

Summer Village of Waiparous

Wildfire
Mitigation
Strategy

2024



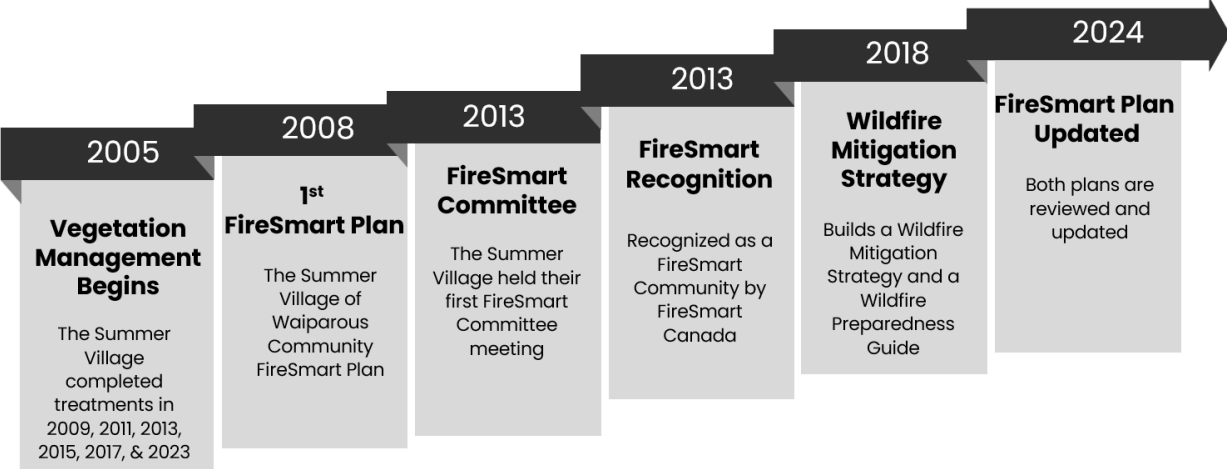
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Introduction

In 2008, the Summer Village of Waiparous developed a FireSmart plan that identified wildfire hazards and risks within the community and provided mitigative recommendations. The FireSmart plan was updated again in 2013 and 2018. The most recent FireSmart Plan includes a Wildfire Mitigation Strategy and Wildfire Preparedness Guide. The Summer Village has identified a need to update the community’s FireSmart plan to reflect updates that have occurred over the last five years. The illustration below provides a summary of the Summer Village’s FireSmart program since its inception in 2005.



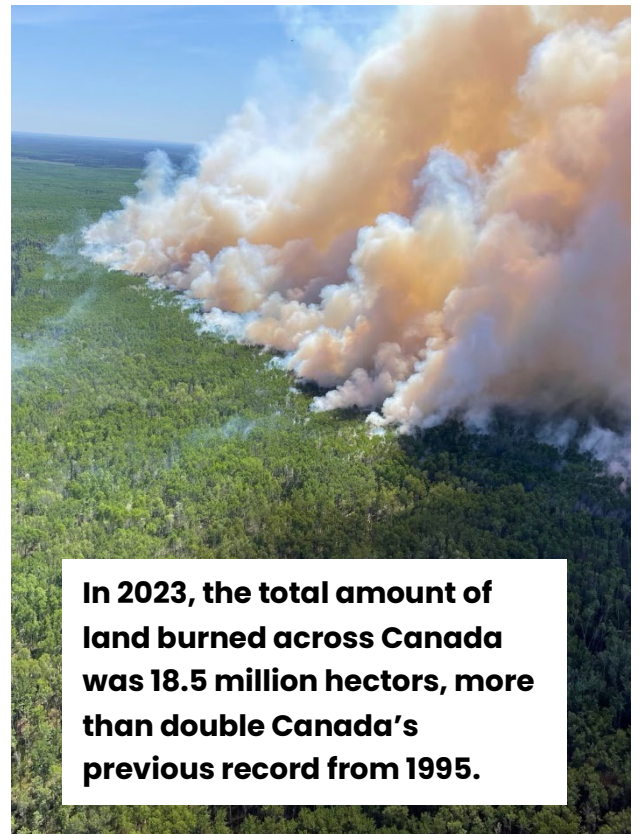
Objectives

The 2024 Wildfire Mitigation Strategy will complete the following objectives:

1. Update the Summer Village’s Hazard and Risk Assessment from 2018.
2. Evaluate each of the FireSmart recommendations from the 2018 Wildfire Mitigation Strategy.
3. Provide a set of FireSmart recommendations for the Summer Village to complete over the next 5 years.

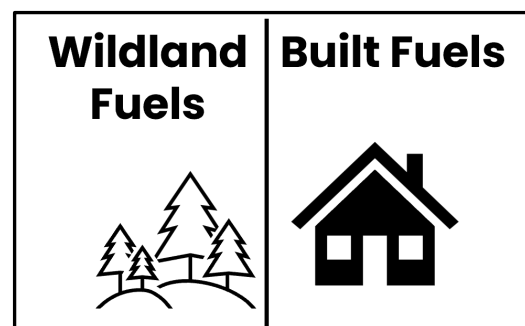
Wildfire Management

Wildfires are an important part of Alberta’s ecosystem. Much of Alberta’s landscape relies on wildfires to regenerate plant life and animal habitat. Without wildfire, the landscape would undergo diversity loss, and old growth will invite the proliferation of disease and insects. However, as communities extend further into forested areas, there is an increased risk of wildland urban-interface (WUI) fires. In the coming years, scientists project that wildfires are going to occur more frequently and with higher severity (Coogan, et al, 2019). In 2023, the total amount of area burned across Canada was 18.5 million hectares, more than double Canada’s previous record from 1995 (CIFFC, 2023).








Wildland Urban Interface (WUI)

The Wildland Urban Interface is described as the area where human development and the natural environment intersect (CIFFC, 2017). The fuels in the WUI are categorized as wildland fuels and built fuels. Wildland fuels include natural vegetation such as forests and grasslands. Built fuels refer to human-made structures such as residential homes and infrastructure. When combined, they create a complex mosaic of fuel that will cause unique burning characteristics that affect fire behaviour. By understanding the factors that influence fire behavior such as fuel-type, weather, and historical fire trends, we can assess the potential adverse effects of wildfire on communities and homeowners. It is essential that residents understand the wildfire hazards and risks in their communities to effectively prepare to withstand ember transport and minimize the likelihood of ignition.



Seven FireSmart Disciplines

The evaluation and recommendations will use the Seven FireSmart Disciplines as a framework throughout this report. The Seven FireSmart Disciplines are as follows:

	Education	Informing homeowners on how to reduce potential hazards and risks from wildfire.
	Emergency Planning	Developing FireSmart plans such as Wildfire Mitigation Strategies or Wildfire Preparedness Guides
	Vegetation Management	Reduce the intensity of wildfire by reducing, removing, or replacing wildland fuels.
	Legislation	Incorporating FireSmart into municipal legislation such as land-use planning, building legislation, or enforcement programs.
	Development	Integrate FireSmart into development standards and land-use planning to increase wildfire resiliency and infrastructure survivability.
	Interagency Cooperation	Promoting collaboration and partnerships between various agencies, organizations, associations, and levels of government.
	Cross-Training	Increase the capabilities of first responders by exposing them to a more diverse range of training and education.

*Although FireSmart principles can help reduce the threat of wildfire to communities and structures, they cannot remove the threat entirely.

Planning Area

The Summer Village of Waiparous is located within the MD of Bighorn along highway 40 (Forestry Trunk Road), approximately 30 kilometres northwest of Cochrane, Alberta (NW6 & SW7-Twp27-Rge6-W5M). Land ownership includes private and municipal lands. Private land is primarily comprised of residential single detached lots. There are 70 homes with an average lot size of 0.7 acres. There is a total of 10.3 hectares of municipal land within the community. The majority of this land has received FireSmart vegetation management. The Summer Village has a Fire Service Agreement with the MD of Bighorn, identifying MD of Bighorn Emergency Management as the primary wildfire response agency for the community. The next page provides a map of the Summer Village’s administrative boundaries.

Description of the Summer Village of Waiparous				
Community	Summer Village of Waiparous			
Location	30km northwest of Cochrane, Alberta along Hwy 40			
	Latitude	51°16'59.5"N	Longitude	114°50'19.8"W
Description	Number of Dwellings	70	Number of Residents	57
	Structures with Ignition Resistant Siding	25% to 50%	Structures with Ignition Resistant Roofing	>75%
	Wildfire Response	<ul style="list-style-type: none"> MD of Bighorn Emergency Services Alberta Wildfire – Calgary Forest Area (outside of Summer Village) 		
	Wildfire Planning & Legislation	<ul style="list-style-type: none"> Fire Safety Bylaw & Land Use Bylaw Wildfire Mitigation Strategy Wildfire Preparedness Guide Municipal Emergency Management Plan Social Services Plan 		

Summer Village of Waiparous Administrative Boundary

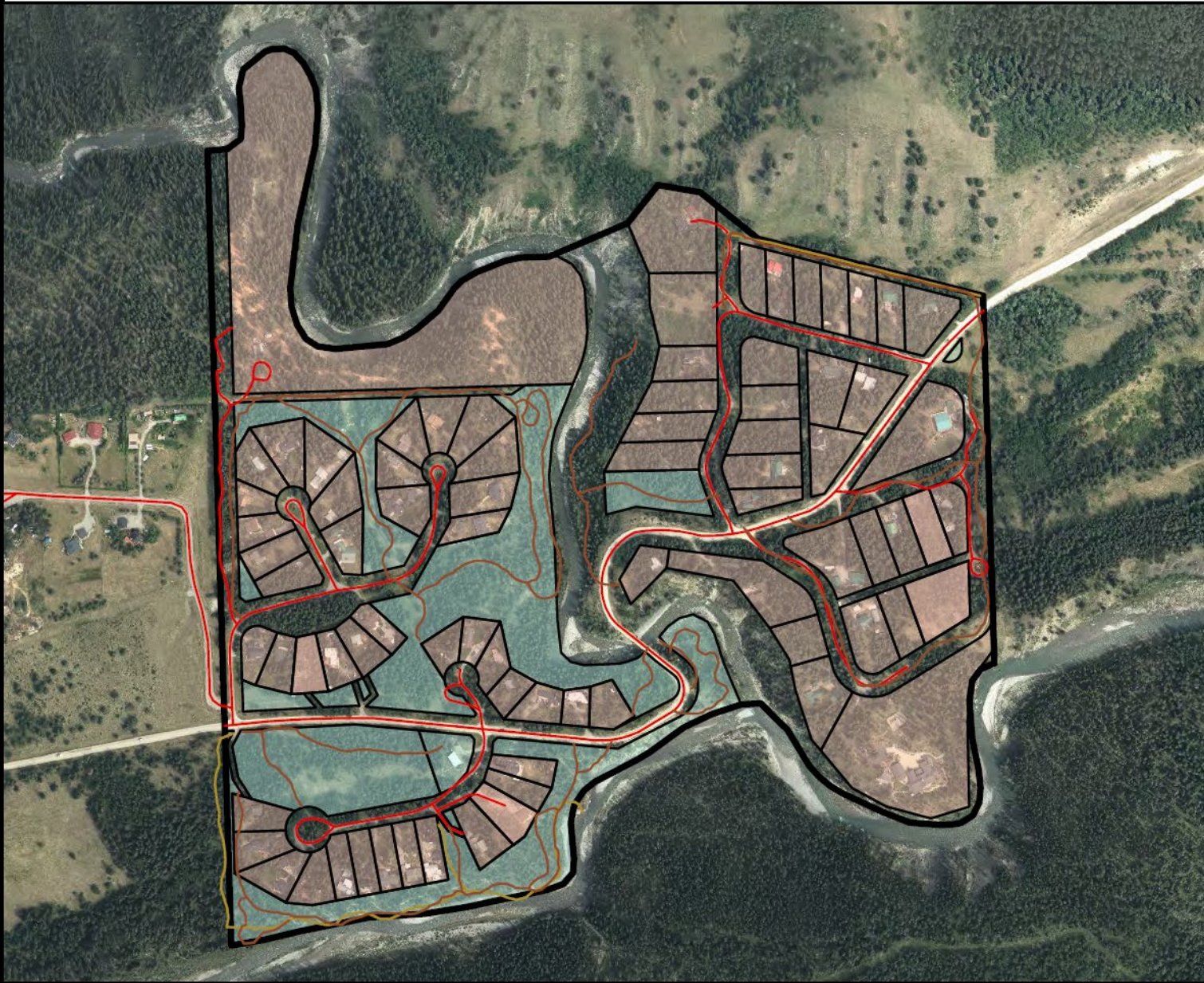
Legend

- Waiparous Boundary
- Road
- Trails
- Municipal Land
- Private Land

GIS data provided by
The Summer Village of Waiparous

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Stakeholders

Identifying and communicating with individuals and groups who may be impacted by wildfire is a key component to successful FireSmart planning. The following table provides a list of stakeholders to consider in future projects.

Agency	Name	Description
Provincial Government	Forestry and Parks	Wildfire prevention and response within the Forest Protection Area.
	Environment and Protected Areas	Support environmental conservation and sustainability. Land approvals, such as Temporary Field Authorizations (TFA).
	Municipal Affairs	Guidance on governance, safety standards, and funding support systems.
	Driving and Transportation	Construction and maintenance, signage installation/approvals, and traffic control on provincial roads.
	Ministry of Public Safety and Emergency Services	Support for emergency planning, response, and recovery (AEMA).
Municipal Government	SVW Administration & Elected Officials	Guidance on community planning, regulations, and FireSmart projects.
	SVW Planning and Development	Guidance on land use and residential development standards.
	M.D. of Bighorn Emergency Management	Primary emergency response agency for the Summer Village.
Residents and Associations	SVW Residents	Residents of the Summer Village of Waiparous
	Summer Village of Waiparous FireSmart Committee	Provide leadership and guidance for FireSmart projects within the community
	Summer Village of Waiparous Emergency Management Committee	Planning and mobilization in the event of an emergency within the Summer Village.
Business and Industry	FORTIS	Manage powerlines/poles and utility right of ways.
Non-Government Organizations	Forest Resource Improvement Association of Alberta (FRIAA)	Provide funding for FireSmart projects

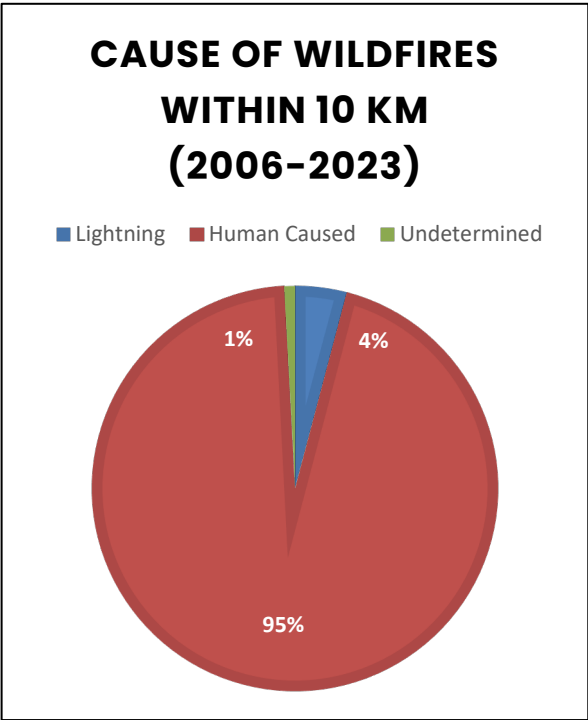
Hazard & Risk Assessment

Historical Fire Data

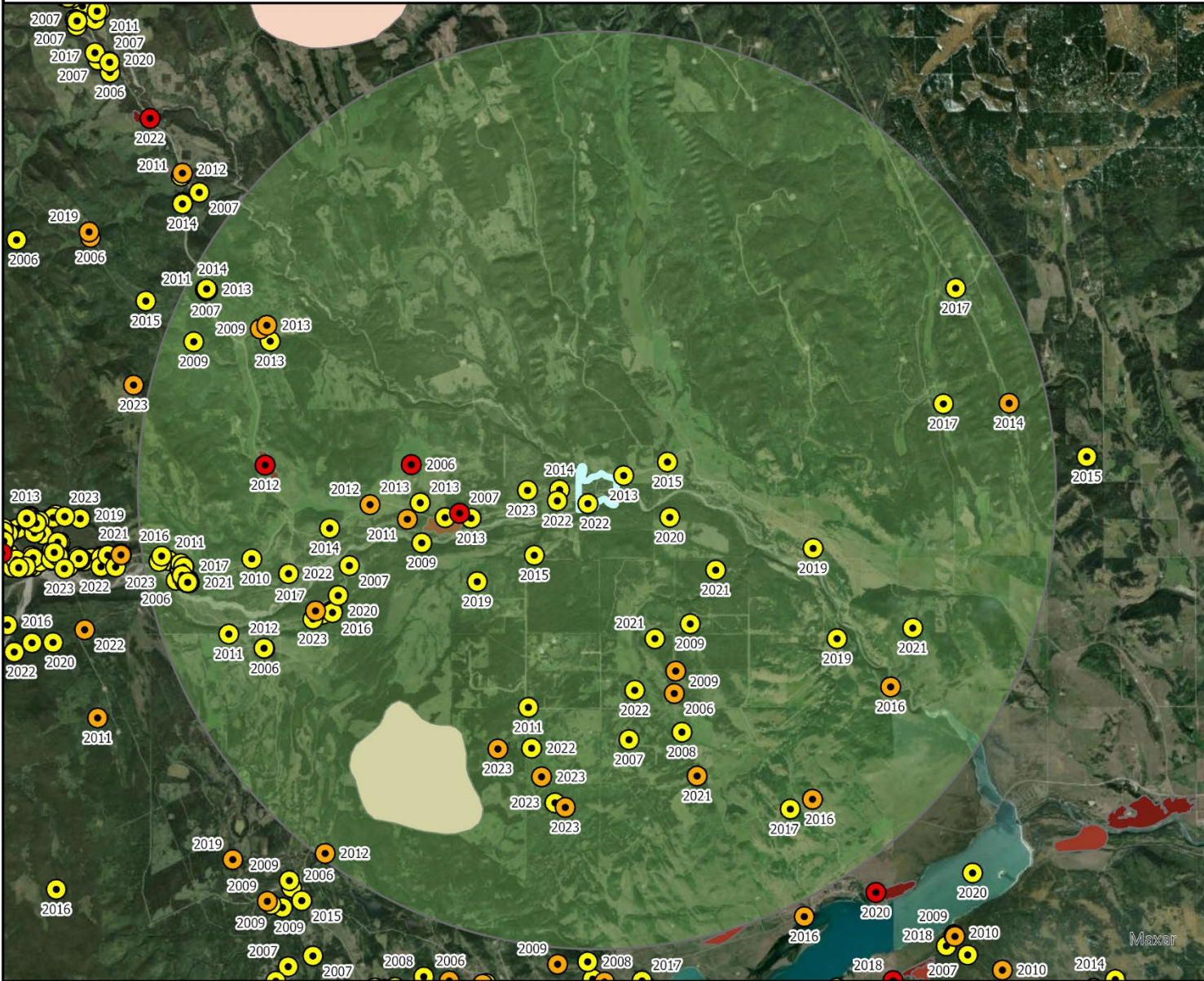
Historical wildfire data from Alberta Wildfire can provide additional information on the wildland fuel types and potential wildfire risk. Areas that have been burned recently will have a reduced fuel load and will generally burn at a lower intensity. The locations and causes of historical wildfires can also help identify areas where there is increased fire activity and whether wildfires are occurring naturally, or human caused.

Between 2006 to 2023, there have been one hundred and twenty-two wildfires within 10 kilometers of the Summer Village. The largest fire was a 28.5-hectare fire in 2007, located 2.5 kilometers west of the Summer Village. Most of these wildfires were campfires, or small grassfires (see table below). The investigation reports identified that ninety five percent of the fires were human-caused. A map of the historical fires is on the next page.

Wildfires Since 2006	
Government (Prescribed Fire)	1
Incendiary	6
Lightning	5
Power Line Industry	6
Prescribed Fire	1
Recreation	69
Resident	33
Undetermined	1
Total Number of Wildfires	122



Summer Village of Waiparous Historical Fires Within 10 km






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




 Waiparous Boundary

 10km Radius

Historical Small Wildfires

-  0 - 0.1ha
-  0.1 - 4 ha
-  >4 - 40 ha

Historical Large Wildfires

-  1931 - 1953
-  1954 - 1970
-  1971 - 1991
-  1992 - 2009
-  2010 - 2023

GIS Data provided by
The Summer Village of Waiparous &
Alberta Wildfire

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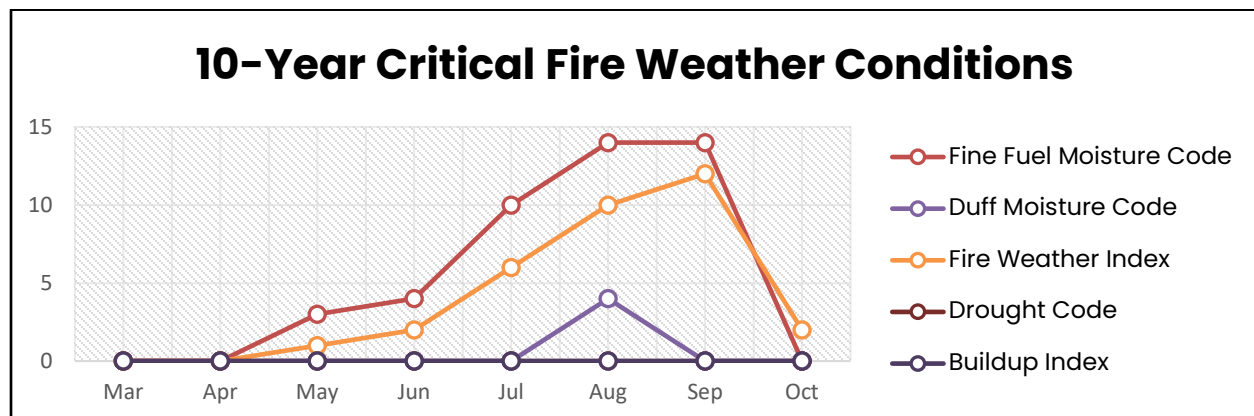
Fire Weather Analysis

The Summer Village is in the Montane ecozone within the Foothills Parkland Subregion (Alberta Parks, 2014). The area includes an extremely diverse topography and climate including rolling hills, grassland, and mountain ranges. Vegetation within the ecozone is primarily forested (86%), with the predominant species being White Spruce and Lodgepole Pine. Research has shown that the probability of fire spread days in the Montane ecozone increase rapidly after certain fire conditions are met (Wang, 2023). The table below provides a summary of the threshold conditions for the Montane ecozone and the associated Alberta Fire Danger Rating.

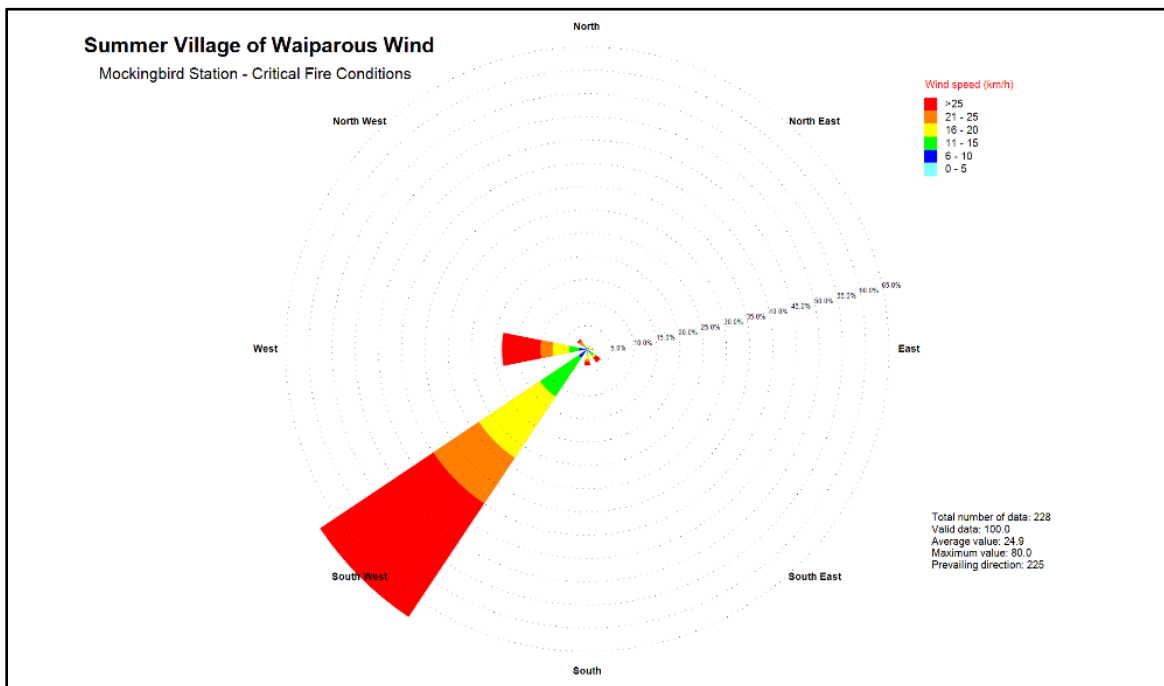
The Summer Village is most likely to experience critical fire weather conditions between August and September.

Critical Fire Spread Conditions in the Montane Ecozone		
Indices	Threshold	Fire Danger Rating
Fire Weather Index (FWI)	> 28.3	Very High to Extreme
Buildup Index (BUI)	> 103	Extreme
Initial Spread Index (ISI)	> 7.6	High to Extreme
Drought Code (DC)	> 481	Extreme
Duff Moisture Code (DMC)	> 68	Extreme
Fine Fuel Moisture Code (FFMC)	> 92	Extreme

The graph below shows the number of days where these critical fire conditions were met over the past ten years. The days have been categorized by the month in which they occurred to determine that the most hazardous time for the Summer Village occurs between August and September. The following graph summarizes the critical fire conditions from 2012 to 2022.



Analysis of weather from the Mockingbird tower has shown that the Summer Village experiences relatively consistent weather patterns during the fire season. Although the average precipitation is approximately 2 mm per day, the Summer Village is more likely to experience large amounts of precipitation in short durations of time. The average wind speed during critical fire conditions is 25km/h from the southwest with gusts averaging 50 km/h. The data suggests that due to the prevailing southeast winds, a fire is likely to spread northeast. The illustration below provides a summary of the winds during critical fire conditions (where the FWI is greater than 28).



Detection and Response

The Summer Village stores basic wildland firefighting equipment including pumps, hose, and hand tools. Additionally, there is a 20,000-gallon unpressurized water tank located at the Summer Village of Waiparous Community Building. The Summer Village has a service level agreement with MD of Bighorn Emergency Management to provide fire response services within the community. The MD of Bighorn has a wildfire mutual aid agreement with the Province of Alberta. If activated, the mutual aid agreement would provide the Summer Village with additional wildfire suppression support from the Ministry of Forestry and Parks. The majority of land located outside the Summer Village boundary is within the Forest Protection Area (FPA) and falls under the jurisdiction of Forestry and Parks. Forestry and Parks has a fire lookout tower approximately 20 kilometers northwest of the community.

Values at Risk

The Summer Village is primarily comprised of single residential detached homes. In addition to residential homes, other values-at-risk include a community building, and utility infrastructure (including power lines/poles and underground lines). Approximately 75% of the homes use ignition resistant roofing material, and 40% use ignition resistant siding. More information on the community's values at risk can be found in the Summer Village of Waiparous Wildfire Preparedness Guide.

Wildland Fuel Assessment

The wildland fuel types were categorized using high resolution multi-spectral satellite imagery. The wildland fuels were separated into coniferous fuels, deciduous fuels, grassland, water, and non-fuels. Non-fuel regions were further classified into infrastructure and barren land.

The Summer Village is primarily comprised of coniferous trees with clusters of deciduous. Grasslands are located on the west and northeast sides of the community. During the summer, much of the grassland fuel type will change from matted grass to standing grass as the grass recovers from the snowpack (NRC, 2019). Coniferous vegetation, primarily comprised of mature white spruce and lodgepole pine, presents a significant hazard for the community during the fire season. Coniferous vegetation is particularly hazardous due to the higher probability of crown fire and more intense fire behaviour (PIP, 2003). The analysis shows that almost 60% of the area is comprised of coniferous vegetation, with most coniferous fuels located around the homes and in the river valleys. The table below provides a summary of the landcover classifications around the community. The map on the next page provides an illustration of the landcover classifications.

Landcover Class	Percent Area	Total Area (ha)
Roads	1.7%	5.4
Buildings	0.8%	2.6
Water	2.7%	8.6
Needleleaf	59.1%	188.9
Broadleaf	11.8%	37.7
Barren Land	3.4%	10.8
Grassland	20.5%	65.6
Total	100.00%	319.6

Summer Village of Waiparous Wildland Fuel Types



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

— Waiparous Boundary

Wildland Fuel (FBP Type)

- Needleleaf (C-2)
- Broadleaf (D1/D2)
- Grassland (O1-A)
- Roads
- Buildings
- Water
- Barren Land

GIS data provided by
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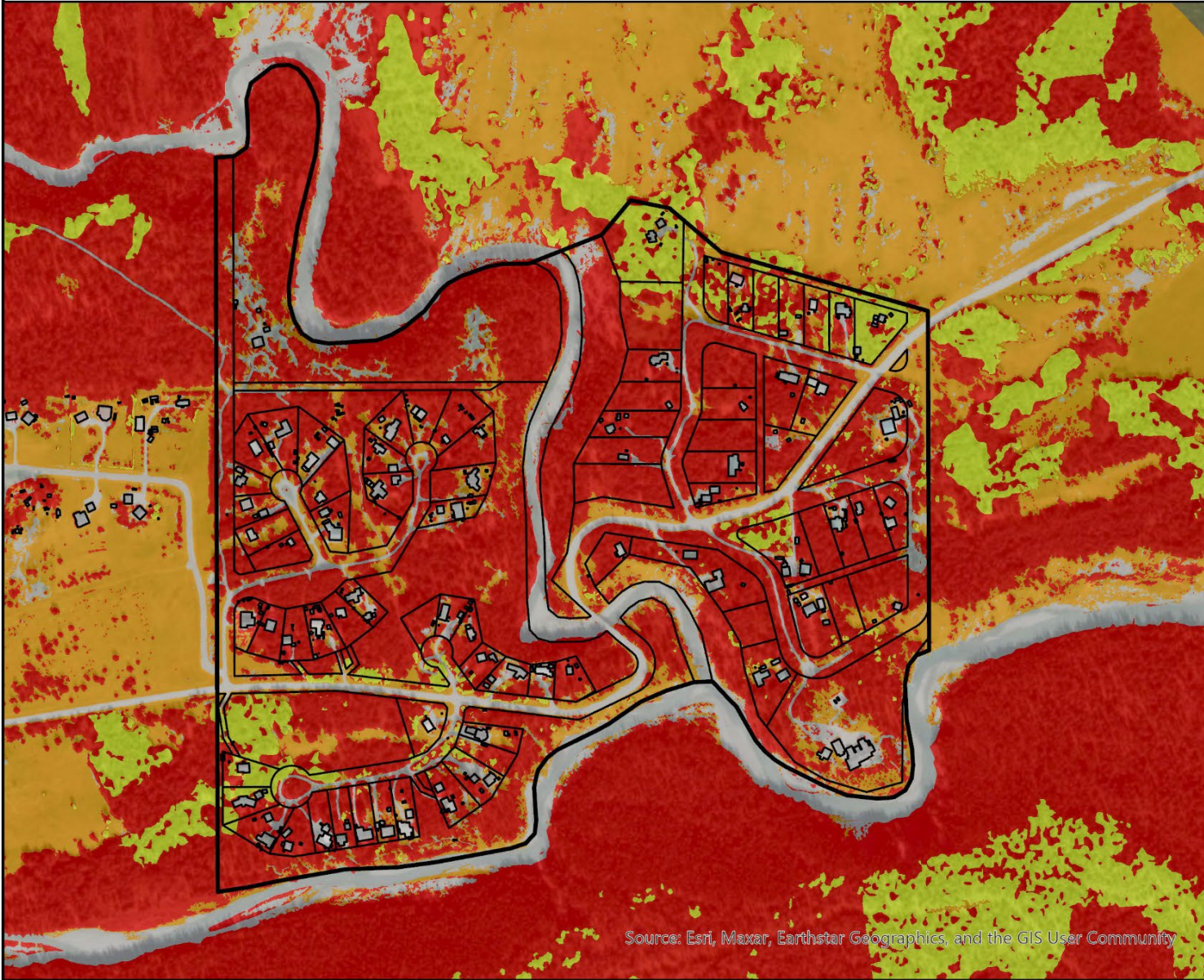
Wildfire Behaviour Potential

The wildfire behavior potential is used to quantify the wildfire hazard within the Summer Village by predicting a wildfire's intensity. Areas with coniferous wildland fuels present a high hazard for the community. These areas will likely generate highly active fire behavior where direct attack suppression strategies will have limited success. Suppression efforts in these regions may be limited to indirect attack, and helicopter/tanker drops. Fire behaviour potential is a useful metric to help identify and prioritize areas that require FireSmart mitigation. With appropriate vegetation management, fire intensity can be reduced to a manageable level and allow ground suppression techniques to be successful.

The fire behaviour potential in the Summer Village shows that over 80% of the area has a moderate-to-high fire hazard. This is due to the significant amount of coniferous fuels and grasslands around the community. The table below summarizes the wildfire behavior potential for wildland fuels surrounding the Summer Village of Waiparous. The next page displays a map of the Summer Village's fire behaviour potential.

Fire Danger Rating	Percent Area	Total Area (ha)
No Hazard	9%	27.4
Low Hazard	12%	37.7
Moderate Hazard	21%	65.6
High Hazard	59%	188.9

Summer Village of Waiparous Wildfire Behaviour Potential



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

— Waiparous Boundary

Wildfire Behaviour Potential

- No Hazard
- Low Hazard
- Moderate Hazard
- High Hazard

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Ignition Exposure

Exposure Assessments are new tool developed collaboratively between the University of Alberta, Alberta Wildfire Management Branch, and FireSmart Canada to identify wildfire hazard relative to a community's values (PIP, 2017). Exposure Assessments can help communities set priorities for mitigation activities in areas that are most hazardous to homeowners (Beverly et al., 2010).

Studies have shown that homeowners can reduce their wildfire risk by up to 75%.

Ember Transport

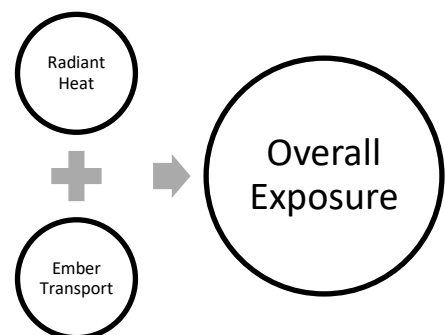
Falling embers that are transported by wind have the potential to create entirely new fires beyond the fire perimeter called spot fires (CIFFC, 2017). These spot fires can ignite both wildland fuels and built fuels. Between 50 – 90% of homes destroyed by wildfires are originally ignited by embers (Czajkowski et al. 2020). As the majority of wildland fuels adjacent to the Summer Village are coniferous, the overall risk of ember transport is extreme.

Radiant Heat

High temperatures caused by wildfire have the potential to ignite nearby built fuels or wildland fuels. The close proximity of coniferous fuels to homes within the Summer Village greatly increases the risk of ignition through radiant heat. Studies have shown that homeowners who take mitigative measures such as updating their homes with fire-resistant materials and reducing the amount of fuel within 10 metres of their home can reduce their wildfire risk by up to 75% (Czajkowski et al. 2020).

Overall Exposure

The map on the next page combines ember transport and radiant heat data to produce an overall summary of the areas with the highest exposure. The data emphasizes the importance of homeowners implementing FireSmart principles on their private property.



Summer Village of Waiparous Wildfire Ignition Exposure



Legend

— Waiparous Boundary

Ignition Exposure

- 0 (Low)
- 1
- 2
- 3
- 4
- 6 (Extreme)

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Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



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Evaluation & Mitigation

The Summer Village has successfully implemented 5 of 6 recommendations from the 2018 Wildfire Mitigation Strategy. The remaining recommendation related to vegetation management is currently underway. A detailed evaluation of the previous recommendations will be discussed in each FireSmart discipline.

The recommendations in this plan seek to provide the Summer Village with measurable outcomes over the next five years to help reduce the impact of wildfire. Appendix A provides a summary of the mitigation recommendations laid out over a five-year plan. The purpose of creating a 5-year action plan is to provide the Summer Village with measurable objectives over the next five years.

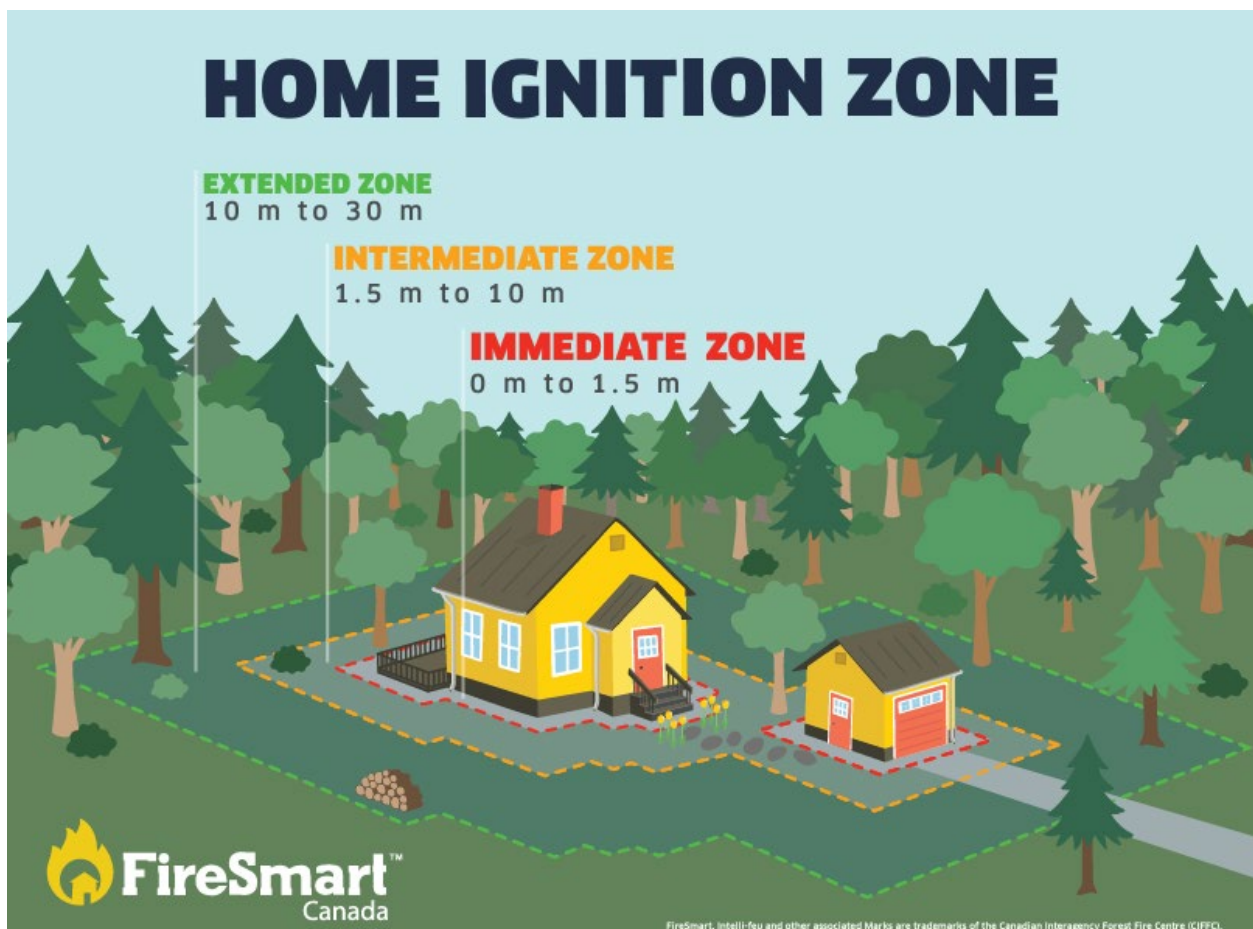
Summary of Recommendations from SVW 2018 WMG			
Number	FireSmart Discipline	Recommendations	Status
1	Vegetation Management of Priority Zone 2-3	Complete proposed Zone 2-3 fuel reduction and hazard reduction burning on Municipal and Provincial lands. Consider conducting fuel reduction on private-land northwest of the Summer Village.	Ongoing
2	Vegetation Management Maintenance	Conduct regular inspections of all completed fuel reduction blocks and hazard reduction burn areas and implement maintenance for those that require it.	Complete
3	Development Legislation & Policy	Include FireSmart standards in the updated Summer Village of Waiparous development legislation for new and retrofits/renovations of existing structures.	Completed in 2023
4	Public Education Program	Continue with all public education and engagement activities	Complete
5	Cross-Training	Conduct wildland, wildland/urban interface, and incident management cross-training	Completed in 2023
6	Emergency Exercises	Implement a table-top, functional and/or field exercise to test emergency management preparedness for a wildland/urban interface fire.	Completed in 2023

Vegetation Management

The primary purpose of vegetation management is to reduce the intensity of wildfire by reducing the overall fuel load. This can be achieved by removing, reducing, or replacing vegetation with a species that is less combustible. Vegetation management can help reduce a wildfire's intensity; however, it does not ensure structural survival under all hazard conditions.

FireSmart Home Ignition Zone (HIZ)

In 2022, FireSmart Canada updated their interface priority zones to reflect recent research. The new home ignition zones include the immediate zone, 0 to 1.5 meters, the intermediate zone, 1.5 to 10 metres, and the extended zone 10 to 30 metres surrounding the home.



Immediate Zone (0m – 1.5m)

The immediate zone extends around the entire home and deck as well as any other structures on the property such as detached garages or sheds. As much combustible material as possible should be removed from the immediate zone.

FireSmart recommendations in the immediate zone include:

- **Remove** flammable vegetation such as needled trees, dead grass or woody shrubs.
- **Create a non-combustible surface cover** around the home using material such as gravel, shale.
- **Remove** all dead and down forested vegetation
- **Remove** all combustible material piles such as firewood, lumber, etc. Store in a fire-resistant structure or greater than 10 meters from the home.
- **Complete regular maintenance** to ensure that combustible needles and leaves are removed regularly, and grass is maintained to 10 centimeters or less.

Intermediate Zone (1.5m to 10m)

The intermediate zone extends 1.5 meters to 10 meters around the entire home and detached structures. Research has shown that removing combustible vegetation within 10 meters of the home can greatly reduce the impacts of radiant heat from a wildfire. Below are FireSmart recommendations for the intermediate zone.

- **Thin or remove** all flammable forested vegetation such as needled trees or woody shrubs.
- **Remove** all combustible material piles such as firewood, lumber, etc. Store in a fire-resistant structure or greater than 10 meters from the home.
- **Prune** all limbs on needled trees to a minimum height of 2 meters from ground level.
- **Remove** all dead and down forest vegetation.
- **Complete Regular maintenance** to ensure that combustible needles and leaves are removed regularly, and grass is maintained to 10 centimeters or less.

Extended Zone (10m to 30m)

Managing vegetation in the extended zone can not only reduce the impacts of

radiant heat, but it can also help reduce the amount of ember transport that may cause spot fires within a community. If 30 meters extends beyond your property, work with neighbors in overlapping zones, or seek guidance from other stakeholders.

- **Thin** needed trees create a minimum of three meters of horizontal space between single or grouped tree crowns.
- **Remove** all limbs on needed trees to a minimum height of 2 meters from ground level.
- **Regularly** clean up accumulation of fallen trees, branches, needles, or dead grass to eliminate surface fuels.
- **Continue** these principles if your property extends beyond 30 metres.

Structures in forest areas should seek to treat all three zones at minimum. To further manage areas where there is a high to extreme hazard level due to wildland fuels or steep topography, consider treating all vegetation to 100 meters.

Immediate Zone

Although there are many homes within the Summer Village that meet the FireSmart recommended guidelines, most homes still do not. As of 2023, approximately 25% to 50% of homes meet the FireSmart recommended guidelines for the Immediate Zone.

Vegetation management recommendations include:

- Removal of mulch, non-maintained grass, woody shrubs, needed trees, and other combustible debris.
- Create a non-combustible surface cover around structures such as gravel, shale, or mineral soil.
- Move firewood piles and debris piles at least 10 meters from the structure or within a fire-resistant structure.

25% to 50% of homes meet the FireSmart guidelines for the Immediate Zone



Intermediate Zone

Due to the location of the Summer Village, there are a high number of needed trees within the intermediate zone of homes. There is therefore a high need for homeowners to manage vegetation within the immediate zone (see Wildfire Exposure Map for more details). In 2023, less than 25% of homes have treated the intermediate zone to FireSmart standards.

Less than 25% of homes meet the FireSmart guidelines for the Intermediate Zone

Additional vegetation management recommendations include:

- Consider removing all needed trees. At minimum, prune trees to 2 meters from ground level and thin to a minimum of three meters of horizontal space between the single or grouped tree crowns.
- Remove flammable vegetation such as juniper to reduce fire intensity.
- Regularly maintain grass to a maximum of 10 centimeters in height.
- Regularly clean up accumulations of branches, needles, and leaves.
- Remove all dead, damaged, or diseased trees.



Extended Zone

The majority of land located in the extended zone falls within the Summer Village’s municipal land. The 2018 wildfire mitigation strategy had the following two recommendations for the extended zone:

Previous Recommendation #1

Complete proposed Zone 2-3 fuel reduction and hazard reduction burning on Municipal and Provincial lands. Consider conducting fuel reduction on the private-land area in the northwest corner of the Summer Village	
Completed	Remaining
<ul style="list-style-type: none"> • Previously treated areas are undergoing additional thinning. • fuel reduction in the north-west corner of the summer village has been completed 	<ul style="list-style-type: none"> • Hazard reduction burning in proposed areas west of the community building. • Completion of proposed fuel reduction blocks

Previous Recommendation #2

Conduct regular inspections of all completed fuel reduction blocks and hazard reduction burn areas and implement maintenance for those that require it.
Completed

Previous Vegetation Management

The Summer Village has been completing vegetation management within municipal property since 2005. Previous vegetation management projects used several different prescriptions. Although many of these prescriptions do not meet the FireSmart Canada recommended guidelines, they have significantly reduced the wildland fuel density within the community. The community has chosen to balance the need for fuel reduction with other factors such as animal habitat, aesthetics, and visibility. Although this report does not include specific prescriptions, future prescriptions should seek to achieve the same balance. The map on the following page shows the previous vegetation management projects completed by the community. The darker areas indicate blocks that have received multiple treatments.

Summer Village of Waiparous Completed Vegetation Management



Legend

- Waiparous Boundary
- Road
- Waiparous Parcels
- Completed Hazard Reduction Burn
- Completed Vegetation Management

Year	Area (ha)
2007	0.81
2009	0.3
2011	4.08
2013	6.66
2015	6.33
2016	0.89
2017	5.16
2023	2.91
Total	27.14

GIS data provided by
The Summer Village of Waiparous

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Vegetation Management – Looking Forward

The purpose of this section is to provide guidance on vegetation management projects over the next five years. Proposed vegetation management areas have been divided into three milestones. Each milestone is discussed in more detail below. The map on the next page provides block boundaries for each milestone.

Milestone #1	Egress & Re-treatment
Rational	The first vegetation management milestone is to improve egress within the community. In the event of a wildfire, first responders will utilize the Summer Village’s roads for wildfire suppression and structure protection. Vegetation management along roadways will not only reduce wildfire intensity, but also improve access for first responders. As some of the egress routes have already been treated, this milestone includes new treatment areas and re-treatment areas.
Milestone #2	Ghost River Fuel Reduction
Rational	Analysis of wildland fuel types identified significant coniferous vegetation along the Ghost River. In the event of a wildfire, this area is predicted to display extreme fire behaviour. Reducing the wildland fuels along the Ghost River can lead to a reduction in wildfire intensity. A reduction in wildfire intensity is especially important in this area since homes are located adjacent to the river on both sides.
Milestone #3	Boundary Fortification
Rational	The analysis of weather over the last ten years showed that winds are generally from the southwest. This data suggests that additional fire guard fortification should be considered on the west side of the community. Completion of this milestone involves vegetation management on Summer Village land, private land, and Municipal land. Vegetation management strategies should include fuel reduction, fuel removal, and hazard reduction burning.

Summer Village of Waiparous 5 - Year Vegetation Management Plan



Legend

— Waiparous Boundary

□ Waiparous Parcels

Milestone

■ Egress & Re-Treatment

■ Ghost River Fuel Reduction

■ Boundary Fortification

GIS data provided by
The Summer Village of Waiparous

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CONSULTING

Education

The success of implementing wildfire mitigation strategies relies heavily on the participation of Summer Village residents. For the majority of homeowners within the Summer Village, the intermediate zone and immediate zone falls within private property. New research has emphasized the importance of protecting the intermediate zone and immediate zone from radiant heat and fire embers (PIP, 2017). Providing resources such as Advanced FireSmart Home Assessments, Open Houses, and FireSmart Manuals can equip homeowners with tools to reduce the impacts of wildfire. FireSmart Canada provides a wide range of resources to assist communities with educating homeowners on the importance of FireSmart. Some of these resources include:

- [FireSmart Begins at Home Guide](#)
- [FireSmart Last Minute Checklist](#)
- [FireSmart Guide to Landscaping 2nd Edition](#)
- [FireSmart Home Ignition Zone Self-Assessment](#)

Previous Recommendation #4

Continue with all public education and engagement activities to ensure that residents are aware of options available to reduce the hazard and risk to their properties and are engaged and assisted to take action in their own backyards and on community lands.
Completed



Education: Moving Forward

On February 11th, 2024, the Summer Village of Waiparous FireSmart Committee developed the following list of education deliverables:

- Use non-combustible/fire-resistant roofing, siding, decking, and fencing materials for new structures or renovations of existing structures
- Skirt the undersides of your decks and porches to reduce the chances of fire getting underneath and ensure that decks greater than 2 metres from ground-level have a non-combustible surface cover underneath and surrounding for a minimum of 1.5 metres
- Priority Zone 1-2 (0-30m from structure) is the most important area for residents to conduct FireSmart vegetation management. Priority Zone 1 should not support wildfire of any kind. Use fire-resistant trees and shrubs for landscaping and remove flammable species such as spruce, pine, and juniper
- Maintain a non-combustible surface cover surrounding your home
- Do not use bark mulch or wood chips for landscaping
- Remove ground litter, down, and dead trees annually
- Store all combustible firewood/debris piles a minimum of 10 metres from yours and your neighbour’s structure.
- Priority Zone 2-3 vegetation management completed by the Summer Village has reduced but not removed the wildfire threat. Additional thinning and hazard reduction burning is required and will continue on new and completed blocks.
- Completion and maintenance of FireSmart mitigative measures on your lot protects both yours and your neighbours’ properties and acts to build the entire community as a FireSmart fuel break.

The following table provides FireSmart Education recommendations over the next five years:

Milestone #1	Provide Residents with the option to receive FireSmart Advanced Home Assessments every two years
Rational	As many of the residents have not received an Advanced FireSmart Home Assessment, consider providing residents with multiple opportunities to have an assessment over the next five years.
Milestone #2	Hold a FireSmart Community Preparedness Day Annually
Rational	An annual event will provide residents with regular education on

	FireSmart principles, assist with municipal FireSmart projects, and maintain the current FireSmart Neighbourhood Recognition status.
Milestone #3	Maintain FireSmart Canada Neighbourhood Recognition
Rational	For more information on maintaining FireSmart recognition visit https://firesmartalberta.ca/neighbourhood-recognition-program/

Development & Legislation

Post-fire studies, such as the research completed after the Fort McMurray Fire in 2016, identified the importance of building homes with fire-resistant material (Westhaver, 2017). Structures built with fire-resistant roofing, siding, and decking material are less likely to ignite from airborne firebrands or radiant heat. Integrating FireSmart principles into legislation, bylaws, and development standards is a key step towards protecting communities from wildfire. FireSmart principles are also applicable to land use requirements such as maximum grass height, fire pit procedures and requirements, and address sign standards. Addressing these issues not only helps protect the Summer Village from incoming wildfires, but it will also reduce the probability of a wildfire starting within the community. FireSmart Canada provides a wide range of resources to assist homeowners with building and development. Some of these resources include:

- [FireSmart Guide to Landscaping 2nd Edition](#)
- [FireSmart Home Development Guide](#)
- [Wildfire-Resilience Best Practices for Home Construction](#)

Over 80% of the homes in the Summer Village have ULC-rated shingle and metal roofs, however, only 40% of the homes had fire-resistant siding such as stucco or fire-cement board. The remaining 60% had combustible siding such as wood or vinyl. The large majority of homes have wooden decks with exposed undersides. Due to FireSmart education through the FireSmart Advanced Home Assessments and workshops, there has been an increase fire-resistant building material since the last community assessment was completed in 2018.

**There is an increase
fire-resistant
building material on
homes since the last
community
assessment in 2018.**



Replacement deck boards that were rotten or contained large cracks



Removal of combustible debris and vegetation under decks

In 2023, the Summer Village updated its Fire Safety Bylaw (No. 156-23). These updates included legislative requirements for fires within the Summer Village including open fires, fire pits, and fire permits. Bylaw No. 121-14 has been updated with Bylaw 160-24 to include the use of fire-resistant sign posts. Additionally, in 2024, the Summer Village updated its Land Use bylaw (No. 157-23) to reflect the recommendations proposed in the 2018 Wildfire Mitigation Strategy. A Summary of the updates is in the table below.

Summer of Village of Waiparous Land Use Bylaw (No. 157-23) Review		
Recommendation	Status	Bylaw Reference
Setbacks	Meets recommended guidelines	Section 21.7
Access Standards	Meets recommended guidelines	Section 24.4.c
Roofing Materials	Meets recommended guidelines	Section 9.3
Siding Materials & Standards	Meets recommended guidelines	Section 9.6
Decking Materials & Standards	Meets recommended guidelines	Section 9.9
Fencing Materials	Meets recommended guidelines	Section 11.5

Development & Legislation: Moving Forward

The Summer Village completed all the Development & Legislation recommendations from the 2017 Wildfire Mitigation Strategy. This has put the community in a very good position moving into the next five years. However, there are minor improvements that

can be implemented to strengthen the Summer Village’s FireSmart program. The recommendations are listed below:

Milestone #1	Create a standardized Fire Permit
Rational	Consider using the Alberta Wildfire Fire Permit as a template for a Summer Village of Waiparous Fire Permit.
Milestone #2	Review Summer Village FireSmart Legislation
Rational	To ensure legislation remains up to date with FireSmart principles, review all Summer Village legislation related to FireSmart including the Land Use Bylaw, Fire Safety Bylaw, and Sign Bylaw.

Interagency Cooperation & Cross-Training

In 2022, the Summer Village conducted a tabletop exercise to test its emergency planning. The exercise involved stakeholders from the RCMP, Alberta Wildfire, MD of Bighorn, and AEMA. The exercise identified action items that should be addressed. Several of these action items have been included in the *moving forward* section.

Previous Recommendation #5

Conduct wildland, wildland/urban interface, and incident management cross-training based on the needs of the Summer Village of Waiparous and partners.
Completed

Interagency Cooperation & Cross Training: Moving Forward

Milestone #1	Test community pump/hose annually
Rational	Testing wildfire equipment every year helps ensure that residents are familiar with how to operate the equipment. It also ensures that everything is in working condition in the event of a wildfire.
Milestone #2	Complete Hazard Reduction Burning
Rational	Not only is hazard reduction burning a vegetation management tool, but it is also an opportunity to work with other agencies on a controlled fire. This will help improve relationships and communications in the event of an uncontrolled wildfire.

Milestone #3	Complete a mock disaster exercise
Rational	After completing the tabletop exercise in 2022, the next step is to host a mock wildfire exercise that utilizes pump, hose, and sprinklers. Consider inviting the MD of Bighorn, AEMA, and Alberta Wildfire. As suggested at the tabletop exercise, also consider inviting Cochrane Search and Rescue to assist with evacuations.
Milestone #4	Train additional residents to assist with wildfire response
Rational	Another action item identified in the 2022 Tabletop exercise is that more trained volunteers are needed to fill various functions in the event of an emergency. Consider encouraging additional residents to take training through AEMA and the Hinton Training Center.
Milestone #5	Complete a Wildfire Tabletop exercise in collaboration with the MD of Bighorn
Rational	Due to the neighboring jurisdictions between the Summer Village of Waiparous and the MD of Bighorn, a tabletop exercise focused on the activation of an Emergency Coordination Center (ECC) will identify opportunities and areas for improvement for each agency.
Milestone #6	Complete a Regional Emergency Management Agreement with the MD of Bighorn
Rational	Regional agreements can improve the line of communications between jurisdictions and establish a clear set of duties and obligations for emergency preparedness and response.

Emergency Planning

There are two primary ways to engage in emergency planning within the Summer Village. First is to build specific wildfire prevention and mitigation plans that will aid the community in reducing the impact of wildfire. The second is to address interface characteristics and response in existing plans, policies, and legislation.

Previous Recommendation #6

Implement a table-top, functional and/or field exercise to test emergency management preparedness for a wildland/urban interface fire.
Completed

FireSmart Planning

FireSmart Canada encourages communities to build a **Wildfire Mitigation Strategy (WMS)** and **Wildfire Preparedness Guide (WPG)** to assist communities with wildfire planning. The FireSmart Guidebook to Community Planning recommends reviewing these plans annually and updating them every 5 years.

Municipal Emergency Planning

In 2015, the Summer Village built a **Municipal Emergency Management Plan** and a **Social Services Plan** to provide guidance on tasks such as activating an incident command team, establishing interagency communication, and facilitating evacuations. Other municipal planning that can assist in the event of a wildfire include a Sprinkler Protection Plan, Evacuation Plan, and Wildland Urban Interface (WUI) Plan. Due to the size of the Summer Village, these plans are not recommended at this time, however, ensure that the essential components of these plans are included in the Summer Village's current planning documents.

Emergency Planning: Moving Forward

Milestone #1	Review the WMS and WPG Annually
Rational	The Wildfire Mitigation Strategy and Wildfire Preparedness Guide should be reviewed by the Summer Village Annually to ensure that any major changes or updates are captured by both plans.
Milestone #2	Update the Municipal Emergency Management Plan & Social Services Plan
Rational	The Tabletop exercise in 2022 identified that both plans should be updated. Updates should include more focus on evacuation and re-entry protocols. Consider updating the plan to work in conjunction with the MD of Bighorn Evacuation Plan.
Milestone #3	Provide additional residents with the Alberta Emergency Alert Training
Rational	Providing the Alberta Emergency Alert Training to at least two more residents will help ensure that in the event of an emergency, there is a resident within the village who can activate an emergency alert if necessary.

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Appendix A

5-year FireSmart Action Plan

Summer Village of Waiparous 5-Year FireSmart Action Plan



	2024	2025	2026	2027	2028
Vegetation Management 	Egress and Re-treatment				
			Ghost River Fuel Reduction		
	Boundary Fortification				
Education 	FireSmart Advanced Home Assessments		FireSmart Advanced Home Assessments		FireSmart Advanced Home Assessments
	FireSmart Community Preparedness Day				
	FireSmart Neighborhood Recognition Program				
Development & Legislation 		Update Sign Bylaw			
	Develop Fire Permit Template				
				Review FireSmart Legislation	
Interagency Cooperation & Cross-Training 	Test Community Pump/Hose Annually				
		Complete Mock Disaster Exercise		Complete Tabletop Exercise with MD	
	Train Additional Residents to Assist with Wildfire Response				
	Complete Hazard Reduction Burning				
	Complete Regional Emergency Management Agreement				
	Review the Wildfire Mitigation Strategy and Wildfire Preparedness Guide Annually				
Emergency Planning 	Review the Wildfire Mitigation Strategy and Wildfire Preparedness Guide Annually				
		Update the Municipal Emergency Management Plan & Social Services Plan			
	Provide Additional Residents with the Alberta Emergency Alert Training				