

# Community Wildfire Protection Plan

Wekweètì



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## 1. Introduction

In 2012, a Community Wildfire Protection Plan (CWPP) was developed for the Community of Wekweètì 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 Wekweètì.

In 2018 the GNWT, Department of Environment and Natural Resources (ENR) updated the Wekweètì 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

Wekweètì, 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 Wekweètì and a two-kilometre buffer surrounding the community (Map 1).

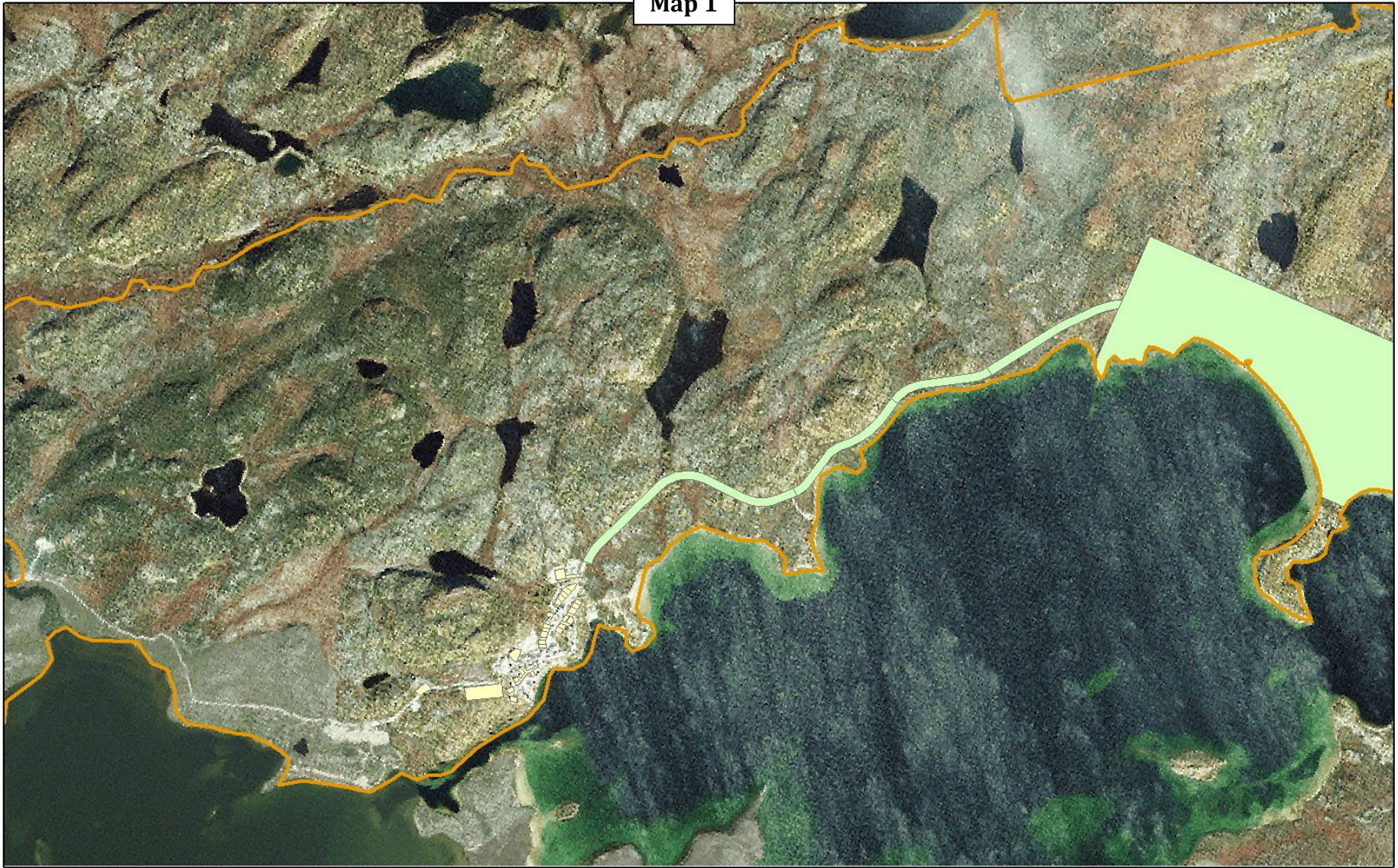
Stakeholders involved in the planning process included:

- Government of the Northwest Territories, Environment and Natural Resources
- Community Government of Wekweètì

All lands are within the Tli Cho Land Claim Settlement. Land status authority is represented by the following (Map 1):

- Commissioner
- Municipal
- Private
- Territorial

Map 1



## Wekweeti - Land Status Authority

- Land Ownership**
- Commissioner
  - Municipal
  - Private
  - Territorial
- Planning Area



1:30,000

0 125 250 500  
Meters



Northwest Territories Environment and Natural Resources

### 3. Hazard & Risk Assessment

In the original 2012 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 GNWT Environment and Natural Resources (ENR) for the ten-year period from 2009 to 2018.

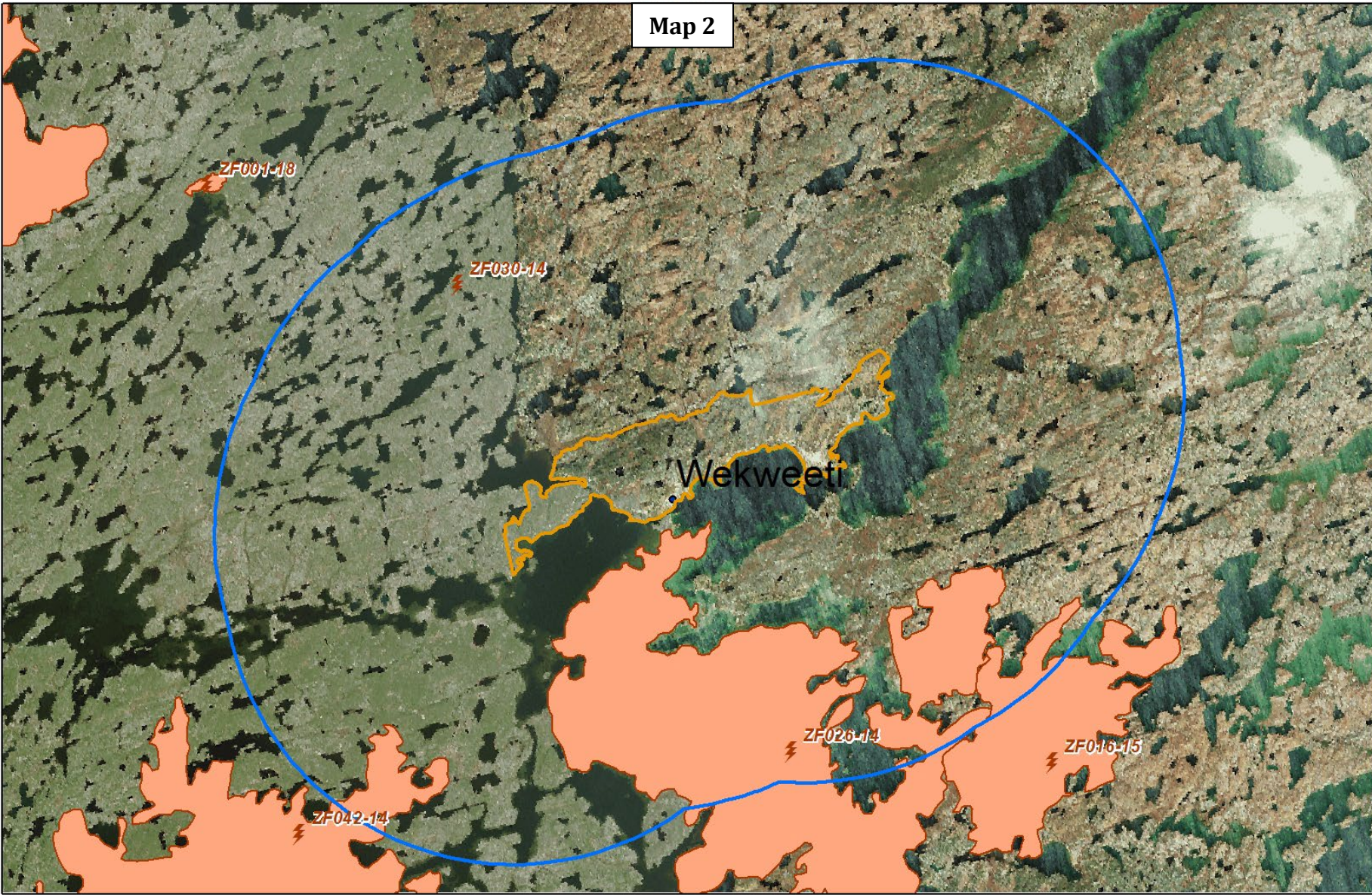
Fire incidence data indicates that four wildfires were discovered within a 10 kilometre radius of the community (Table 1), all were lightning-caused. One fire was contained at a maximum of 0.2 ha and the other 3 fires were several thousands of hectares in size. One of the fires, ZF026 in 2014, created a threat to the Community of Wekweètì and a burn out operation prevented the spread of the fire towards the community in 2014 (Map 2).

**Table 1: Fire Incidence by Cause (2009 - 2018)**







General Cause	Number of Fires	Percent of Total
Human-Caused	0	0
Lightning-Caused	4	100
<b>Totals</b>	<b>4</b>	<b>100</b>

**The risk of wildfire in the planning area is moderate based on fire incidence data.**


Map 2



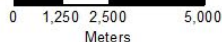
### Wekweeti - Ten Year Fire History

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


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1:175,000



0 1,250 2,500 5,000 Meters



### 3.2 FireSmart Hazard Assessments

FireSmart hazard assessments (P.I.P., 2003) were conducted on development areas and adjacent wildland fuel types within the planning area. All development within Wekweètì is at minimal threat to wildfire (Table 2 & Map 2).

**Table 2: FireSmart Hazard Assessments**

Development Area	Structure/Site Hazard (0 - 30m)
Wekweètì	Low
Airport	Low

Hazard factor’s for each of the development areas are discussed below.

#### Wekweètì

FireSmart hazard for Wekweètì is rated as **LOW**. Fuels immediately adjacent primarily consist of non-fuel, cured-grass, deciduous, and open-density spruce (C-1). Some structures have inadequate defensible space from cured-grass resulting in increased threat. Exterior structure materials are primarily asphalt shingle/metal roofing and hardiplank siding on newer structures and wood or log siding on older structures. Access roads are all-weather loop and dead-end design.



#### Airport

FireSmart hazard for the Airport is rated as **LOW**. Fuels immediately adjacent primarily consist of non-fuel and cured grass with significant defensible space between the structures and wildland fuels. Exterior structure materials are asphalt-shingle roofing and wood siding.

**The wildfire threat for Wekweètì is Low based on fuel types adjacent to structures, exterior structural materials and fire incidence data, with the highest threat being from cured-grass fuels adjacent to homes**



## 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.

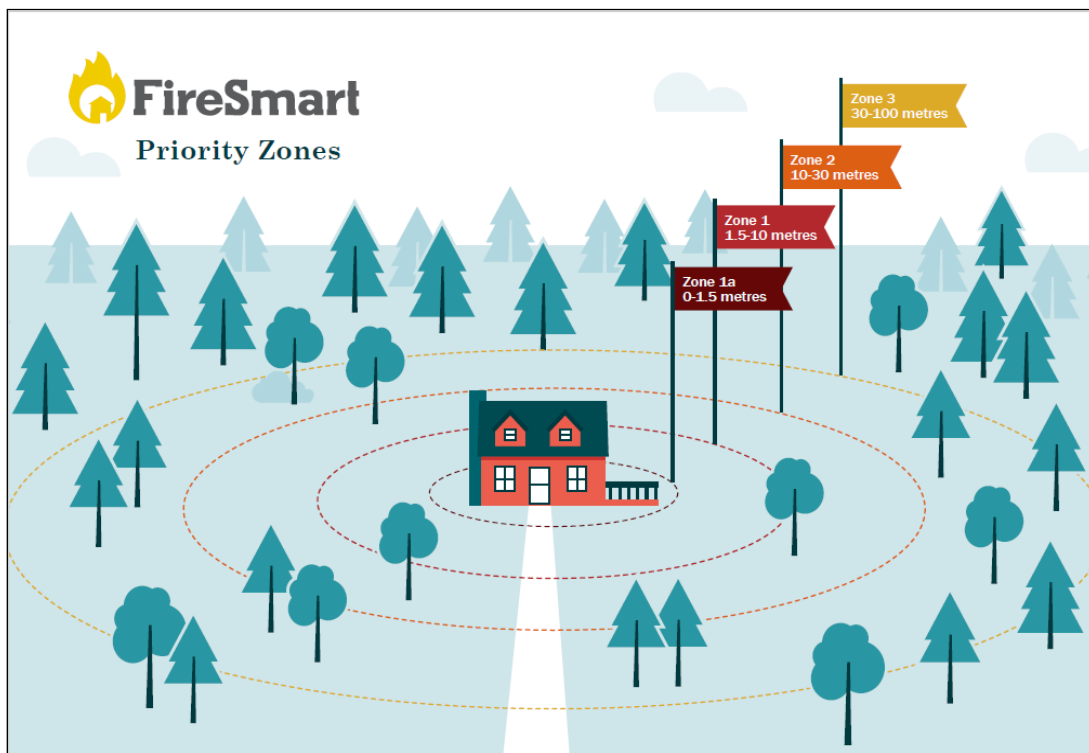
Vegetation management consists of one or any combination of the following options:

- 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

There are no existing fuel modification areas around Wekweètì.

## 4.2 Proposed Vegetation Management

Zone 1 and 1a vegetation management is inadequate for many of the residential structures and seasonal cabins, with a lack of defensible space from native grass, spruce, and pine fuels.

### 4.2.1 Zone 1a (0-1.5m)

FireSmart Zone 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 1.5m of structures.

Use noncombustible materials in this critical zone of 1.5m 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.

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.

### 4.2.2 Zone 1 (1.5m – 10m)

Zone 1 vegetation management is **adequate** for the majority of structures however some have a lack of defensible space from native grass fuels.

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 1-1a defensible space around their structures.

#### 4.2.3 Zone 2-3

There are no recommended Zone 2-3 fuel modification areas based on the wildfire threat to the community.

### 4.3 Vegetation Management Maintenance

FireSmart Zone 1 fuel modification maintenance is an ongoing process. Residents should be educated and encouraged to maintain their properties regularly throughout the fire season to reduce the threat of wildfire to their structures.

**Recommendation 2:** Residents should be educated and encouraged to maintain their properties regularly throughout the fire season to reduce the threat of wildfire to their structures.

## 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 fuelbreak effectiveness and an increase in wildfire threat to the new or existing development in the area.

**Recommendation 3:** 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, 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 metal.

Siding materials vary between non-combustible hardi-plank on newer structures and combustible wood and log on older structures.

Open decks and undersides are common.

## 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. Access roads are all-weather loop and dead-end design. There is no summer road access to the community.

### 5.2.2 Water Supply

Wekweètì does not have municipal hydrant water-supply. All development areas rely on water-tender supply for structure protection activities. Each home is equipped with an in-house water tank.

### 5.2.3 Franchised Utilities

Franchised utilities affected by an interface fire include electrical power and heating fuel. 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 above-ground powerlines from the NTPC generation plant.

#### **Heating Fuel**

Heating fuel is provided by tank supply.

## 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/](http://www.firesmartcanada.ca/firesmart-communities/firesmart-canada-community-recognition-program/)

**Recommendation 4:** Public education on acceptable FireSmart Zone 1a and Zone 1 standards is recommended for all Wekweètì 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:

- Community Government of Wekweètì
- GNWT

**Recommendation 5:** 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.

The Wekweètì Fire Department presently only has two firefighters therefore cross-training would not be effective at this time. Should the fire department become active, cross-training for fire department members 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 6:** Should the fire department become active, the fire department 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

Wekweètì presently does not have an Emergency Measures Plan nor does it 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 pre-plan 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 7:** Develop a Community Wildfire Pre-Plan for the community to provide greater operational detail to emergency responders during a wildland/urban interface incident.

## 9. Recommendations Summary

### Vegetation Management

Issue	Recommendation	Responsible Agency
<b>Zone 1</b>	<b>Recommendation 1:</b> Encourage residents to establish adequate Zone 1 defensible space around their structures.	Community Government of Wekweètì
<b>Maintenance</b>	<b>Recommendation 2:</b> Residents should be educated and encouraged to maintain their properties regularly throughout the fire season to reduce the threat of wildfire to their structures.	Community Government of Wekweètì

### Development

Issue	Recommendation	Responsible Agency
<b>FireSmart Development Planning</b>	<b>Recommendation 3:</b> 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.	Community Government of Wekweètì

### Public Education

Issue	Recommendation	Responsible Agency
<b>Public Education Priorities</b>	<b>Recommendation 4:</b> Public education on acceptable FireSmart Zone 1a and Zone 1 standards is recommended for all residents.	GNWT Community Government of Wekweètì

### Interagency Cooperation & Cross-Training

Issue	Recommendation	Responsible Agency
<b>Interagency Cooperation</b>	<b>Recommendation 5:</b> 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.	GNWT Community Government of Wekweètì
<b>Cross-Training</b>	<b>Recommendation 6:</b> Should the fire department become active, the fire department and GNWT MACA & ENR should partner on cross-training initiatives to ensure emergency responders are cross-trained to the following minimum standards: <ul style="list-style-type: none"> <li>▪ Wildland Firefighter</li> <li>▪ Structure and Site Preparation Workshop (S-115)</li> <li>▪ Fire Operations in the Wildland/Urban Interface (S-215)</li> <li>▪ Incident Command System (I-100 to I-300) as applicable</li> </ul>	GNWT Community Government of Wekweètì

### Emergency Planning

Issue	Recommendation	Responsible Agency
<b>Community Wildfire Pre- Planning</b>	<b>Recommendation 7:</b> Develop a Community Wildfire Pre-Plan for the community to provide greater operational detail to emergency responders during a wildland/urban interface incident.	GNWT Community Government of Wekweètì