)	Ongoing	Certifications per person are maintained or increased	UBCM CRI FCFS funding

5.6 EMERGENCY PLANNING

Local government wildfire preparedness and resource availability are critical components of efficient wildfire prevention and planning. When several wildfire emergencies are taking place throughout the province, BCWS resource availability may become scarce. Deployment of provincial resources occurs based on the Provincial Coordination Plan for Wildland-Urban Interface Fires.⁴⁴ Therefore, local government wildfire preparedness and resource availability are critical components of community wildfire resilience – individuals and agencies need to be ready to act. Plans, mutual aid agreements, resources, training, and emergency communications systems make for effective wildfire response.

Sooke manages its own emergency management program. Emergency management personnel have recent experience (within the last 10 years) activating the Emergency Operations Centre and responding to natural disaster emergencies in the area – for example: in response to flooding in 2021; and, throughout the COVID-19 pandemic. Many of the foundational components of the emergency management program are in place, as outlined in the Emergency Response and Business Continuity Manual. However, additional planning or preparation could occur in some areas.

The CFRC identified the need for an emergency communications plan to be included as a component of the Emergency Response and Business Continuity Manual. Multiple agencies may be involved in responding to an incident and each may have different established communication channels (e.g., different social media platforms, press release, etc.). An emergency communications plan would create standardized protocols for the content of, and the platforms and methods for, communications to the public. This could reduce the likelihood that redundant, contradictory, or outdated information is not released. An emergency communications plan should also consider the use of the new emergency alert app ('Alertable') adopted by Sooke.⁴⁵

Additionally, the 2011 CWPP recommended the completion of an evacuation plan for the municipality, and while several key steps towards this have been taken, it is not yet complete. Evacuation route data was compiled in 2019, but has not been incorporated into the Emergency Response and Business Continuity Manual. The Manual outlines the preliminary considerations for evacuation coordination and notification, including different 'levels' of evacuation required for events of differing severity. However, few tactical or operational standards, or defined roles or responsibilities, are included. In Sooke, the following issues add complexity to possible evacuations:

- Minimally maintained logging roads allow for some access (e.g. by off-road vehicles) to the Shields Lake area, but may not permit access by Sooke Fire & Rescue.

⁴⁴ Provincial Coordination Plan for Wildland Urban Interface Fires. 2016. Retrieved from: https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/provincial-emergency-planning/bc-provincial-coord-plan-for-wuifire_revised_july_2016.pdf

⁴⁵ <https://sooke.ca/district-services/departments/protective-services/public-alert-notification-system-pans/>

- Gates located within CRD parks are locked, and key management (e.g. labelling, numbering, storage and spares) is not yet sufficient to guarantee quick access in the event of an emergency.
- Access to rural residential properties may be inhibited by the following factors:
 - Situated on long, one-way access roads
 - Accessed by steep or narrow driveways
 - Poor or no street lighting
 - Unclear address signage

Owing to the above planning gaps, as well as population growth in the region and changes to physical infrastructure (e.g., Highway 14 expansion, cell tower installations), it is recommended that the Emergency Response and Business Continuity Manual be reviewed and updated. Additionally, Sooke Fire & Rescue should gather information about possible access constraints to rural residential properties, by surveying driveways and strata roads in these areas, focusing on the following features: length and width of driveways; turnaround points; notes on natural/seasonal water sources, and water cisterns/tanks; visibility from main road; street lights; and any other important property vulnerabilities or access concerns. The information gathered could be incorporated into preplans for properties in higher risk areas, and input into Sooke Fire & Rescue's new fire and Emergency Management System RMS software when it is adopted and made operational.

In addition to evacuation planning, the development of pre-incident wildfire suppression plans may be considered by local government. A pre-incident plan is a compilation of essential fire management information needed to save valuable time during fire suppression operations. It might take the form of a brief document, or a map, or both. The purpose of these plans is to share key information about the community with other agencies who otherwise would not have access to this local context. This could include the following topics (grouped by the related Incident Command System categories):

- **Command:** Authority, constraints, structural protection needs, management constraints.
- **Operations:** Helicopter base locations, flight routes, restrictions, and water intakes, fire control line locations and natural barriers, crew/personnel safety zones and staging locations, fuel caches.
- **Logistics:** Base camp locations, roads and trails, utility and communications critical infrastructure.
- **Planning:** Maps (neighbourhoods, vegetation and fuel, fuel treatment areas, hazards, critical infrastructure, archaeology and environmentally sensitive areas, water sources, access/egress.

Recommendations and action items related to emergency management planning are detailed below in Table 25.

Table 25: Emergency Planning recommendation and action items

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
29	High	Maintain or expand the number of community spaces that can be used as cooling centres during extreme heat events and fresh air spaces during poor air quality events.	Extreme heat events and poor air quality events are associated with wildfire season and carry public health risks, especially for vulnerable populations.	Sooke Emergency Program Coordinator	Annually / as needed during weather events	Number of cooling and fresh air spaces in the community maintained or increased	Local government funding
30	High	Conduct Emergency Operations Centre activation drills annually.	The CFRC identified training and exercises for EOC membership as priority activities. Drills and test exercises can help identify areas where roles, responsibilities and operational guidelines can be clarified. Consider focussing one such drill on an evacuation scenario. Specifically, include T'Sou-ke Nation in annual drills.	Sooke Emergency Program Coordinator	Annually	Drills or exercises occur annually.	UBCM CRI CEPF program funding (Emergency Operation Centres & Training)
31	High	Update the Emergency Response and Business Continuity Plan, with a focus on: a) identifying key EOC positions and municipal staff positions that could fill these roles; b) adding evacuation route and procedures information; and, c) an Emergency Communications Plan component.	Clearly defined EOC roles and responsibilities are critical for delivering services in an emergency, and the Emergency Response and Business Continuity Plan should clarify these. While evacuation route data has been compiled, the District of Sooke currently does not have an evacuation plan formalized within this document, which is the primary guide to be used in any emergency. An Emergency Communications Plan was identified as a necessary addition to the Emergency Response and Business Continuity Plan by the CFRC. Given the current age of the plan (published 2013), and the extent of development and population growth in the region since that time, a general review of the plan is also recommended. Evacuation planning should consider the residents of T'Sou-ke Nation, as well as the wider area – given that there are many adjacent municipalities, and few routes to leave the District.	Sooke Emergency Program Coordinator	1 year	Plan is reviewed and updated.	Possible funding from UBCM CRI CEPF (Emergency Operation Centres & Training, Public Notification & Evacuation Route Planning), and/or local government funding.

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
32	High	Engage with the Capital Regional District to obtain the most recent location of locked gates and updated key copies for all gates.	The CFRC noted that organization and access to Capital Regional District park gate keys could be improved. Ensuring the District of Sooke has access to gate keys is important because Sooke Fire & Rescue is a first responder for Capital Regional District parks that are within municipal boundaries.	Sooke Fire & Rescue (Fire Chief), Capital Regional District (Parks Department)	1 year	New copies of keys obtained; gate locations updated	Local government funding (15-20 hrs)
33	Moderate	Gather information about locations of long and/or narrow public and private roads, private driveways, and dead-end roads without turnarounds.	Rural private and public roads and rural residential properties sometimes have long, narrow gravel stretches with unknown constraints to fire department access (i.e., steep slopes, vegetation encroachment). Areas of particular concern include the north end of Phillips Road, and strata and public roads and driveways throughout East Sooke. Consider conducting a survey program to map driveways, starting in rural residential areas, especially near East Sooke Regional Park and on the east and west side of the Sooke River. A survey program could be conducted by hiring seasonal workers (e.g., summer students) to measure length, width and slope of roadway, or by requesting this information from residents.	Sooke Fire & Rescue (FireSmart Coordinator)	1-2 years	Data compiled and locations with constraints identified	UBCM CRI FCFS funding (FireSmart Coordinator salary)
34	Moderate	Create a plan to promote the use of residential rooftop sprinklers.	Rooftop sprinklers are a tool to reduce the possibility of structure ignition in the face of an imminent wildfire. They can be most effectively used when the local fire department helps residents plan to install and use them. Fire department planning for residential sprinklers can ensure that water pressure and availability is maintained in an interface fire event. It can also ensure residents are aware that the use of sprinklers should not replace FireSmart work on their properties.	Sooke Fire & Rescue (FireSmart Coordinator, Fire Chief), Sooke Engineering Department	1-2 years	Plan completed; resident engagement occurs, as applicable.	Local government funding (15-20 hrs)
35	Moderate	Promote resident registration to the Alertable app notification system.	Expanding this app's audience will increase the ability of the municipality to provide information directly to residents in any emergency. Specifically, the District	Sooke Fire & Rescue (FireSmart Coordinator)	Ongoing	Number of downloads of Alertable app increases	UBCM CRI FCFS (FireSmart Coordinator salary)

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
			should also include T'Sou-ke Nation community members in their promotion campaign for the app.				
36	High	Develop a FireSmart demonstration project on critical infrastructure or a community asset that displays FireSmart practices and principles to the public.	A demonstration of FireSmart principles can passively increase resident awareness while protecting community assets or infrastructure. An investment in a community demonstration of FireSmart activities, which is currently lacking in Sooke, can provide a showcase for residents year after year. A demonstration project can provide a focal point for other events and engagement – such as an opening day ‘launch’ event, social media post content during design and construction, and an attraction for local media attention.	Sooke Fire & Rescue (FireSmart Coordinator), Sooke Engineering Department (depending on infrastructure or community asset)	1-2 years	Demonstration project complete	UBCM CRI FCFS funding (FireSmart Coordinator salary, up to \$850 for assessment, up to \$53,500 for building materials and labour for structure upgrades), local government costs (signage, other municipal staff time)
37	High	Seek funding to a build weather station in Sooke.	Accurate weather data for Sooke is not available at a local station. The nearest weather station is several kilometers from the centre of the District. An established weather station constructed in collaboration with T'Sou-ke Nation and the CRD will provide accurate weather data.	Sooke Fire & Rescue (FireSmart Coordinator), T'Sou-ke First Nation, Capital Regional District	1-2 years	Weather station funding applications are submitted	UBCM CRI FCFS program funding, local government, Indigenous Services Canada

5.7 VEGETATION MANAGEMENT

Vegetation management reduces potential wildfire intensity and ember exposure to people, infrastructure, structures, and other values through manipulation of both the natural and cultivated vegetation within or adjacent to structures and the community. A well-planned vegetation management strategy can greatly increase fire suppression effectiveness and reduce damage to property and to values.

Vegetation management can largely be accomplished through two different activities: residential FireSmart landscaping, or fuel management treatments.

Residential FireSmart Landscaping

Residential FireSmart landscaping refers to the removal, reduction, or conversion of flammable plants to create more fire-resistant areas in the FireSmart Immediate, Intermediate, and Extended Zones (Figure 5).



Figure 5. FireSmart home ignition zone

The District of Sooke has conducted several initiatives to increase awareness and support residents in adopting FireSmart vegetation management principles at the home level. A major focus for events has

been managing the invasive plant Scotch broom (*Cystisus scoparius*) in the municipality, in co-operation with a local invasive plant society ('Sooke Broom Busters'). Broom drop-off events were held for residents to dispose of broom vegetation cut on their property. Community clean-up events have been held for volunteers to work with Broom Busters and the Sooke FireSmart Coordinator to remove Scotch broom on municipal land. These events have been a popular way of both addressing the proliferation of flammable Scotch broom on public and private land in the municipality while capitalizing on resident interest in participating in stewardship of local ecosystems. Opportunities for residents to dispose of yard waste for reduced or no fees are also popular because there is not a standard yard waste pick up service in the municipality.

Broom clean-up programming has been promoted on municipal web pages and social media. There is overlap in the objectives and activities for Education and the residential landscaping component of Vegetation Management, because both of these FireSmart disciplines involve engaging with the public and encouraging private landowners to conduct risk reduction activities on their property. It is recommended that the municipality continue to seek out funding to maintain or expand this programming, to support residents in conducting FireSmart work on their property.

Fuel Management Treatments

Fuel management treatments change the structure and/or reduce the quantity of forest and grassland fuels in an area. This reduces the rate of spread and head fire intensity of fires and enhances the likelihood of successful fire suppression. Fuel management treatments may be fuel breaks (linear features, at least 1 km in length) or polygon treatments for discrete areas. The intent of establishing fuel treatments is to modify fire behaviour, and they should be designed to keep surface fires on the ground to avoid them from becoming more dangerous crown fires. An additional important objective of fuel treatments is to increase the feasibility, safety, and efficacy of suppression activities. Fuel treatments can be "anchor points," or strategic locations where fire control line construction can start or finish.⁴⁶ Decreasing the rate of spread and head fire intensity mean that ground crews are more likely to be able to access the area and successfully implement fire control tactics with the use of hand tools, water delivery systems, and/or heavy equipment. In contrast, where hazardous forest fuels promote more intense fire behaviour, fire control options become more limited, and ground crew access may not be possible, or is staged further away. The application of appropriate suppression tactics in a timely manner with sufficient resources is essential for fuel treatments to be effective. To increase the efficacy of fuel treatments, FireSmart standards should be applied to structures and their associated vegetation and other fuels to reduce the risk of structures igniting. Fuel treatment units require periodic maintenance to retain their effectiveness.

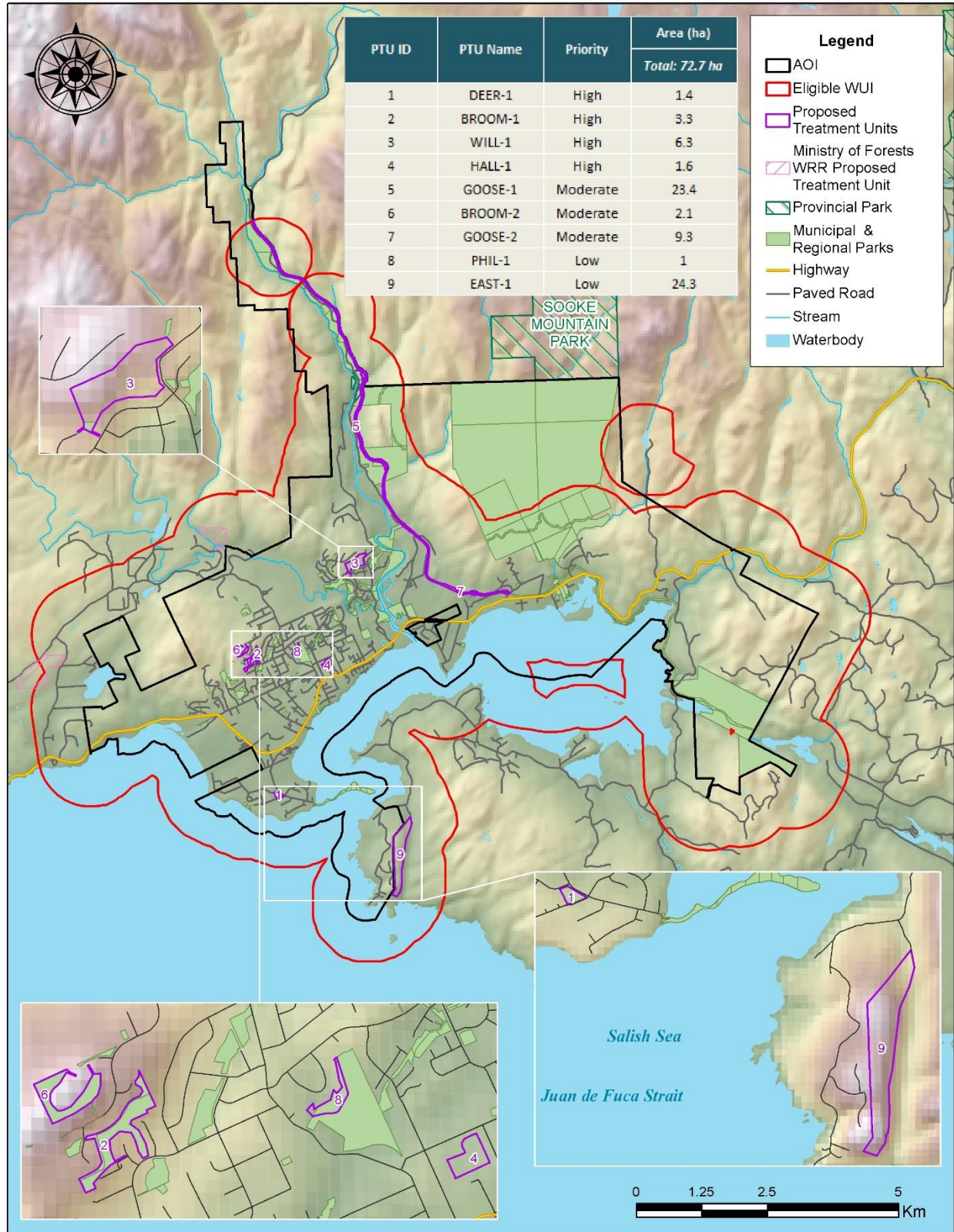
⁴⁶ BC Wildfire Service. 2020. 2020 Fuel Management Prescription Guidance. https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/wildfire-status/prevention/fire-fuel-management/fuels-management/2020_fuel_management_prescription_guidance_final.pdf

Fuel management treatment project have not yet been undertaken in the municipality. In 2022, a fuel management prescription area was identified under the Crown Land Wildfire Risk Reduction program at Otter Point. However, fuel management treatment of it has not yet been implemented.

As discussed in Section 3.2.5, fuel management treatments have the potential disturb archaeological sites, both known or unknown. Proposed treatment unit overlap with recorded archaeological sites or areas of high archaeological potential was not confirmed in the development of this plan. Prior to or during the fuel management prescription writing phase, the need to conduct an archaeological assessment should be evaluated, and completed as required to avoid impacts to archaeological values.

Several proposed treatment units are identified in Table 27. Units 'WILLOW-1', BROOM-1, and HALL-1 are ranked 'high priority' for treatment. These areas are characterized by a high hazard Scotch broom and Himalayan blackberry vegetation complex, (previously discussed in Section 4.1.1). While invasive species management initiatives currently exist in the municipality, it is recommended that an operational plan be created to remove the established invasive vegetation communities and rehabilitate the sites with low-flammability native plant communities. Section 5.3 also discusses steps the municipality should take to ensure that other land returned to the municipality as parks after subdivision development is not in a hazardous condition.

The vegetation that characterizes these sites is novel, and fuel management treatment will not conform to conventional techniques. While BC Wildfire Service has corroborated the Wildfire Threat Assessment plot data collected at these sites, it is recognized that prescription development and operational treatment will be unique. Seeking out a forest professional and/or registered professional biologist with the appropriate scope of practice (i.e., wildfire management and ecosystem restoration), and collaboration with grant funding agencies, will be key components of achieving risk reduction and meeting treatment objectives on these sites.



Map 7: District of Soke CWRP Proposed Treatment Units

Table 26: Summary of Proposed Fuel Treatment Units (PTUs)

#	PTU Name	Total Area (ha)	Type	WTA Plot (Plot Score)	Priority	Description	Rationale
1	DEER-1	1.4	Fuel Management Treatment (Forest Fuels) / FireSmart Demonstration Treatment	DEER-1 (High)	High	PTU overlaps the entirety of Deerlepe Park, a small municipal park in the southwest of Sooke. The site is characterized by a distinct two-layer stand, with mature Douglas-fir in the overstory, and a very high density of western hemlock saplings, seedlings, and regen in the understory. A walking path loops through the perimeter of the park. The park is embedded within the neighborhood, with properties directly abutting one boundary of it. Thinning of the dense conifer understory should occur.	High hazard fuel type (high density understory stems are characteristic of high-risk fire behaviour C-4 fuel types), proximity to adjacent homes, and high traffic area. Central location in the neighborhood makes this a good candidate for a FireSmart demonstration treatment.
2	BROOM-1	3.3	Fuel Management Treatment (Invasive Species)	STONE-1 (High)	High	PTU is located in Stone Creek municipal park, characterized by continuous, hedge-like formations of Himalayan blackberry and Scotch broom. The scale of growth of Himalayan blackberry shrubs has produced dense accumulations of dead stems and stalks beneath live leaves and branches. An invasive species-specific abatement and replanting prescription should be developed for this site. Conventional fuel management treatment techniques for forested areas are not appropriate.	Dense accumulations of stems and stalks, and high densities of the volatile and flammable Scotch broom plant result in a high hazard vegetation type that should be abated. The close proximity to homes (located up- and down-slope from vegetation), and continuous extent of vegetation with poor access (i.e., thorny shrubs), increases the strategic importance of treating this area. This is a high-traffic location with an increased risk for human-caused ignitions. The slope and vegetation characteristics increase risk of carrying wildfire upslope or from home to home.
3	WILLOW-1	6.3	Fuel Management Treatment (Invasive Species)	PRIV-1	High	PTU overlaps the entirety of Ravens Ridge Park, in northwest Sooke. Vegetation at this site is dominated by continuous, hedge-like formations of Himalayan blackberry and Scotch broom. The scale of growth of Himalayan blackberry shrubs has produced dense accumulation of dead stems and stalks beneath live leaves and branches. An invasive species-specific abatement and replanting prescription should be developed for this site. There are small, forested patches on the south side of the park, abutting property boundaries of homes on Willowpark Way, that are characterized by high stem densities and abundant fine woody debris and dead fine fuels (leaves, needles). Conventional fuel management treatment	Dense accumulations of stems and stalks and high densities of the volatile and flammable Scotch broom plant result in a high hazard vegetation type that should be abated. The close proximity to homes (located up- and down-slope from vegetation), and continuous extent of vegetation with poor access (i.e., thorny shrubs) increase the strategic importance of treating this area. This is a high-traffic location with an increased risk for human-caused ignitions. The slope and vegetation characteristics increase risk of carrying wildfire upslope or from home to home.

#	PTU Name	Total Area (ha)	Type	WTA Plot (Plot Score)	Priority	Description	Rationale
						techniques for forest fuels may be appropriate in these areas of the park.	
4	HALL-1	1.6	Fuel Management Treatment (Invasive Species)	HALL-1	High	This PTU encompasses the area around the Vancouver Island Public Library branch for the District of Sooke. Vegetation is characterized by continuous, hedge-like formations of Scotch broom, with a secondary component of Himalayan blackberry. An unsanctioned fire pit and smoking area on the south side of the lot was observed. Isolated mature Douglas-fir stems are present but forest cover value is <5%. An invasive species-specific abatement and replanting prescription should be developed for this site. Conventional fuel management techniques for forest fuels will not be appropriate.	High densities of the volatile and flammable Scotch broom plant and accumulations of Himalayan blackberry dead and dried stems and stalks have resulted in a high hazard vegetation type that should be treated to reduce risk to nearby values. Human activity (campfires / smoking) on the south side of the lot increases the likelihood of ignition in this area. This is a high-traffic location with an increased risk for human-caused ignitions.
5	GOOSE-1	23.4	Fuel Management Treatment (Forest Fuels)	GOOSE-1 (High) GOOSE-2 (High) GOOSE-3 (High) GOOSE-4 (High)	Moderate	PTU overlaps the right-of-way for the Galloping Goose Regional Trail, extending from the edge of the Eligible WUI north of Sooke Potholes Regional Park, south to where Sooke River Road intersects the trail. Trailside vegetation is characterized by differing forest types: drier segments, on cliffy outcrops and rocky soils, on the northern end of the PTU are characterized by young to mature Douglas-fir dominated stands, with salal and patches of Scotch broom in the understory; wetter segments, at lower elevations closer to the Sooke River at the south end of the PTU are characterized by western red cedar dominated stands with a mixed-wood component. Throughout at trail sides, edge effect dynamics have resulted in denser clusters of saplings and ladder fuels, and trail maintenance works (i.e., piling fallen saplings and seedlings and large branches at trail sides – conducted either by maintenance crews or the public) have resulted in accumulations of fine and coarse woody debris. Thinning, pruning, and surface fuel removal would be appropriate to abate hazard throughout this PTU.	This PTU forms a strategic, linear feature across the landscape. The trail is a well-maintained double-wide gravel track, suitable for vehicle access by treatment crews for work as well as response crews during a wildfire. Hydrants are present along the trail from Sooke Potholes Regional Park north. As such, the trail in its existing state is usable for access and interface fire operations. Creating continuously linked low-hazard fuel types along the right-of-way will enhance the safety and efficacy of operations or suppression works along the trail.

#	PTU Name	Total Area (ha)	Type	WTA Plot (Plot Score)	Priority	Description	Rationale
6	BROOM-2	2.1	Monitoring	<i>Not completed</i>	Moderate	PTU is located north of Stone Creek municipal park. Vegetation at this site is characterized by scattered patches of Scotch broom and unmowed grass. Vegetation spacing around homes is acceptable to FireSmart standards, and current hazard is low, overall. Treatment is therefore not necessary at the time of writing. Monitoring should occur, and the PTU revisited during the next CWRP update or revision to review site conditions.	These PTUs should be monitored and/or revisited during field work for the next CWRP because although the site is currently characterized by low hazard vegetation, the potential for encroachment of the site by flammable, high-risk invasive species (Scotch broom, Himalayan blackberry) is possible. Currently invasive plant cover is low, with discontinuous and isolated shrubs. However, plants are established on the site, and increased plant growth over time may alter the wildfire risk to homes and values.
7	GOOSE-2	9.3	Monitoring	<i>Not completed</i>	Moderate	PTU overlaps the right-of-way for the Galloping Goose Regional Trail, extending from the south end of GOOSE-1 to the intersection of the trail with Blythwood Road. This segment of the trail encompasses areas of low-flammability forest vegetation - primarily deciduous stands and mixed-wood stands with a low conifer component.	Monitoring and/or reassessment when the next CWRP is developed is recommended. Hazard posed by the current vegetation complex is low, however the strategic location of this right-of-way is significant as it forms a distinct linear feature across the landscape and can provide important access for vehicles and/or first responders for an interface fire incident. Accordingly, if hazardous vegetation attributes increase in over time (i.e., through forest structure change, invasive species encroachment etc.), this should be noted and fuel management techniques applied as appropriate.
8	PHILLIPS-1	1.0	FireSmart Demonstration Treatment	<i>Not completed</i>	Low	PTU overlaps a wooded area within John Phillips Park in central Sooke, characterized by a mature stand of Douglas-fir and western red cedar which abuts the backs of properties. Surface fuels are dead fines (fine woody debris, needles, leaves, etc.). Patches of ladder fuels are present where crowns extend to the ground. The larger area of the park is characterized by mowed and maintained lawns and isolated, open-grown ornamental trees. Unsanctioned foot paths traverse through and around the PTU. Located adjacent to Fire Hall 1.	Recommended as a FireSmart Demonstration Treatment due to the central location in downtown Sooke and proximity to residences. Add signage during and post-treatment to describe the completed works and the purpose of the project. Increasing resident awareness of FireSmart was identified as a priority by District of Sooke staff, and a demonstration of FireSmart vegetation management principles is one way to publicize FireSmart principles.

#	PTU Name	Total Area (ha)	Type	WTA Plot (Plot Score)	Priority	Description	Rationale
9	EAST-1	24.3	Fuel Management Treatment (Forest Fuels)	EAST-2 (Moderate)	Low	PTU is located behind homes, within East Sooke Regional Park. PTU abuts the Silver Spray neighborhood, which is within the District of Sooke municipal boundary but is served by East Sooke VFD through a contract agreement. The PTU itself is located outside the municipal boundary. Treatment links to the FireSmart 'Extended Zone' of nearby homes, and low-hazard fuel types surrounding it. Proposed treatment to include thinning, focusing on removal of dead standing understory stems, abatement of fine woody debris accumulations, and some pruning.	While Wildfire Threat Assessment shows a moderate score overall, the more remote location, plus poor access, increases the importance of creating continuity of low-hazard forest fuels behind homes. The proposed treatment unit will link to riparian areas and low-flammability vegetation characterizing the lower slopes and valley bottom adjacent to the unit.

Table 27: Vegetation management action items

Item #	Priority	Recommendation	Comments	Lead	Timeframe	Metric for Success	Funding Source
38	High	Continue to fund and promote Scotch broom removal events in Sooke.	A broom removal pilot program was offered in 2022, where residents could remove broom from their own property and drop off the plant debris at the public works yard. Maintaining this popular event is recommended to mitigate the hazard of flammable Scotch broom on private property. The District should collaborate with T'Sou-ke Nation to promote this event to T'Sou-ke Nation members as well, and/or offer this event in the T'Sou-ke Nation community.	Sooke Parks Department, Sooke Fire & Rescue (FireSmart Coordinator).	Ongoing	Events are hosted.	Local government funding
39	Moderate	Seek funding to waive tipping fees at the transfer station for yard waste and woody debris.	This activity is fundable under the 2023 CRI FireSmart Community Funding & Supports Program. Currently, tipping yard waste costs residents a fee. For a pilot version of this program, consider waiving tipping fees for a two-week spring clean-up program. Extend this program to T'Sou-ke Nation community members as well.	Sooke Fire & Rescue (FireSmart Coordinator), Sooke Environmental Services.	1-2 years	Tipping fees are waived for woody debris and yard waste drop off	UBCM CRI FCFS program funding
40	Moderate	Develop operational guidelines for the Parks Department, that will provide guidance for debris removal after felling of hazard trees.	When hazard trees are felled and debris is not appropriately distributed and/or abated, accumulations may become hazardous -- especially when located close to homes and trails. The Parks Department should use operational guidelines that specify: a) appropriate distribution of coarse woody debris, to maintain this beneficial habitat feature in a low-risk configuration; and b) appropriate quantities and distribution of fine woody debris to be retained	Sooke Parks, consultant support	1 year	Operational guidelines are adopted	UBCM CRI FCFS program funding
41	Moderate	Develop and implement fuel management prescriptions for treatment units identified in this plan.	Treatment units are identified by priority in Section 5.7. Three types of treatment units are identified -- FireSmart Demonstration Treatments, Fuel Management Treatments for Forest Fuels, Fuel Management Treatments for Invasive Species. Consider installing interpretive signage at fuel management treatment sites for public education.	Sooke Fire & Rescue (FireSmart Coordinator), consultant support	3-5 years	Prescriptions are developed	UBCM CRI FCFS program funding

SECTION 6: APPENDICES

6.1 APPENDIX A: LOCAL WILDFIRE RISK PROCESS

The Wildfire Threat Assessment results that are described in Section 4.3 were obtained through a process consisting of the following steps:

1. Updating fuel typing through in-situ verification (field work) and orthophotography.
2. Updating structural data using in-situ verification, spatial data, and orthophotography.
3. In-situ observations of wildland fuels and completion of Wildfire Threat Assessment worksheets.
4. Wildfire threat spatial analysis to produce mapping and statistics described in Section 4.3, using updated fuel typing, updated structural data, and Wildfire Threat Assessment worksheet results.

This appendix provides methodological information for each of the above steps to produce the Wildfire Threat Assessment, as follows:

- Further details on fuel typing update methodology are provided in Appendix A-1: Fuel Typing Methodology and Limitations
- Wildfire Risk Assessment plot worksheets are provided in Appendix B: Wildfire Threat Assessments– Worksheets and Photos.
- Wildfire Threat Assessment plot locations are summarized in Appendix A-4: Wildfire Threat Plot Locations.
- Wildfire threat spatial analysis methodology to produce results reported in Section 4.3 is detailed in the following sections:
 - Appendix A-2: Wildfire Fire Threat Spatial Analysis Methodology, and
 - Appendix A-3: WUI Risk Spatial Analysis Methodology.

6.1.1 APPENDIX A-1: FUEL TYPING METHODOLOGY AND LIMITATIONS

The Canadian Forest Fire Behaviour Prediction (FBP) System outlines five major fuel groups and sixteen fuel types based on characteristic fire behaviour under defined conditions.⁴⁷ Fuel typing is recognized as a blend of art and science. Although a subjective process, the most appropriate fuel type was assigned based on research, experience, and practical knowledge; this system has been used within BC, with continual improvement and refinement, for 20 years.⁴⁸

⁴⁷ Forestry Canada Fire Danger Group. (1992). *Development and Structure of the Canadian Forest Fire Behavior Prediction System: Information Report ST-X-3*.

⁴⁸ Perrakis, D.B., Eade G., and Hicks, D. (2018). Natural Resources Canada. Canadian Forest Service. *British Columbia Wildfire Fuel Typing and Fuel Type Layer Description* 2018 Version.

There are significant limitations with the fuel typing system which should be recognized:

- The fuel typing system is designed to describe fuels which sometimes do not occur within the area of interest
- Fuel types cannot fully, and accurately capture the natural variability within a polygon
- The data used to create initial fuel types, also has limitations.⁴⁸

Given these limitations, the following should be considered when using fuel type maps and information, to plan community wildfire resiliency projects:

- Fuel typing further from the developed areas of the study generally has a lower confidence.
- Fuel typing should be used as a starting point for more detailed assessments and as an indicator of overall wildfire risk, not as an operational, or site-level, assessment.
- Forested ecosystems are dynamic and change over time: fuels accumulate, stands fill in with regeneration, and forest health outbreaks occur.
- Regular monitoring of fuel types and wildfire risk assessment should occur every 5-10 years to determine the need for updated assessments.

Fuel types found within the WUI were listed and discussed in in Section 4.1.1

6.1.2 APPENDIX A-2: WILDFIRE FIRE THREAT SPATIAL ANALYSIS METHODOLOGY

Source Data

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

- PSTA Spotting Impact
- PSTA Fire Density
- PSTA Fire Threat Rating
- PSTA Lighting Fire Density
- PSTA Human Fire Density
- Head Fire Intensity
- WUI Human Interface Buffer (2Km buffer from structure point data)
- Wildland Urban Interface Risk Class
- Current Fire Polygons
- Current Fire Locations
- Historical Fire Perimeters
- Historical Fire Incident Locations
- Historical Fire Burn Severity

- Fuel Type

As part of the program, proponents completing a CWRP are provided with a supplementary Structure point dataset from BC Wildfire Service.

The provided PSTA data does not transfer directly into the geodatabase for submission, and several PSTA feature classes require extensive updating or correction. In addition, the Fire Threat determined in the PSTA is fundamentally different than the localized Fire Threat feature class that is included in the Local Fire Risk map required for project submission. The Fire Threat in the PSTA is based on provincial scale inputs - fire density, spotting impact; and head fire intensity; while the spatial submission Fire Threat is based on the components of the Wildland Urban Interface Threat Assessment Worksheet.

Spatial Analysis

Not all attributes on the WUI Threat Assessment form can be determined using a GIS analysis on a landscape/polygon level. To emulate as closely as possible the threat categorization that would be determined using the Threat Assessment form, the variables in Table 28 were used as the basis for building the analytical model. The features chosen are those that are spatially explicit, available from existing and reliable spatial data or field data, and able to be confidently extrapolated to large polygons.

Table 28. Description of variables used in spatial analysis for WUI wildfire risk assessment

WUI Threat Sheet Attribute	Used in Analysis?	Comment
Fuel Subcomponent		
Duff depth and Moisture Regime	No	Many of these attributes assumed by using 'fuel type' as a component of the Fire Threat analysis. Most of these components are not easily extrapolated to a landscape or polygon scale, or the data available to estimate over large areas (VRI) is unreliable.
Surface Fuel continuity	No	
Vegetation Fuel Composition	No	
Fine Woody Debris Continuity	No	
	No	
Live and Dead Coniferous Crown Closure	No	
Live and Dead Conifer Crown Base height	No	
Live and Dead suppressed and Understory Conifers	No	
Forest health	No	
Continuous forest/slash cover within 2 km	No	
Weather Subcomponent		
BEC zone	Yes	Although included, these are broad classifications, meaning most polygons in the Study Area will have the same value
Historical weather fire occurrence	Yes	
Topography Subcomponent		
Aspect	Yes	Elevation model was used to determine slope.
Slope	Yes	
Terrain	No	
Landscape/ topographic limitations to wildfire spread	No	
Structural Subcomponent		

WUI Threat Sheet Attribute	Used in Analysis?	Comment
Position of structure/ community on slope	No	Too difficult to quantify – this is a relative value.
Type of development	No	Too difficult to analyze spatially.
Position of assessment area relative to values	Yes	Only distance to structures is used in this analysis, being above, below or sidehill too difficult to analyze spatially.

The other components are developed using spatial data (BEC zone, fire history zone) or spatial analysis (aspect, slope). A scoring system was developed to categorize resultant polygons as having relatively low, moderate, high or extreme Fire Threat, or Low, Moderate, High or Extreme wildfire threat class. Table 29 below summarizes the components and scores to determine the Fire Threat.

Table 29. Fire Threat Class scoring components

Attribute	Indicator	Score
Fuel Type	C-1	35
	C-2	
	C-3	
	C-4	
	M-3/4, >50% dead fir	25
	C-6	
	M-1/2, >75% conifer	20
	C-7	
	M-3/4, <50% dead fir	
	M-1/2, 50-75% conifer	15
	M-1/2, 25-50% conifer	
	C-5	10
	O-1a/b	
	S-1	
	S-2	
	S-3	5
	M-1/2, <25% conifer	
	D-1/2	0
	W	0
N	0	
Weather - BEC Zone	AT, irrigated	1
	CWH, CDF, MH	3
	ICH, SBS, ESSF	7
	IDF, MS, SBPS, CWHsds1 & ds2, BWBS, SWB	10
	PP, BG	15
Historical Fire Occurrence Zone	G5, R1, R2, G6, V5, R9, V9, V3, R5, R8, V7	1
	G3, G8, R3, R4, V6, G1, G9, V8	5
	G7, C5, G4, C4, V1, C1, N6	8

Attribute	Indicator	Score
	K1, K5, K3, C2, C3, N5, K6, N4, K7, N2	10
	N7, K4	15
Slope	<16	1
	16-29 (max N slopes)	5
	30-44	10
	45-54	12
	>55	15
Aspect (>15% slope)	North	0
	East	5
	<16% slope, all aspect	10
	West	12
	South	15

Limitations

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

6.1.3 APPENDIX A-3: WUI RISK SPATIAL ANALYSIS METHODOLOGY

To determine the WUI Risk score, only the distance to structures is used. Buffer distance classes are determined (<200m, 200m-500m and >500m) but only for polygons that had a ‘high’ or ‘extreme’ Fire Threat score from the previous, assessment. To determine WUI Risk, polygons within 200 m of structures are rated as ‘extreme’, within 500 m are rated as ‘high’, and within 2 km are ‘moderate’. Distances over that are rated ‘low.’ WUI Risk Classes and associated assumed scores are summer below in Table 32.

Table 30. WUI Risk Classes and their associated summed scores

WUI Risk Class	Score
Very Low	0
Low	0-35
Moderate	35-55
High ⁴⁹	55-65

⁴⁹ WUI risk is only assessed for polygons with wildfire threat ratings of high or extreme.

Extreme	>65
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6.1.4 APPENDIX A-4: WILDFIRE THREAT PLOT LOCATIONS

Table 31 displays a summary of all Wildfire Threat Assessment plots completed during CWRP field work. The original threat plot forms and photos are attached as a separate document. The following ratings are applied to applicable point ranges: Low (0-48); Moderate (49 – 66); High (67 – 80); Extreme (>80).

Table 31. Wildfire Threat Assessment plot summary.

Name	Location	Score	Points
AYU-1	Ayum Creek Regional Park (CRD)	Low	33
BURR-1	Burr Creek Park (District of Sooke)	Moderate	48
CHART-1	Charters Creek Hatchery	Low	34
CLARK-1	District of Sooke - Crown Provincial / Unclassified	Moderate	42
COVE-1	Roche Cove Regional Park (CRD)	Low	39
COVE-2	Roche Cove Regional Park (CRD)	Low	35
DEER-1	Deerlepe Park (District of Sooke)	High	68
EAST-1	Silver Spray Drive	Low	40
EAST-2	East Sooke Regional Park	Moderate	51
FRED-1	Sooke River Park (District of Sooke)	High	61
GOOSE-1	Galloping Goose Regional Trail	High	44
GOOSE-2	Galloping Goose Regional Trail	High	43
GOOSE-3	Galloping Goose Regional Trail	High	49
GOOSE-4	Galloping Goose Regional Trail	High	48
HALL-1	Vancouver Island Public Library	High	59
LUD-1	Ludlow Park (District of Sooke)	Low	41
POT-1	Galloping Goose Regional Trail	High	63
RIV-1	Willow Park (District of Sooke)	High	62
RIV-2	De Mamiel Creek Park (District of Sooke)	Low	31
SCHOOL-1	Journey Middle School	Low	39
SEA-1	Sea to Sea Regional Park (CRD)	Low	33
STONE-1	Stone Creek Park (District of Sooke)	High	57

6.1.5 APPENDIX A-5: PROXIMITY OF FUEL TO THE COMMUNITY

Home and Critical Infrastructure Ignition Zones

Multiple studies have shown that the principal factors that contribute to structure loss by wildfire are the structure's characteristics and immediate surroundings. The area that determines the ignition potential of a structure is referred to (for residences) as the Home Ignition Zone or (for critical infrastructure) the Critical Infrastructure Ignition Zone.^{50,51} Both the Home Ignition Zone and Critical Infrastructure Ignition Zone include the structure itself and four concentric, progressively wider zones out to 30 m from the structure (Figure 6 below). More details on can be found in the FireSmart Manual.⁵²



Figure 6: FireSmart Home Ignition Zone (HIZ)

During extreme wildfire events, most home destruction results from low-intensity surface fires, usually ignited by embers. Embers can be transported long distances ahead of the wildfire, across fire guards and fuel breaks, and accumulate within the Home Ignition Zone or Critical Infrastructure Ignition Zone in densities that can exceed 600 embers per square meter. Combustible materials found within the Home Ignition Zones or Critical Infrastructure Ignition Zones to create fire 'pathways', allowing surface fires ignited by embers to spread and carry flames into contact with structures.

⁵⁰ Reinhardt, E., R. Keane, D. Calkin, J. Cohen. (2008). *Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States*. Forest Ecology and Management 256:1997 - 2006.

⁵¹ Cohen, J. *Preventing Disaster Home Ignitability in the Wildland-urban Interface*. Journal of Forestry. p 15 - 21.

⁵² <https://firesmartcanada.ca/> and <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/firesmart>

Because ignitability of the Home Ignition Zone or Critical Infrastructure Ignition Zone is the main factor driving structure loss, the intensity and rate of spread of wildfires beyond the community does not always correspond to a high potential of loss or damage. For example, FireSmart homes with low ignitability may survive high-intensity fires, whereas highly ignitable homes may be destroyed during lower intensity surface fire events.⁵¹ Extreme wildfire conditions do not necessarily result in WUI fire disasters.⁵³ It is for this reason that the key to reducing WUI fire structure loss is to reduce structure ignitability. Mitigation responsibility must be centered on structure owners. Risk communication, education on the range of available activities, and prioritization of activities should help homeowners to feel empowered to complete simple risk reduction activities on their property.

Community Zone

The Community Zone encompasses all non-Provincial Crown public land within the municipal boundary, that is beyond 30 metres from private structures.⁵⁴ Vegetation management planning and implementation on most Community Zone lands should be directed through a formal fuel management prescription developed by a forest professional with wildfire vegetation management within their scope of practice⁵⁴. Depending on the results of FireSmart Structure Ignition Zone assessments on individual structures, vegetation management may be required beyond 30 metres and up to 100 metres (FireSmart Priority Zone 3) on larger private parcels.³² Municipal parks, trails, and outdoor event spaces are all part of the Community Zone. Often Community Zone lands see high use by the public, which increases accidental ignition potential and risk to properties surrounding them.

Landscape Zone

The Landscape Zone encompasses provincial Crown lands that are located outside the municipal boundary. Vegetation (fuel) management planning and implementation is primarily the responsibility of the provincial government, working collaboratively to align landscape objectives with the CWRP objectives⁵⁴. Vegetation management planning and implementation in the Landscape Zone and on all forested provincial Crown lands must be directed through a formal fuel management prescription developed by a forest professional with wildfire vegetation management within their scope of practice.⁵⁴

Fire hazard in the WUI is partly dictated by the proximity of fuel to developed areas. Fuels closest to the community pose a higher hazard, compared to fuels that are further from values at risk. It is recommended that fuels closest to structures or developed areas are prioritized for treatment first, in order to reduce the risk closest to the community. Continuity of fuel treatment is an important

⁵³ Calkin, D., J. Cohen, M. Finney, M. Thompson. 2014. *How risk management can prevent future wildfire disasters in the wildland-urban interface*. Proc Natl Acad Sci U.S.A. Jan 14; 111(2): 746-751. Accessed online 1 June, 2016 at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3896199/>.

⁵⁴ Community Resiliency Investment. (2021). *FireSmart Community Funding and Supports Supplemental Instruction Guide*. Retrieved from: <https://www.ubcm.ca/funding-programs/local-government-program-services/community-resiliency-investment/firesmart-0>

consideration, which can be ensured by reducing fuels from the edge of the community outward. Table 32 describes the classes associated with proximity of fuels to the interface.

Table 32. Proximity to the interface

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

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

6.2 APPENDIX B: WILDFIRE THREAT ASSESSMENTS– WORKSHEETS AND PHOTOS

Provided separately as PDF package.

6.3 APPENDIX C: MAPS

Provided separately as PDF package.

6.4 APPENDIX D: GLOSSARY OF TERMS

Danger tree - A live or dead tree whose trunk, root system or branches have deteriorated or been damaged to such an extent as to be a potential danger to human safety.

Fire danger - A general term used to express an assessment of both fixed and changeable factors of the fire environment that determine the ease of ignition, rate of spread, difficulty of control, and fire impact.

Fire season - The period(s) of the year during which fires are likely to start, spread, and damage values-at-risk sufficient to warrant organized fire suppression; a period of the year set out and commonly referred to in fire prevention legislation.

Fuel - Fuel is any organic matter, living or dead, in the ground, on the ground, or in the air that can ignite and burn.

Available fuel - The quantity of fuel (in a particular fuel type) that would actually be consumed under specified burning conditions.

- *Fine fuels* - Fuels that ignite readily and are consumed rapidly by fire (e.g. cured grass, fallen leaves, needles, small twigs). Dead, fine fuels also dry very quickly.
- *Ground fuels* - All combustible materials below the litter layer of the forest floor that normally support smoldering or glowing combustion associated with ground fires (e.g., duff, roots, buried punky wood, peat).
- *Ladder fuels* - Fuels that provide vertical continuity between the surface fuels and crown fuels in a forest stand, thus contributing to the ease of torching and crowning (e.g., tall shrubs, small-sized trees, bark flakes, tree lichens).
- *Medium fuels* - Fuels too large to be ignited until after the leading edge of the fire front passes, but small enough to be completely consumed.
- *Surface fuels* - All combustible materials lying above the duff layer between the ground and ladder fuels that are responsible for propagating surface fires (e.g., litter, herbaceous vegetation, low and medium shrubs, tree seedlings, stumps, downed-dead roundwood).

Fuel management - Fuel management is the modification of forest structure to reduce forest fuel accumulations available to burn in a wildfire. The main goal of fuel management is improving public safety. This may include treatments such as thinning, spacing and pruning trees, and removal of needles and woody debris from the forest floor.

Fuel type - An identifiable association of fuel elements of distinctive species, form, size, arrangement, and continuity that will exhibit characteristic fire behaviour under defined burning conditions.

High risk activity - As defined in the Wildfire Regulation (s.1)

- a) mechanical brushing;
- b) disc trenching;

- c) preparation or use of explosives;
- d) using fire- or spark-producing tools, including cutting tools;
- e) using or preparing fireworks or pyrotechnics;
- f) grinding, including rail grinding;
- g) mechanical land clearing;
- h) clearing and maintaining rights of way, including grass mowing;
- i) any of the following activities carried out in a cutblock excluding a road, landing, roadside work area or log sort area in the cutblock:
 - i) operating a power saw;
 - ii) mechanical tree felling, woody debris piling or tree processing, including de-limbing;
 - iii) welding;
 - iv) portable wood chipping, milling, processing or manufacturing;
 - v) skidding logs or log forwarding unless it is improbable that the skidding or forwarding will result in the equipment contacting rock;
 - vi) yarding logs using cable systems

Interface fire - Interface fires are fires that have the potential to involve buildings and forest fuel or vegetation simultaneously.

Prescribed fire - The knowledgeable and controlled application of fire to a specific area to accomplish planned resource management objectives. These fires are managed in such a way as to minimize the emission of smoke and maximize the benefits to the site.

Slash - Debris left as a result of forest and other vegetation being altered by forestry practices and other land use activities (e.g., timber harvesting, thinning and pruning, road construction, seismic line clearing). Slash includes material such as logs, splinters or chips, tree branches and tops, uprooted stumps, and broken or uprooted trees and shrubs.

Spot fire - A spot fire is one that is less than 0.01 hectares (10 metres by 10 metres).

Wildfire - An unplanned fire - including unauthorized human-caused fires - occurring on forest or range lands, burning forest vegetation, grass, brush, scrub, peat lands, or a prescribed fire set under regulation which spreads beyond the area authorized for burning.

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