



Community Wildfire Protection Plan

Sambaa K'e



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1 Introduction

In 2011, a Community Wildfire Protection Plan (CWPP) was developed for the Smbaa K'e First Nation to address the hazard and the risk to the community from wildfire. That CWPP was developed to provide practical and operational wildland /urban interface (WUI) risk mitigation strategies to reduce the threat from wildfire to the community.

The original CWPP was developed by Montane Forest Management Ltd in cooperation with the Government of the Northwest Territories (GNWT) and Samba K'e.

In 2018 the GNWT, Department of Environment and Natural Resources (ENR) updated the Smbaa K'e CWPP by using the most recent information, science and expertise available. This included using standardized FireSmart assessment protocols and mitigative measures were developed based on the 7 disciplines of FireSmart.

1. Vegetation Management
2. Development
3. Legislation
4. Public Education and Engagement
5. Inter-Agency Cooperation
6. Cross Training
7. Emergency Planning

The update included:

- The FireSmart mitigation efforts completed around the community
- The change in hazard around the community.
- New recommendations or modification to existing recommendations

Smbaa K'e, in cooperation with ENR, implemented some of the original recommendations, but there is still work to do.

The update includes recommendations to assist in setting priorities to reduce the threat from wildfire. It is important to note that while implementing these recommendations will reduce the threat from wildfire to structures, it will never completely remove the threat.

This plan should be reviewed regularly to ensure that it remains a priority to the community and its residents.

2 Planning Area and Stakeholders

The planning area includes all lands within two kilometres of the developed areas in Smbaa K'e (Map 1).

Stakeholders involved in the planning process included:

- Government of the Northwest Territories, Environment and Natural Resources
- Smbaa K'e First Nation

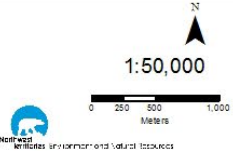
Land status authority is varied and is represented by the following (Map 1):

- Commissioner
- Municipal
- Private
- Territorial

Map 1



Smbaa K'e Land Status Authority



3 Hazard & Risk Assessment

In the original 2011 CWPP a hazard and risk assessment was undertaken to determine the potential impact wildfire could have on the community. This was based on an analysis of the historical wildfire ignition sources, fire incidence and the wildland fire potential of the forest surrounding the community.

3.1 Wildfire Ignition Potential

The assessment of recent fire incidence was completed using historical fire data from ENR for the ten year period from 2009 to 2018. (Map 2)

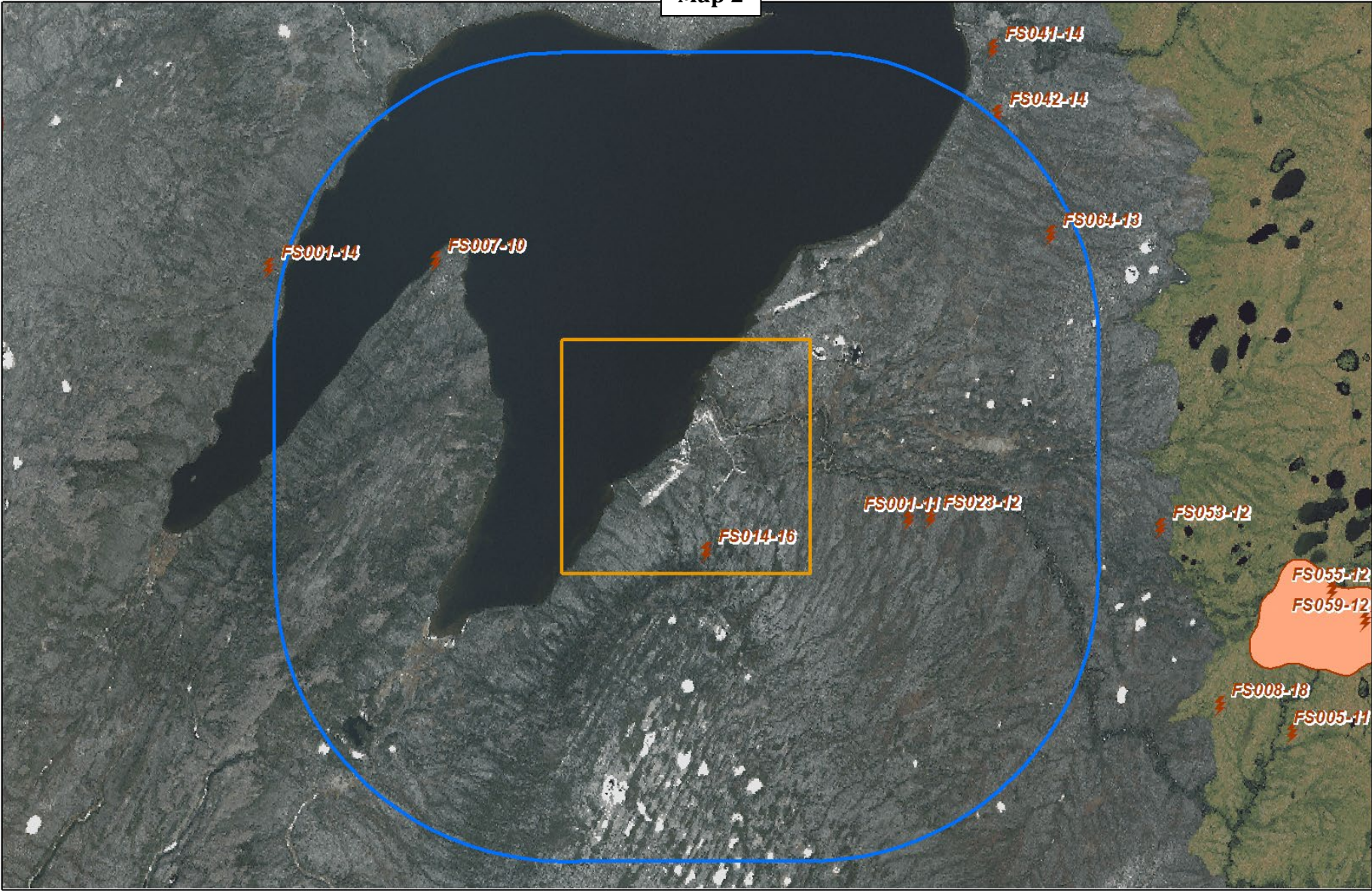
Data within a 10 kilometre (km) radius of the planning area boundary indicates that wildfire incidence is moderate. There have been five wildfires within the 10km radius in the last ten years. An additional eight wildfires were recorded just outside of the 10km radius, in the Sambaa K'e area.

Table 1: Fire Incidence by Cause (2009 – 2018)







General Cause	Number of Fires	Percent of Total
Human-Caused	0	0
Lightning-Caused	5	100
Totals	5	100

Wildfire incidence in the planning area is moderate and is predominantly lightning-caused.


Map 2



Smbaa K'e Ten Year Fire History

-  Planning Area 10km Buffer
-  Planning Area
-  Large Fire History
-  Human Caused
-  Lightning
-  Unknown

Northwest Territories Environment and Natural Resources



0 1,250 2,500 5,000 Meters

1:175,000

N

3.2 Wildfire Behaviour Potential

3.2.1 Forest Fuel Types

Analysis of the forest fuels surrounding Sambaa K'e were completed in 2011 and indicated the main fuels to be mainly dominated with boreal spruce (C-2) with scattered patches of deciduous (D-1), cured grass (O1) and mixedwood (M-1) fuel types. Each of these fuel types can present hazard to interface structures based on fuel moisture conditions and time of year. The forest fuels have not changed significantly since that time.

The new airstrip and access road and the fireguards west of the community provide good breaks from the C-2 fuel types to the south and west.

Fuel types within the developed area are primarily non-fuel, deciduous, or cured grass resulting in minimal wildfire threat to structures.

Forest fuel types and fire weather data indicates a High potential for intense wildfire exists in C-2 fuels surrounding Sambaa K'e however fuels within the community are primarily non-fuel, deciduous, or cured grass resulting in minimal wildfire threat to structures.

3.3 FireSmart Hazard Assessments

FireSmart assessments of developed areas and adjacent fuels were completed in 2011 and indicated that there is a high potential for intense landscape-level wildfire in the lands surrounding Sambaa K'e .

However, FireSmart hazard is rated **Low to Moderate** for the developed areas of Sambaa K'e, due to the non-fuel, deciduous, and cured-grass fuel types, primarily non-combustible exterior structure materials (asphalt shingle roofing/wood siding), and adequate Zone 1a and Zone 1 defensible space for the majority of structures.



The threat of significant structure loss from wildfire in Smbaa K'e is predominantly Low to Moderate due to the wildland fuel types, structural materials, and Zone 1a and Zone 1 defensible space standards within the community.

4 Vegetation Management Options

The goal of vegetation management is to create a clear space between the community and the forest to reduce the intensity and rate of spread of wildfire approaching or leaving the community. Vegetation management options are proposed at the appropriate scale, based on hazard and risk, to reduce the threat of wildfire to developed areas. While fuel modification projects reduce the threat of wildfire to developments, they do not ensure structure survival under all hazard conditions.

Vegetation management consists of one or any combination of the following options:

- Fuel removal (remove trees)
- Fuel reduction (thin and prune trees)
- Species conversion (plant less flammable trees)

Complete descriptions of the methods included in each of the above options are included in the link:

<https://www.firesmartcanada.ca/mdocs-posts/firesmart-priority-zones-2017/>

FireSmart standards refer to the interface priority zones with vegetation management for interface structures recommended in Zones 1 and 1a, 2 at a minimum and in Zone 3 based on hazard and risk.

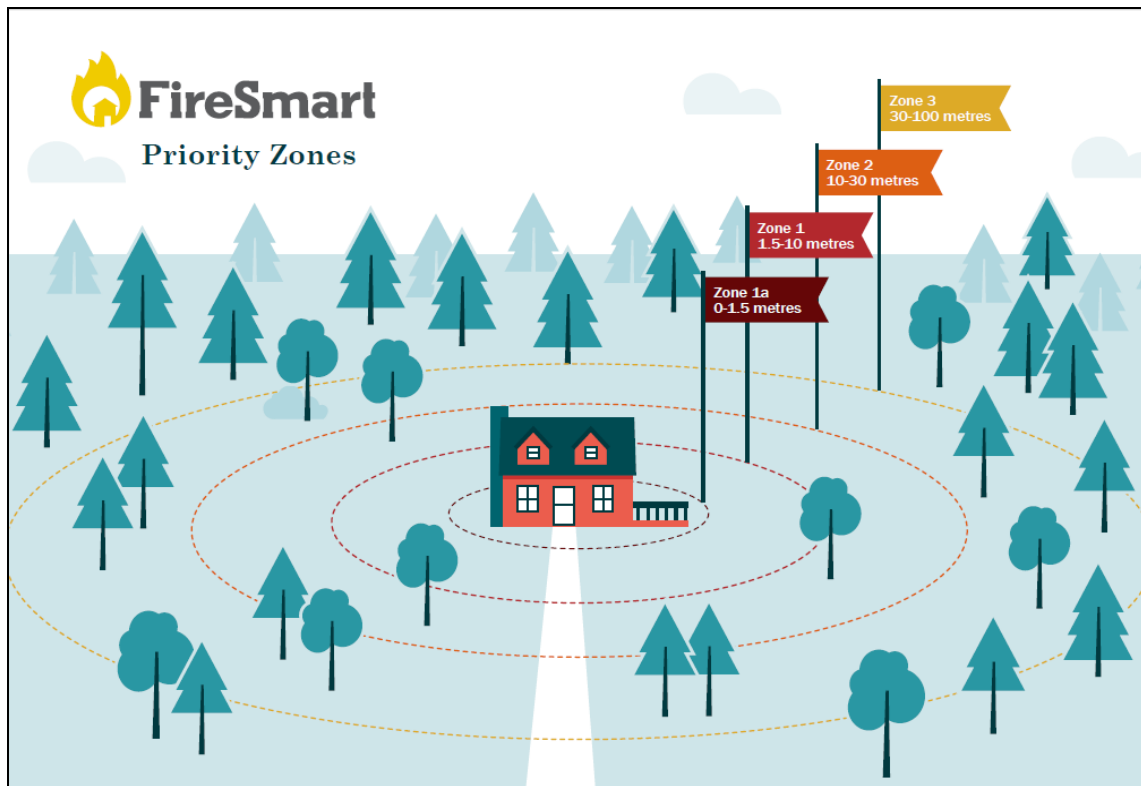


Figure 1 – Interface Priority Zones (PIP, 2017)

4.1 Existing Vegetation Management

Fuels removal and reduction projects have been completed in the planning area by the GNWT ENR Department (Map 3 & Table 3).

Table 3: Existing Vegetation Management Areas

Name	Area (ha)	Year	Agency	Comments
Fire Guard South	2.4	1995	GNWT	Maintenance will be required
Fire Guard West	3.7	2010	GNWT	Maintenance will be required
ENR Firebase	0.8	2010	GNWT	Crews continue to maintain
East of new airstrip	1.2	2010	GNWT	Maintenance will be required

Old fireguards constructed in 1995 and new fireguards constructed in 2010 provide excellent containment lines for wildfire advancing from the south or west. All guards are approximately 30 metres wide.



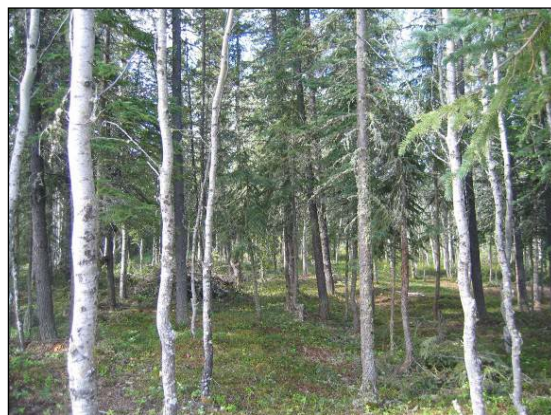
Sambaa K'e 1995 Fire Break



Sambaa K'e 2010 Fire Break



Sambaa K'e Fire Base



ENR constructed a new firebase west of the community and has been completing fuels reduction as time permits.

4.2 Proposed Vegetation Management

4.2.1 Zones 1a (0-1.5 metres)

Zone 1a vegetation management is **inadequate** for many of structures due to encroachment of native grass fuels.

FireSmart Zone 1a vegetation management options include:

- Creating a noncombustible zone around structures by clearing vegetation and combustible material down to mineral soil within of structures.
- Use noncombustible materials in this critical zone of 1.5 metres directly adjacent to your home such as gravel, bricks or concrete.
- Woody shrubs, trees or tree branches should be avoided in this zone and any that are present should be properly mitigated.

4.2.2 Zone 1 (1.5-10m)

Zone 1 vegetation management is predominantly adequate throughout the area except for scattered structures with lack of adequate Zone 1 defensible space from native grass fuels (O1).



FireSmart Zone 1 vegetation management options include:

- Removal of flammable forest vegetation within 10 metres of structures.
- Removal of all coniferous ladder fuels (limbs) to a minimum height of 2 metres from ground level on residual overstory trees.
- Removal of all dead and down forest vegetation from the forest floor.
- Increased maintenance to ensure that all combustible needles, leaves, and native grass are removed from on and around structures.
- Establishment and maintenance of a non-combustible surface cover around the structure including the use of FireSmart landscaping species.
- Removal of all combustible material piles (firewood, lumber, etc) within 10 metres of the structure.

For more information on FireSmart Zone 1 standards refer to *FireSmart – Protecting Your Community from Wildfire* (PIP 2003).

Recommendation 1: Encourage residents to establish adequate Zone 1 defensible space around their structures.

4.2.3 Zone 2-3 (10-30m and 30-100m)

Zone 2-3 fuels management is recommended for areas on the south and west perimeters of the community to reduce the threat of wildfire in C-2 and M-1 fuels inside the fireguard to perimeter structures (Table 4 & Map 3). Proposed fuels management areas are conceptual at this time and will require detailed fuels reduction planning to identify fuels management prescription, unit boundaries, and operational constraints.

Table 4: Priority Fuel Modification Areas

Priority	Area (Ha)	Proposed Fuel Modification Standards	Land Status Authority
1	0.8 1.0	Fuels reduction by spacing spruce to 3 m crown spacing in C-2 and M-1 fuel types on south perimeter of town adjacent to developments Remove all dead standing and dead & down coniferous and deciduous Retain deciduous overstory stems Prune limbs to 2 metres Dispose of debris by piling and burning onsite	Sambaa K'e First Nation
Total	1.8		

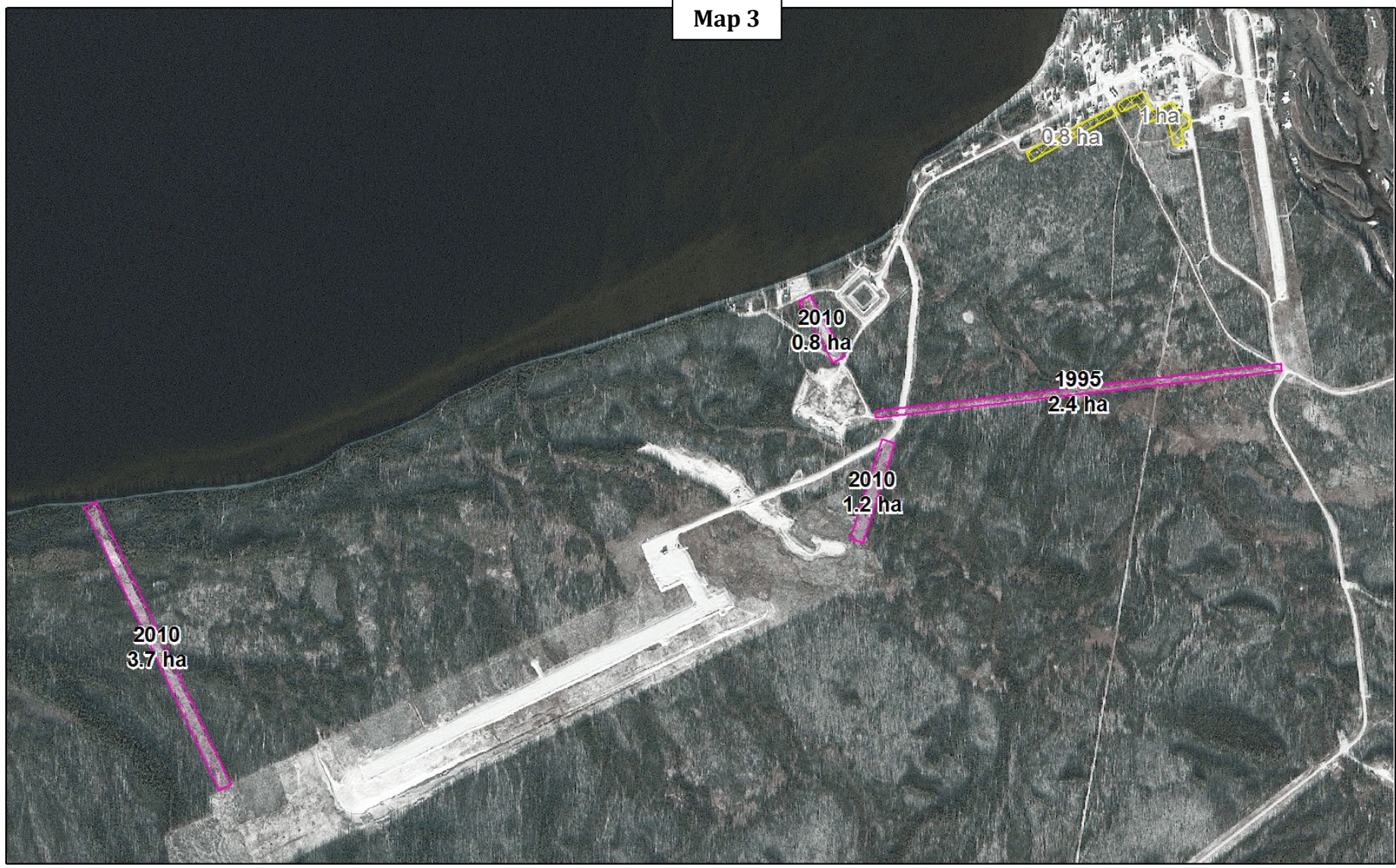
Recommendation 2: Zone 2-3 fuels reduction and maintenance is the responsibility of the Land Status Authority holder(s) and should be implemented based on the priorities identified in this plan.

4.3 Vegetation Management Maintenance

Fuel modification area maintenance schedules depend on many factors including fuel type, soil and moisture conditions, and specific weather events. FireSmart Zone 1a and Zone 1 fuel modification maintenance is a process requiring continued maintenance. Residents should be educated and encouraged to maintain their properties regularly to reduce the threat of wildfire to their structures.

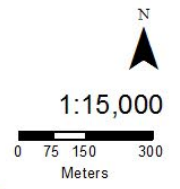
Recommendation 3: Residents should be educated and encouraged to maintain their properties regularly to reduce the threat of wildfire to their structures.

Map 3



Smbaa K'e Fuel Modifications Completed and Proposed

- Fuel Modifications**
-  Completed
 -  In Progress
 -  Proposed



5 Development Options

Consideration of wildfire at the planning stage of new development is encouraged to ensure that wildfire hazard and appropriate mitigation measures are developed and implemented prior to development.

New developments may overlap or conflict with existing fuel modification resulting in a reduction in fuel break effectiveness and an increase in wildfire threat to the new or existing development in the area.

Recommendation 4: If a new development removes or reduces the effectiveness of any existing or proposed FireSmart mitigation measures or introduces new wildfire hazards, the area must be assessed and measures implemented to maintain the community protection standards.

5.1 Structural Options

Structural characteristics that contribute to a structure's ability to withstand wildfire ignition include type of roofing and siding material, structure siting with respect to steeper forested slopes, and proper construction and maintenance of eaves, vents, and openings that can accumulate flammable debris and allow wildfire to gain entry to the structure.



The most common roofing materials in the planning area are asphalt shingle and the most common siding materials are wood.

5.2 Infrastructure Options

Infrastructure options include provision of adequate access standards to ensure quick and safe ingress and egress for residents and emergency responders during a wildfire, adequate and accessible water supply for structure protection and suppression, and utility installation standards that do not increase risk to emergency responders during a wildfire emergency.

5.2.1 Access

Access road standards throughout the planning area are mainly adequate for an interface community however emergency evacuation using road access during the fire season is not possible due to winter access only to the community.

5.2.2 Water Supply

Sambaa K'e does not have municipal hydrant water-supply. All development areas rely on water-tender supply from the local fire department for structure protection activities. Each home is equipped with an in-house water tank (3,100-5,400 litres) in addition to unlimited fire suppression water supply from Trout Lake and the Island River using portable pumps.

5.2.3 Franchised Utilities

Franchised utilities affected by an interface fire include electrical power and gas. Proper installation and maintenance of these services can minimize the risk to residents and emergency services personnel.

Electrical Power

Power distribution and residential service is provided through a diesel-powered generator with above-ground distribution lines.

Heating Fuel

Heating fuel is predominantly heating oil or firewood.

6 Public Education Options

Public education plays a key role in promoting and implementing FireSmart principles and projects. Residents, landowners, municipal administration, and elected officials all need to be aware of the risk of wildfires and the solutions to minimizing the risk, and need to become a partner in implementation of the solutions in their communities. If stakeholders understand the issues relating to wildland/urban interface hazard they will be more likely to take action on their own property or to support actions taken by other authorities.

Residents and stakeholders can refer to the GNWT ENR, Forest Management Division website at: <https://www.enr.gov.nt.ca/en/services/be-firesmart> for further information on the GNWT FireSmart program, current wildfire updates, and other wildfire management related information.

Key Messages

FireSmart hazard assessments identified the need for the following key messages to target audiences in the planning area.

Homeowners

Homeowners can increase resiliency of homes and make them less vulnerable to wildfire by development and maintenance of the FireSmart Non-Combustible Zone 1a (0-1.5 metres) and Zone 1 (1.5-10 metres) defensible space surrounding the home, by:

- Clearing vegetation and combustible material down to mineral soil within 1.5 metres of structures.
- Using noncombustible materials in this critical zone of 1.5 metres directly adjacent to your home such as gravel, bricks or concrete.
- Woody shrubs, trees or tree branches should be avoided in this area and any that are present should be properly mitigated.
- Storing firewood and other combustible materials more than 10 metres away from the home.
- Keeping roof and eaves clear of leaves and other combustible debris.
- Creating propane and fuel-tank FireSmart defensible space.
- Creating a non-combustible zone for underneath and around any trailers/vehicles and mitigate sheds and other structures to the same standards as those of your home.
- If possible and/or applicable maintain Zone 2 (10-30 metres) and Zone 3 (30-100 metres) recommendations, and work with neighbors in any overlapping Priority Zones.

Communities

Communities can reduce wildfire risk and adopting FireSmart principles by:

- Holding a FireSmart Wildfire Community Preparedness Day or workshop.

- Using local government websites, social media and newsletters to promote FireSmart principles.
- Asking ENR staff what educational and/or promotional resources they have available, such as: wildfire information pamphlets, posters, educational resources, videos etc.
- Applying for the FireSmart Community Recognition Program. For more information visit: www.firesmartcanada.ca/firesmart-communities/firesmart-canada-community-recognition-program/.

Recommendation 5: Public education on acceptable FireSmart Zone 1a and Zone 1 standards is recommended for all Sambaa K'e residents.

7 Inter-Agency Cooperation and Cross-Training Options

Interagency cooperation and cross-training between all stakeholders is necessary to ensure cooperative and effective implementation of wildland/urban interface mitigation options and to coordinate an effective response to a wildland/urban interface fire.

Interagency stakeholders within the planning area include:

- Smbaa K'e First Nation
- GNWT

Recommendation 6: Coordinate with the established emergency management committee to determine what will be required during a wildfire emergency. All relevant stakeholders should understand the FireSmart program and help to promote mitigation.

Currently, Smbaa K'e does not have an active Fire Department. They have a fire truck and fire hall, but no active members on the department.

In the event that Smbaa K'e establishes an active Fire Department, cross-training for Smbaa K'e Fire Department and ENR wildfire suppression personnel should include basic wildfire, wildland/urban interface fire, and incident command system training courses.

The following cross-training courses are available.

Wildland Fire

- Wildland Firefighter (NFPA 1051 Level I, S-131, or equivalent)

Wildland/Urban Interface Fire

- Structure and Site Preparation Workshop (S-115)

Incident Command System

- ICS Orientation (I-100)
- Basic ICS (I-200)
- Intermediate ICS (I-300)

Recommendation 7: Smbaa K'e Public Works and the GNWT should partner on cross-training initiatives to ensure emergency responders are cross-trained to the following:

- Wildland Firefighter
- Structure and Site Preparation Workshop (S-115)
- Incident Command System (I-100 to I-300) as applicable

8 Emergency Planning Options

Emergency preparedness is an important part of any disaster planning. The need for organization, clear chain of command, and an understanding of job responsibilities during an interface fire are of paramount importance.

At present Samba K'e does not have a wildfire pre-plan to provide emergency responders with detailed tactical information with respect to values at risk and operational strategies and tactics to minimize losses during a wildland/urban interface fire. A suggested outline is as follows:

- Planning Area Jurisdictional Authority
- Values at risk (life, structures, infrastructure)
- Fire operations plan (strategies/tactics, water sources, equipment, communications plan)

Recommendation 8: Develop a Community Wildfire Pre-Plan for Samba K'e to provide greater operational detail to emergency responders during a wildland/urban interface incident.

9 Recommendations Summary

Vegetation Management

Issue	Recommendation	Responsible Agency
Zone 1a- Zone 1	Recommendation 1: Encourage residents to establish adequate Zone 1a and Zone 1 defensible space around their structures.	Sambaa K'e First Nation
Zone 2-3	Recommendation 2: Zone 2-3 fuels reduction and maintenance is the responsibility of the Land Status Authority holder(s) and should be implemented based on the priorities identified in this plan.	Sambaa K'e First Nation
Maintenance	Recommendation 3: Residents should be educated and encouraged to maintain their properties regularly to reduce the threat of wildfire to their structures.	Sambaa K'e First Nation

Development

Issue	Recommendation	Responsible Agency
FireSmart Development Planning	Recommendation 4: If a new development removes or reduces the effectiveness of any existing or proposed FireSmart mitigation measures or introduces new wildfire hazards, the area must be assessed and measures implemented to maintain the community protection standards.	Sambaa K'e First Nation GNWT

Public Education

Issue	Recommendation	Responsible Agency
Public Education Priorities	Recommendation 5: Public education on acceptable FireSmart Zone 1a and Zone 1 standards is recommended for all Sambaa K'e residents. Priority items include: Development and maintenance of FireSmart defensible space surrounding the home Propane and fuel-tank FireSmart defensible space Holding community FireSmart events to educate the public on FireSmart principles	Sambaa K'e First Nation GNWT

Interagency Cooperation & Cross-Training

Issue	Recommendation	Responsible Agency
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Interagency Cooperation	Recommendation 6: Coordinate with the established emergency management committee to determine what will be required during a wildfire emergency. All relevant stakeholders should understand the FireSmart program and help to promote mitigation.	Sambaa K'e First Nation GNWT
Cross-Training	Recommendation 7: Sambaa K'e Public Works and GNWT should partner on cross-training initiatives to ensure emergency responders are cross-trained to the following minimum standards: Wildland Firefighter Structure and Site Preparation Workshop (S-115) Incident Command System (I-100 to I-300) as applicable	Sambaa K'e First Nation GNWT

Emergency Planning

Issue	Recommendation	Responsible Agency
Community Wildfire Pre- Planning	Recommendation 8: Develop a Community Wildfire Pre-Plan for Sambaa K'e to provide greater operational detail to emergency responders during a wildland/urban interface incident.	Sambaa K'e First Nation GNWT