

# Municipal District of Opportunity No. 17

## Wildfire Mitigation Strategy



Prepared for:  
Municipal District of Opportunity No. 17



October 2012

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# Table of Contents

<b>1</b>	<b>Introduction</b> .....	<b>1</b>
<b>2</b>	<b>Planning Area</b> .....	<b>1</b>
<b>3</b>	<b>Hazard &amp; Risk Assessment</b> .....	<b>3</b>
	3.1 Wildfire Ignition Potential	
	3.2 Wildfire Behaviour Potential and FireSmart Hazard	
<b>4</b>	<b>Vegetation Management Options</b> .....	<b>17</b>
	4.1 Existing and Proposed Vegetation Management	
	4.2 Vegetation Management Maintenance	
<b>5</b>	<b>Development and Legislation Options</b> .....	<b>32</b>
	5.1 Structural Options	
	5.2 Infrastructure Options	
	5.3 Legislation Options	
<b>6</b>	<b>Education and Communication Options</b> .....	<b>36</b>
	6.1 Public Consultation	
	6.2 Format	
	6.3 Communications Plan	
<b>7</b>	<b>Inter-Agency Cooperation and Cross-Training Options</b> .....	<b>40</b>
	7.1 Communications	
	7.2 Fire Bans	
	7.3 FireSmart Committee	
	7.4 Cross-Training	
<b>8</b>	<b>Emergency Response Planning Options</b> .....	<b>43</b>
	8.1 Municipal Emergency Plan	
	8.2 Wildfire Preparedness Guides	
	8.3 Exercises	
	8.4 Mutual-Aid Agreements	
	8.5 Wildland Firefighting Equipment	
	8.6 Incident Command Planning	
<b>9</b>	<b>Implementation Plan</b> .....	<b>47</b>
<b>10</b>	<b>References</b> .....	<b>49</b>

# 1 Introduction

The Municipal District of Opportunity Wildfire Mitigation Strategy was developed to identify the threat of wildfire to development in six communities, Wabasca, Sandy Lake, Chipewyan Lake, Red Earth Creek, Peerless Lake, and Trout Lake, and provide practical and operational wildland/urban interface risk mitigation strategies to reduce that threat. The intent of this plan is to provide a working document that land and fire managers, municipal administration and elected officials, and local residents and businesses can use to guide *FireSmart* development practices in the planning area.

This Wildfire Mitigation Strategy was developed using standardized FireSmart hazard assessment protocols (FireSmart Guidebook for Community Protection, 2011) and mitigative measures were developed based on the seven disciplines of wildland/urban interface approach:

1. Vegetation management
2. Development
3. Public education
4. Legislation
5. Interagency cooperation
6. Cross-training
7. Emergency planning

An implementation plan is included in this Plan to assist stakeholders to budget and complete projects based on the priorities identified.

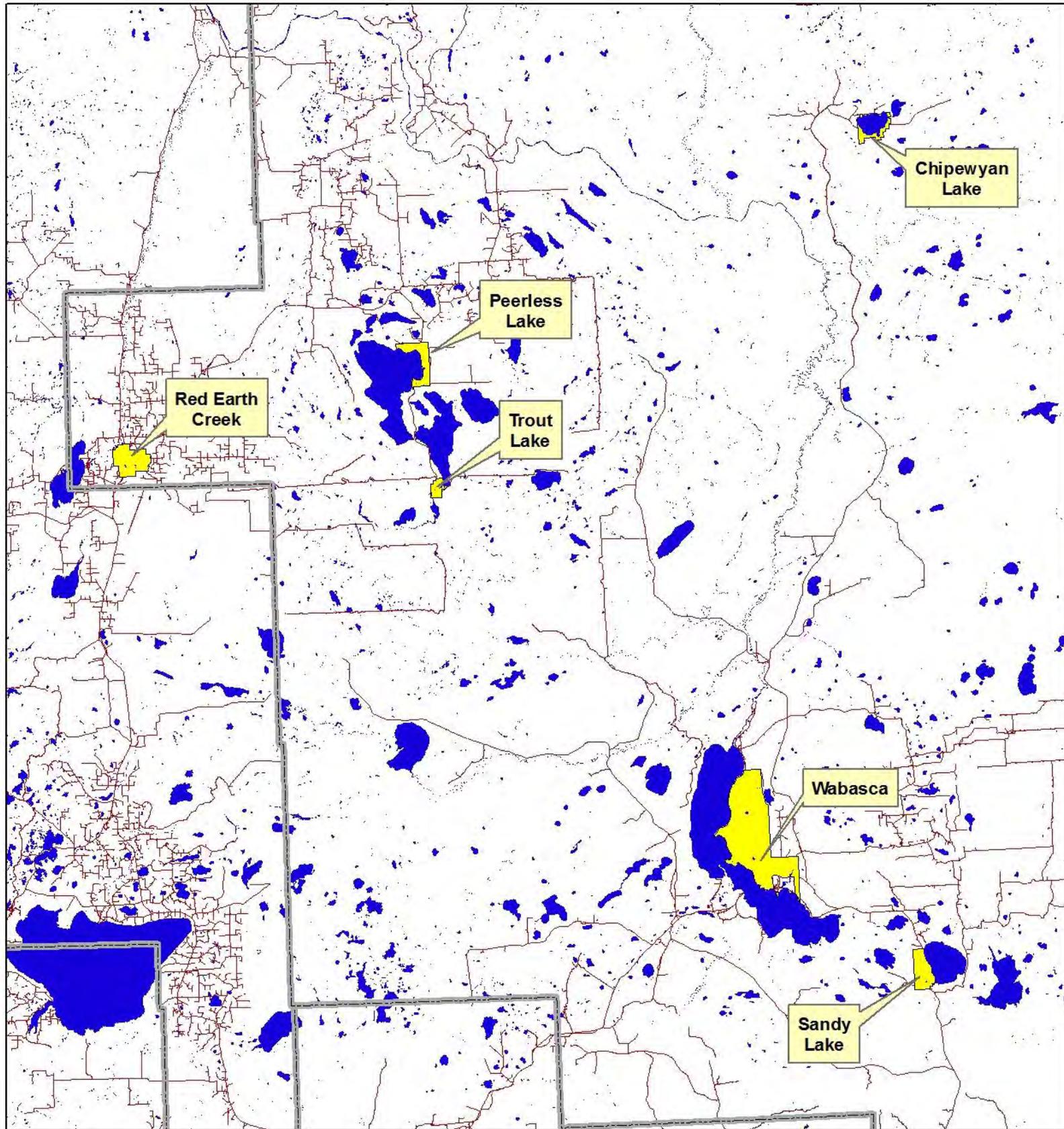
The Municipal District of Opportunity Wildfire Mitigation Strategy recommendations focus on mitigative options at the structure and community levels with the intent of reducing wildfire intensity and rate of spread as wildfire approaches development and improving structure survival as the wildfire enters the community.

This plan should be reviewed and updated at **five year intervals** to ensure it is based on current community conditions.

## 2 Planning Area

The planning area includes the six communities of Wabasca, Sandy Lake, Chipewyan Lake, Red Earth Creek, Peerless Lake, and Trout Lake (Map 1).

Land ownership within the planning area consists of Crown lands administered by the Provincial government, municipal lands administered by the MD of Opportunity, and deeded lands.



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### Map 1 - Planning Area

-  Road
-  Community Boundary
-  MD Boundary

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### **3 Hazard & Risk Assessment**

The hazard and risk assessment process for each community analyses the risk of wildfire ignition through analysis of wildfire incidence, the wildfire behaviour potential through analysis of fuels and weather data, and the values at risk to wildfire through FireSmart hazard assessments.

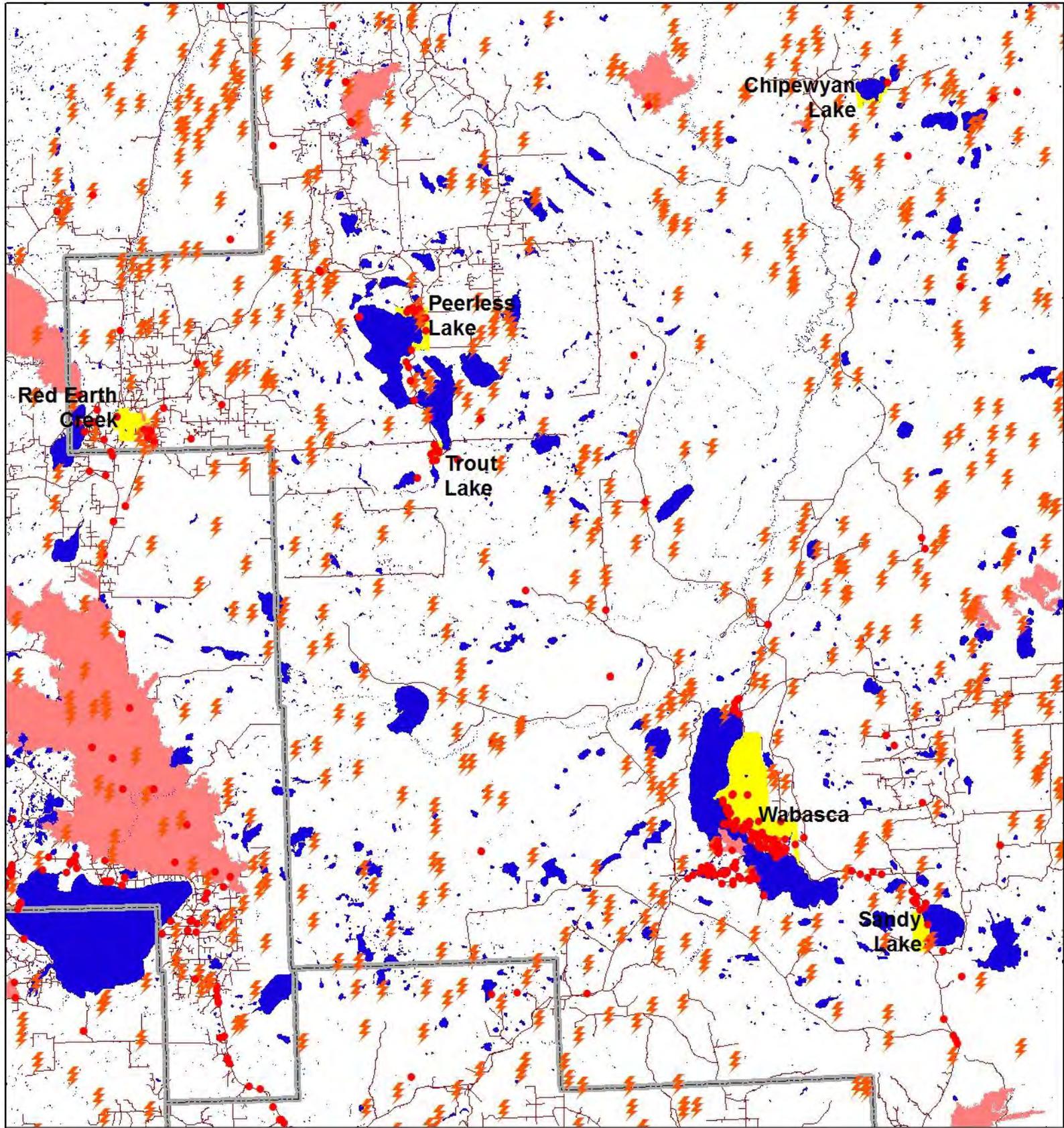
#### **3.1 Wildfire Ignition Potential**

The assessment of recent wildfire incidence was completed using historical fire data from Alberta Environment and Sustainable Resource Development (ESRD), for the ten-year period from 2003 to 2012.

Wildfire incidence data indicates that wildfire ignition potential is high (Map 2). The planning area is dominated with an abundance of lightning-caused wildfires across the landscape and significant human-caused wildfires in the community areas.

The community of Peerless Lake was threatened by a wildfire to the east of the community in 2002 resulting in resident evacuation, Chipewyan Lake was threatened in 2006 by a wildfire to the south resulting in deployment of structure protection crews and equipment and construction of a fireguard around the south perimeter of the community, and Red Earth Creek was evacuated in 2011 due to a wildfire on the southeast corner of the hamlet.

**The risk of wildfire from both lightning and human-caused ignitions is High in the planning area.**



**Map 2 - Wildfire Incidence**



-  Road
-  Community Boundary
-  MD Boundary

- Wildfire Cause**
-  Human
  -  Lightning

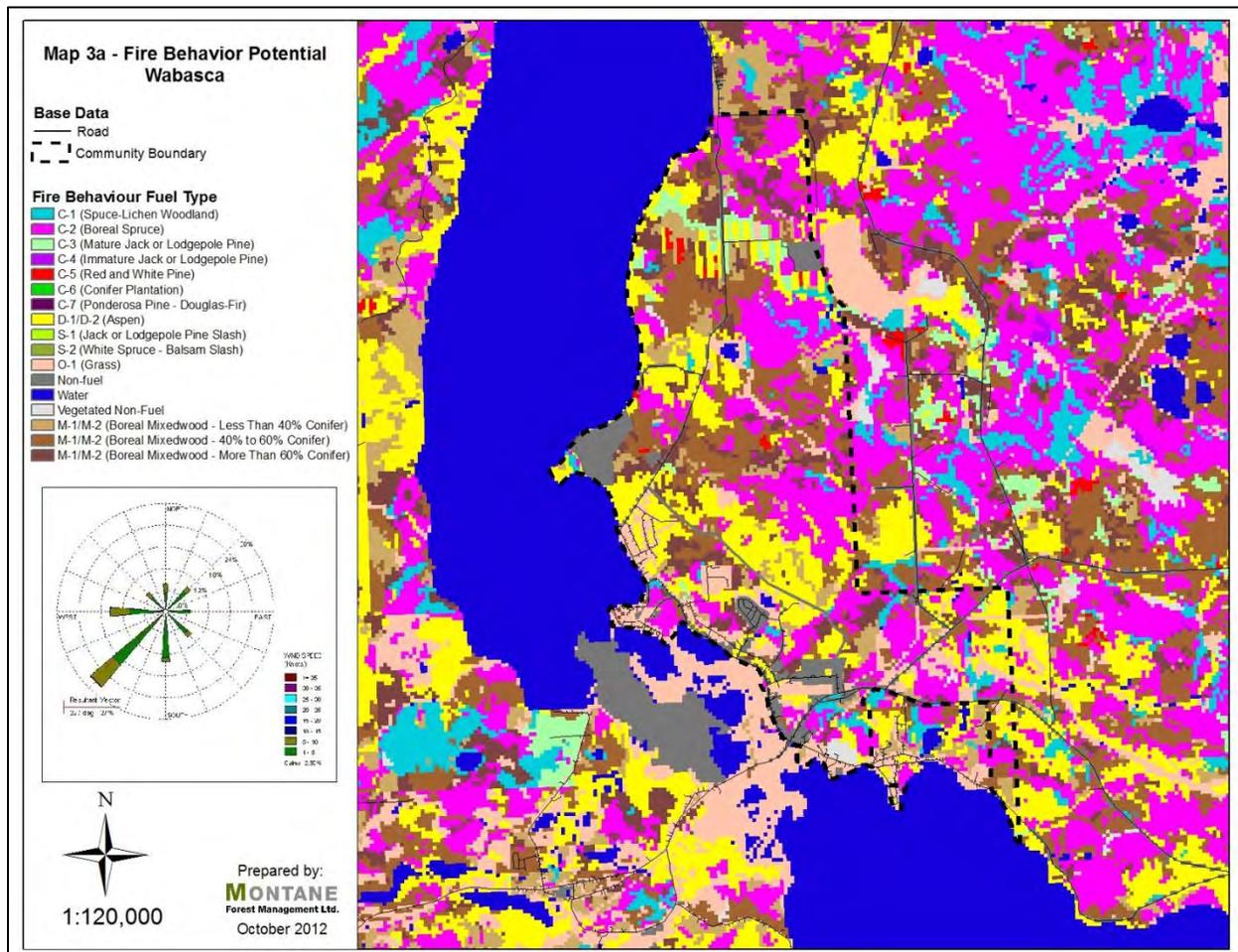
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### 3.2 Wildfire Behaviour Potential and FireSmart Hazard

Fire Behaviour Prediction (FBP) fuel types were used to analyze the fire behaviour potential (Maps 3a-3f) and FireSmart Structure/Site and Area hazard assessments were used to analyze FireSmart hazard within and adjacent to each of the communities.

#### 3.2.1 Wabasca

Wabasca and area is dominated with boreal spruce (C-2), deciduous (D-1), native grass (O1) and mixedwood (M-1/M-2) fuel types (Map 3a). The potential for landscape-level wildfire to the north and east is High.



Factors influencing FireSmart hazard include:

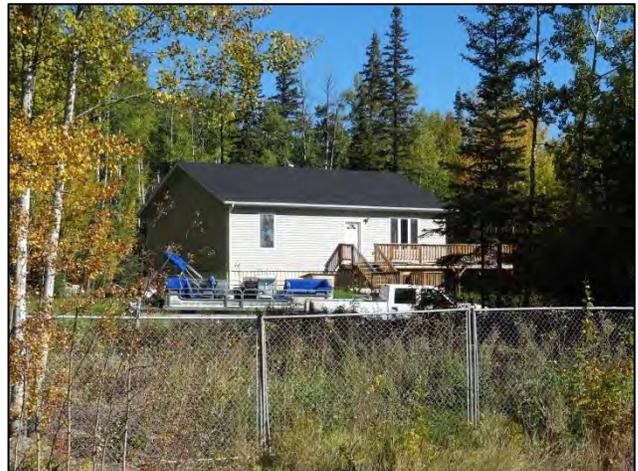
- Zone 1-2 defensible space around structures is mainly adequate. Some structures have inadequate defensible space from native grass and/or coniferous and mixedwood fuel types.
- Exterior structure materials consist mainly of fire-resistant roofing materials and combustible siding materials. Wooden porches and decks with exposed undersides are common.

**Structure and Infrastructure Characteristics:**

<b>Factor</b>	<b>Standard</b>
Roofing	Mainly asphalt shingle and metal, scattered old, curled asphalt-shingle roofs at risk to firebrand ignition
Siding	Mainly wood and vinyl, scattered log, stucco, and metal
Decks/Porches	Wood with exposed undersides
Access	All-weather paved and gravel, adequate width and turn-around radius
Water	Pressurized hydrant-supply
Power	Overhead distribution
Heating Fuel	Natural gas, scattered propane tanks at risk to wildfire
Road/Address Signage	Road and rural address signage meets FireSmart standards



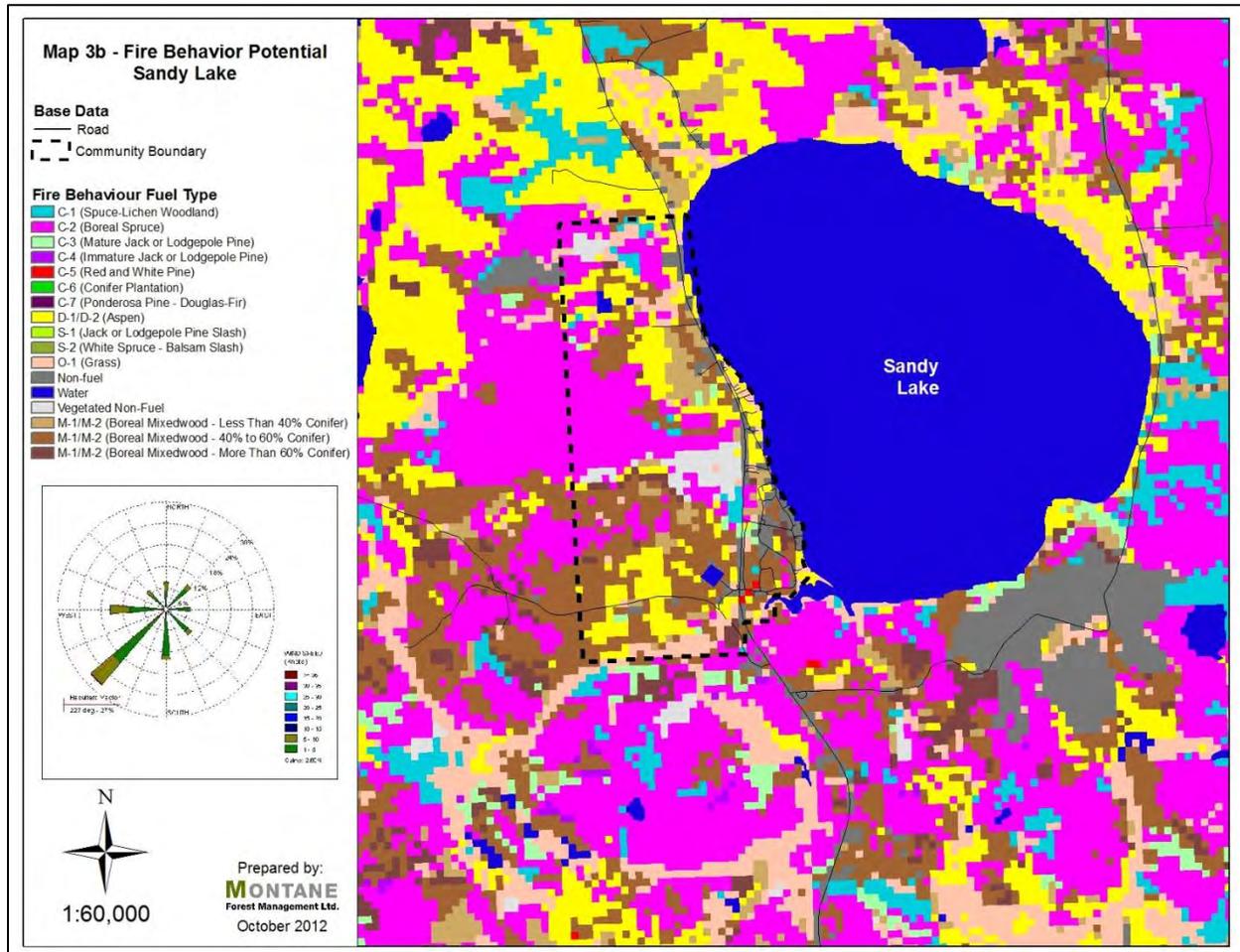
Adequate Zone 1-2 Defensible Space



Inadequate Zone 1-2 Defensible Space

### 3.2.2 Sandy Lake

Sandy Lake and area is dominated with boreal spruce (C-2) and mixedwood (M-1/M-2) fuels to the south and west and deciduous (D-1) fuels to the north (Map 3b). The potential for landscape-level wildfire from the south and west is High.



**Structure and Infrastructure Characteristics:**

<b>Factor</b>	<b>Standard</b>
Roofing	Mainly asphalt shingle and metal, scattered old, curled asphalt-shingle roofs at risk to firebrand ignition
Siding	Mainly wood and vinyl, scattered log and metal
Decks/Porches	Wood with exposed undersides
Access	All-weather gravel, adequate width and turn-around radius
Water	None for dwellings, pressurized hydrant-supply at school and firehall
Power	Overhead distribution
Heating Fuel	Propane tanks, some at risk to wildfire
Road/Address Signage	Road and rural address signage meets FireSmart standards



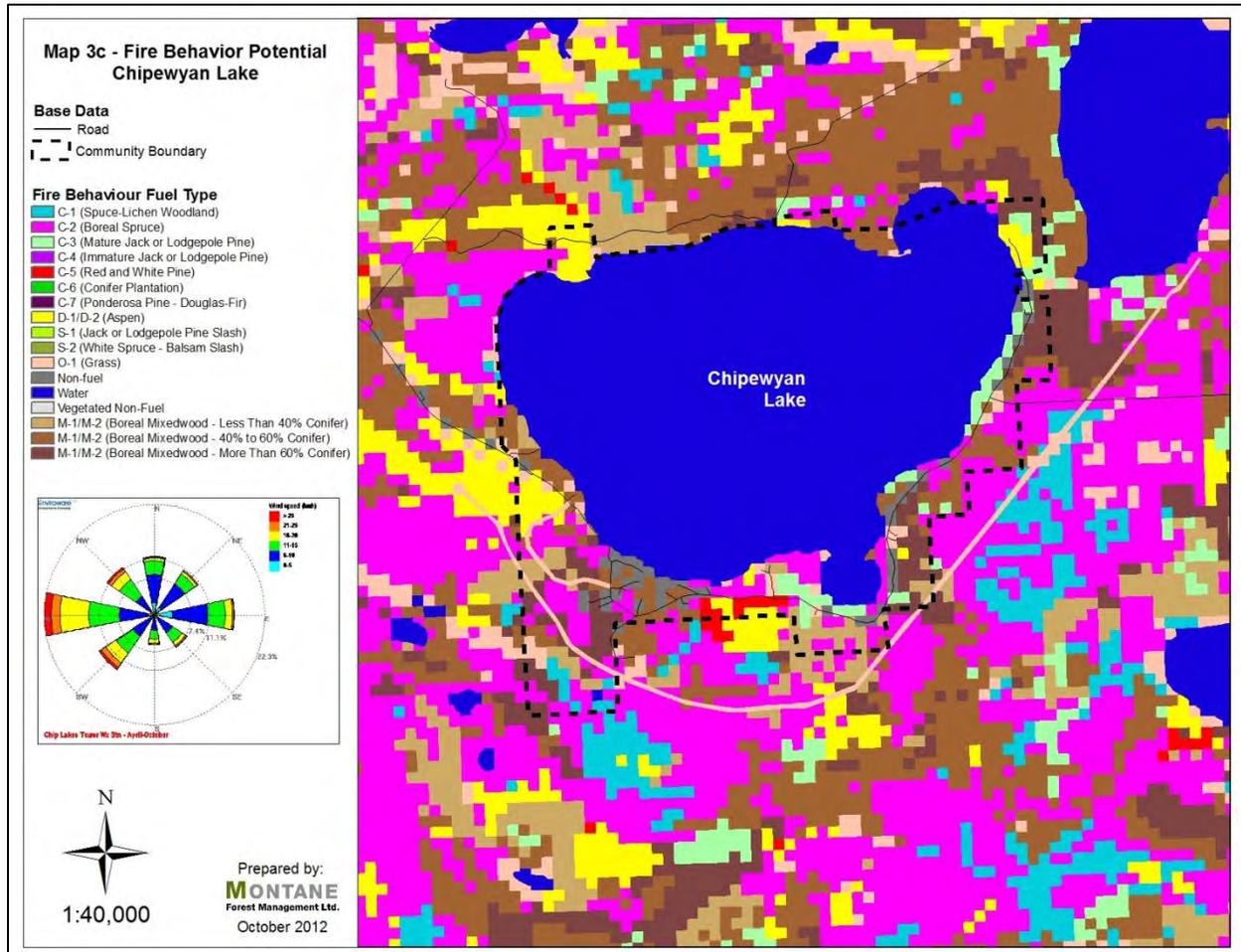
Adequate Zone 1-2 Defensible Space



Inadequate Zone 1-2 Defensible Space

### 3.2.3 Chipewyan Lake

Chipewyan Lake and area is dominated with boreal spruce (C-2) and mixedwood (M-1/M-2) fuels to the south, east and west (Map 3c). The potential for landscape-level wildfire is High. The 50 metre wide firebreak, established around the south perimeter of the community in 2007, provides an excellent containment line from wildfire threat from the south.



Factors influencing FireSmart hazard include:

- Zone 1-2 defensible space around most structures is adequate. Some structures have inadequate defensible space from native grass and/or coniferous and mixedwood fuel types.
- Zone 2-3 defensible space is inadequate for several perimeter structures with lack of clearance from coniferous and mixedwood fuel types.
- Exterior structure materials consist mainly of fire-resistant roofing materials and combustible siding materials. Wooden porches and decks with exposed undersides are common.

**Structure and Infrastructure Characteristics:**

<b>Factor</b>	<b>Standard</b>
Roofing	Mainly asphalt shingle and metal, scattered old, curled asphalt-shingle roofs at risk to firebrand ignition
Siding	Mainly wood and vinyl, scattered log and metal
Decks/Porches	Wood with exposed undersides
Access	All-weather gravel, adequate width and turn-around radius
Water	Cistern for each dwelling, trucked from community water plant
Power	Overhead distribution
Heating Fuel	Propane tanks, some at risk to wildfire
Road/Address Signage	None



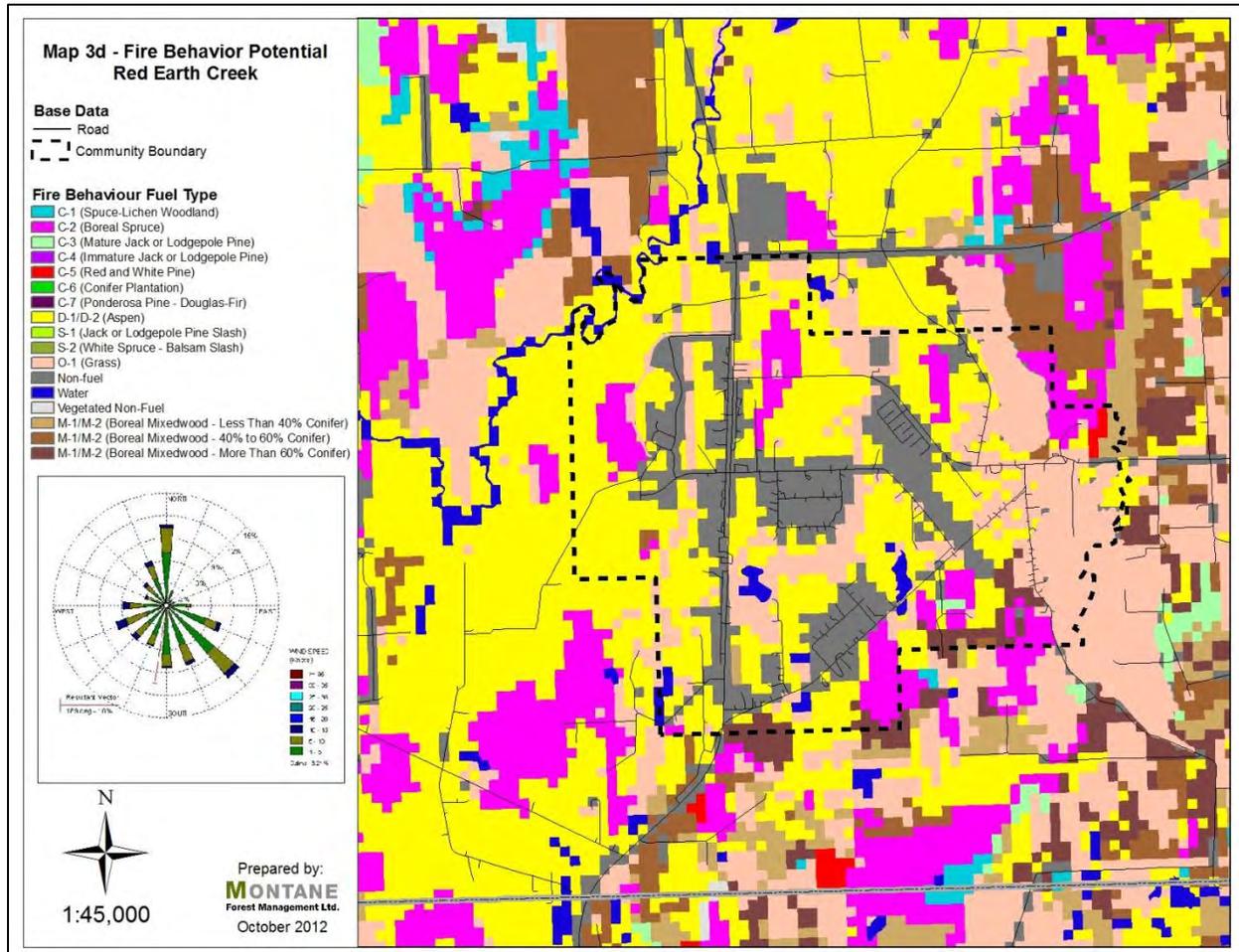
Inadequate Zone 1-2 Defensible Space



Decks/Porches Open Undersides

### 3.2.4 Red Earth Creek

Red Earth Creek and area is dominated with deciduous (D-1) fuels with scattered patches of boreal spruce (C-2) and mixedwood (M-1/M-2) fuels surrounding and within the community (Map 3d). The potential for landscape-level wildfire is Low however the potential for smaller-scale wildfire within the community exists, similar to the 2011 wildfire.



### Structure and Infrastructure Characteristics:

Factor	Standard
Roofing	Mainly asphalt shingle and metal
Siding	Mainly wood and vinyl, scattered metal
Decks/Porches	Wood with exposed undersides
Access	All-weather paved and gravel, adequate width and turn-around radius
Water	Hydrants west of Hwy 88, none east of Hwy 88
Power	Overhead distribution
Heating Fuel	Natural gas, scattered propane tanks - some at risk to wildfire
Road/Address Signage	Road and rural address signage meets FireSmart standards



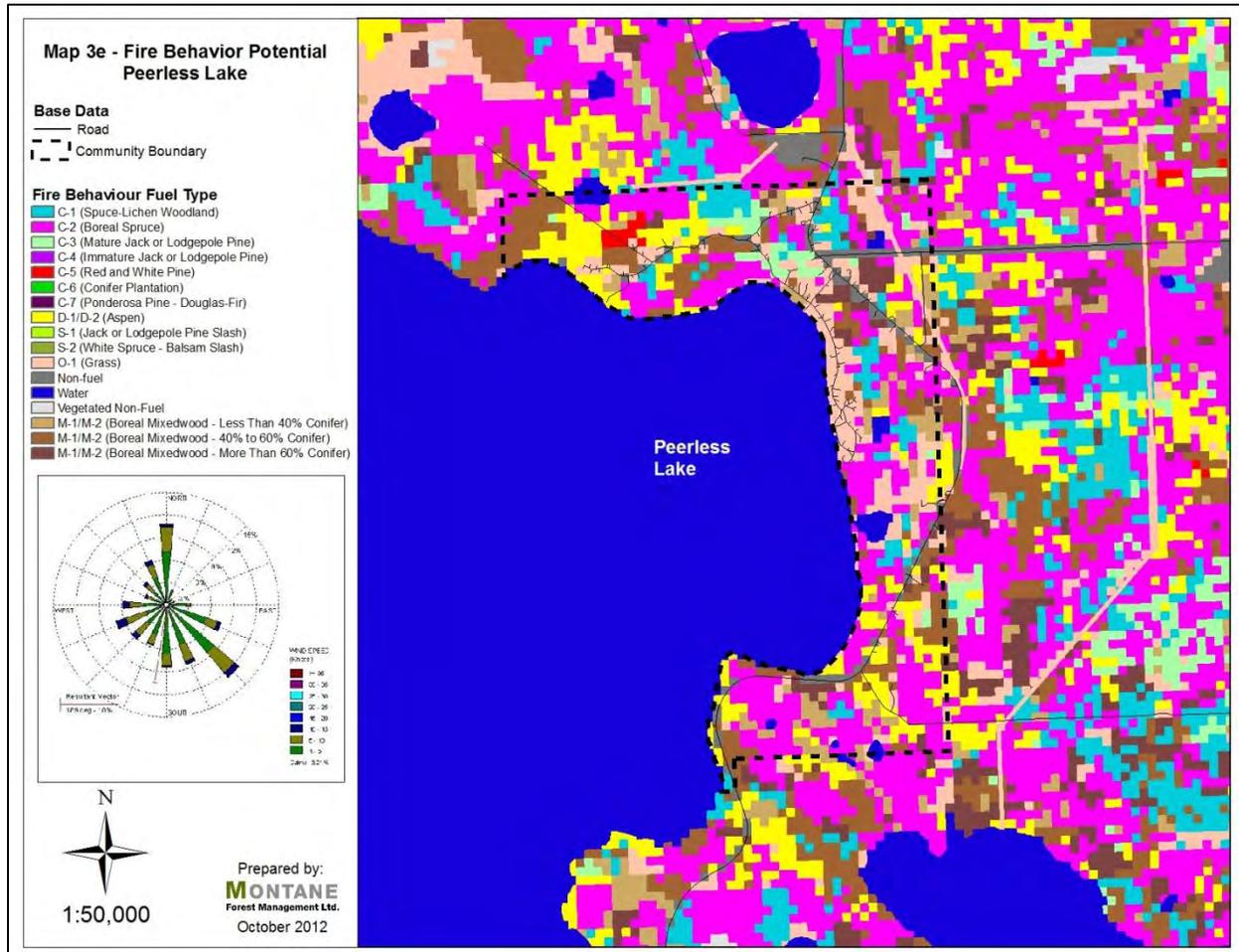
Adequate Zone 1-2 Defensible Space



Inadequate Zone 1-2 Defensible Space

### 3.2.5 Peerless Lake

Peerless Lake and area is dominated with boreal spruce (C-2) fuels with patches of mature jack pine (C-3), native grass (O1), deciduous (D-1), mixedwood (M-1/M-2), and spruce-lichen woodland (C-1) fuels surrounding and within the community (Map 3e). The potential for landscape-level and community-level wildfire is High.



Factors influencing FireSmart hazard include:

- Zone 1-2 defensible space around most structures is adequate based on fuels reduction work completed in 2004 however Zone 2-3 defensible space is inadequate and present significant threat to community structures.
- Exterior structure materials consist mainly of fire-resistant roofing materials and combustible siding materials. Wooden porches and decks with exposed undersides are common.

**Structure and Infrastructure Characteristics:**

<b>Factor</b>	<b>Standard</b>
Roofing	Mainly asphalt shingle and metal, scattered old, curled asphalt-shingle roofs at risk to firebrand ignition
Siding	Mainly wood and vinyl, scattered metal and fibre-cement board
Decks/Porches	Wood with exposed undersides
Access	All-weather gravel, adequate width and turn-around radius
Water	None
Power	Overhead distribution
Heating Fuel	Propane tanks - some at risk to wildfire
Road/Address Signage	None



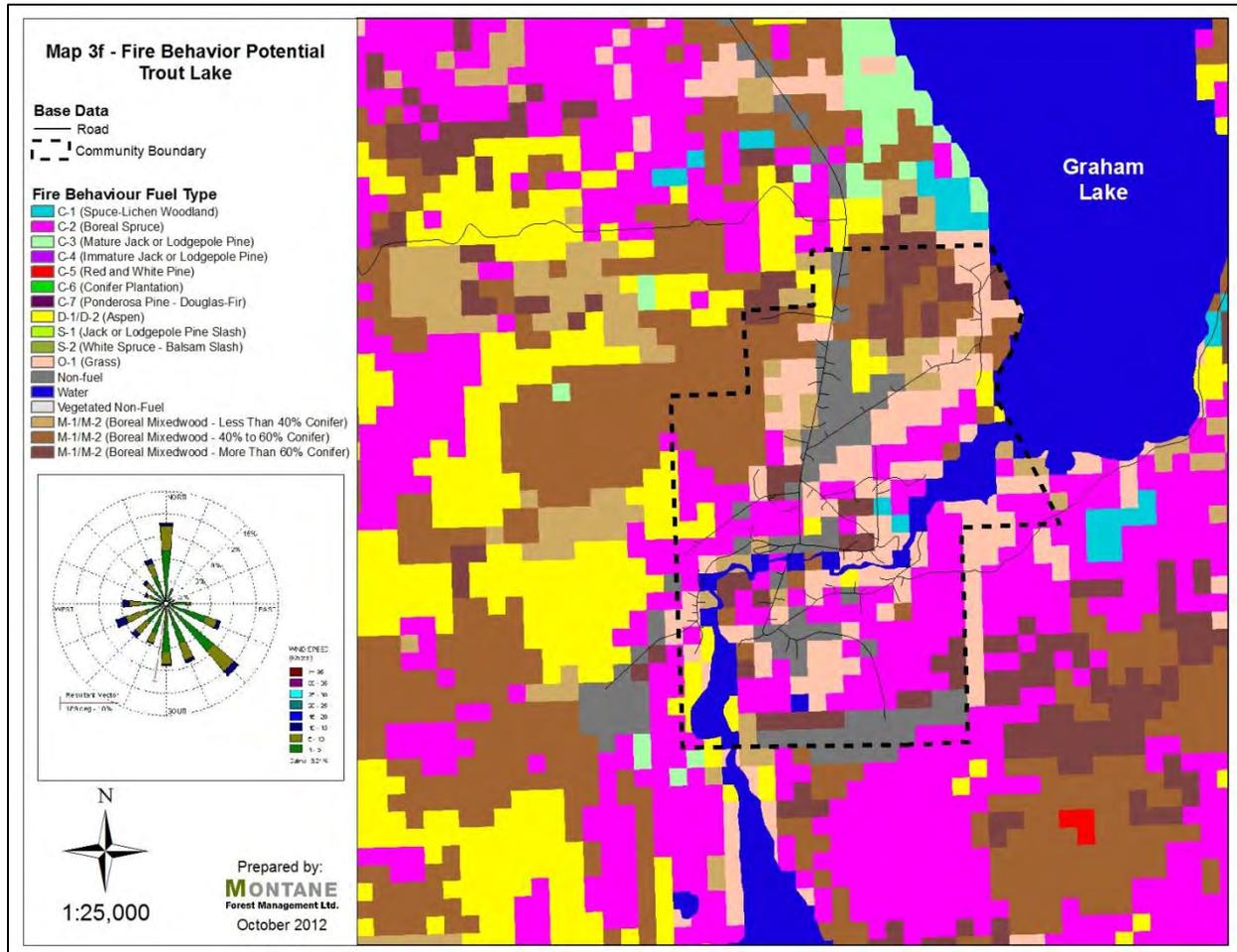
Adequate Zone 1-2 Defensible Space



Inadequate Zone 1-2 Defensible Space

### 3.2.5 Trout Lake

Trout Lake and area is dominated with boreal spruce (C-2) fuels with patches of mixedwood (M-1/M-2), deciduous (D-1), mature jack pine (C-3), and native grass (O1) fuels surrounding and within the community (Map 3f). The potential for landscape-level and community-level wildfire is High.



Factors influencing FireSmart hazard include:

- Zone 1-2 defensible space is adequate for most structures, due to a fuels reduction program conducted in 2005/06, however lack of clearance from native grass fuels is common.
- Zone 2-3 defensible space is marginal and presents high wildfire threat to many structures.
- Exterior structure materials consist mainly of fire-resistant roofing materials and combustible siding materials. Wooden porches and decks with exposed undersides are common.

**Structure and Infrastructure Characteristics:**

<b>Factor</b>	<b>Standard</b>
Roofing	Mainly asphalt shingle and metal, scattered old, curled asphalt-shingle roofs at risk to firebrand ignition
Siding	Mainly wood/vinyl and log, scattered metal and fibre-cement board
Decks/Porches	Wood with exposed undersides
Access	All-weather gravel, adequate width and turn-around radius
Water	None
Power	Overhead distribution
Heating Fuel	Propane tanks - some at risk to wildfire
Road/Address Signage	None



Adequate Zone 1-2 Defensible Space



Inadequate Zone 2-3 Defensible Space

## 4 Vegetation Management Options

The goal of vegetation management is to create a fuel-reduced buffer between structures and flammable wildland vegetation to reduce the intensity and rate of spread of wildfire approaching or leaving the development. 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
- Fuel reduction
- Species conversion

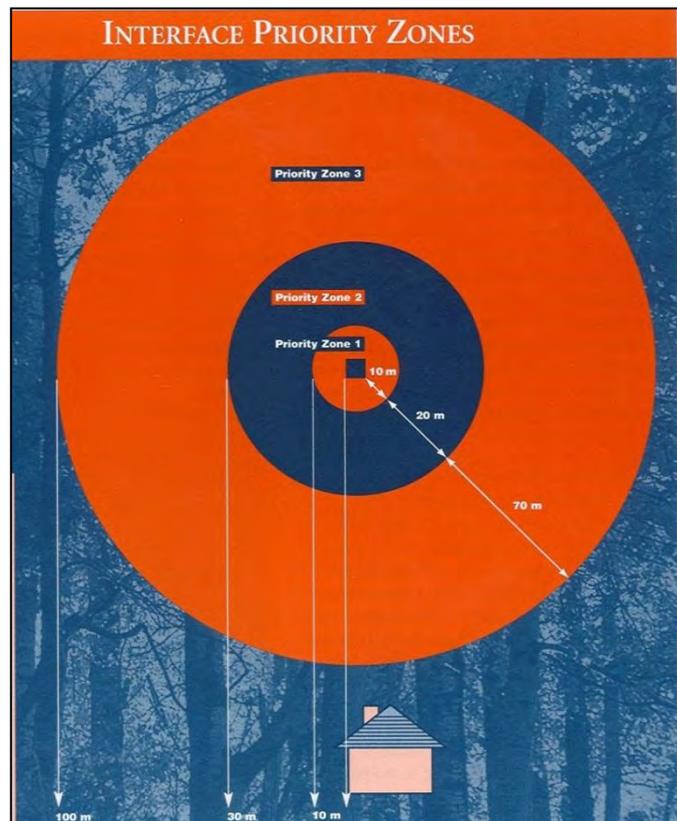
Complete descriptions of the methods included in each of the above options are included in *“Fire-Smart Protecting Your Community from Wildfire”* (Partners in Protection 2003).

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

**Priority Zone 1:** This area is immediately adjacent to a given structure and extends outward in all directions for a recommended minimum of 10 metres on flat terrain. The main objective of vegetation management within Zone 1 is to create an environment that will not support fire of any kind. In some situations, this may be the only zone that residents and development owners/operators need to manage. Fuel removal and species conversion are the recommended vegetation management options for Zone 2.

**Priority Zone 2:** This area begins 10 metres from the structure and extends to 30 metres from the structure. The main objective of vegetation management within Zone 2 is to create an environment that will only support wildfires of lower intensity and rate of spread. Fuel reduction and/or fuel removal are the recommended vegetation management options for Zone 2.

**Priority Zone 3:** This area begins 30 metres from the structure and extends to 100 metres or further from the structure. Vegetation management in Zone 3 may only be necessary in cases where dense coniferous vegetation or steep topography warrant action in this zone. Fuel reduction, fuel removal, and/or species conversion are the recommended vegetation management options for Zone 3.



#### 4.1 Existing and Proposed Vegetation Management

Vegetation management is proposed at the structure (Zone 1-2) and community (Zone 2-3) levels to provide FireSmart defensible space adjacent to structures and at the landscape level (Zone 3) to provide containment areas from landscape-level wildfire.

##### Zone 1-2

Zone 1-2 is the *highest priority area* for vegetation management and is typically the responsibility of the homeowner. The majority of structures in the six communities have adequate Zone 1 defensible space however some have inadequate clearance from unmaintained native grass and/or coniferous forest fuels. 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 1-2 defensible space around their structures including:

- Removal and reduction of flammable forest vegetation within 30 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

##### Zone 2-3

Zone 2-3 vegetation management is typically the responsibility of the Municipal District of Opportunity No. 17 or Alberta Environment and Sustainable Resource Development. Zone 2-3 vegetation management areas for Municipal and Crown lands are recommended based on hazard and risk (Maps 4a–4f) and are categorized as Priority A or B, with Priority A being higher priority.

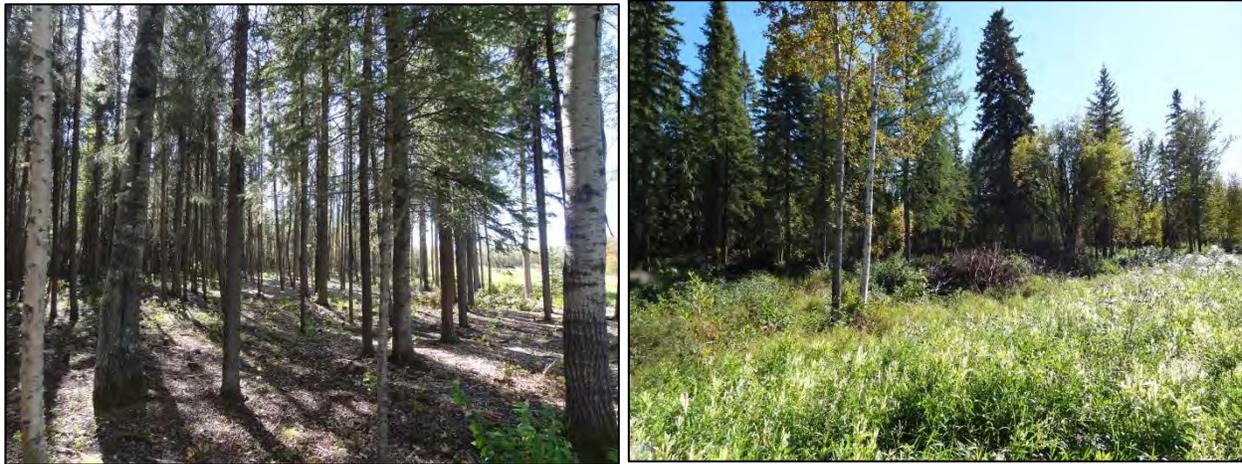
Conceptual vegetation management areas are offered in this plan with the understanding that *detailed fuel modification plans must be developed prior to implementing any of these projects.*

**Recommendation 2:** Zone 2-3 vegetation management is the responsibility of the landowner or land manager and should be completed based on the priorities identified in this plan. Detailed fuel modification prescriptions must be developed for each proposed Zone 2-3 vegetation management project prior to implementation.

### 4.1.1 Wabasca (Map 4a)

#### a) Existing Fuel Modification

Fuels reduction has been completed by ESRD in two locations on Neewatin Drive/Mistassiniy Rd and in one location behind the dwellings on Auger Road. The Neewatin Drive project requires disposal of brush piles. Additional proposed fuels reduction is recommended for both of these projects.

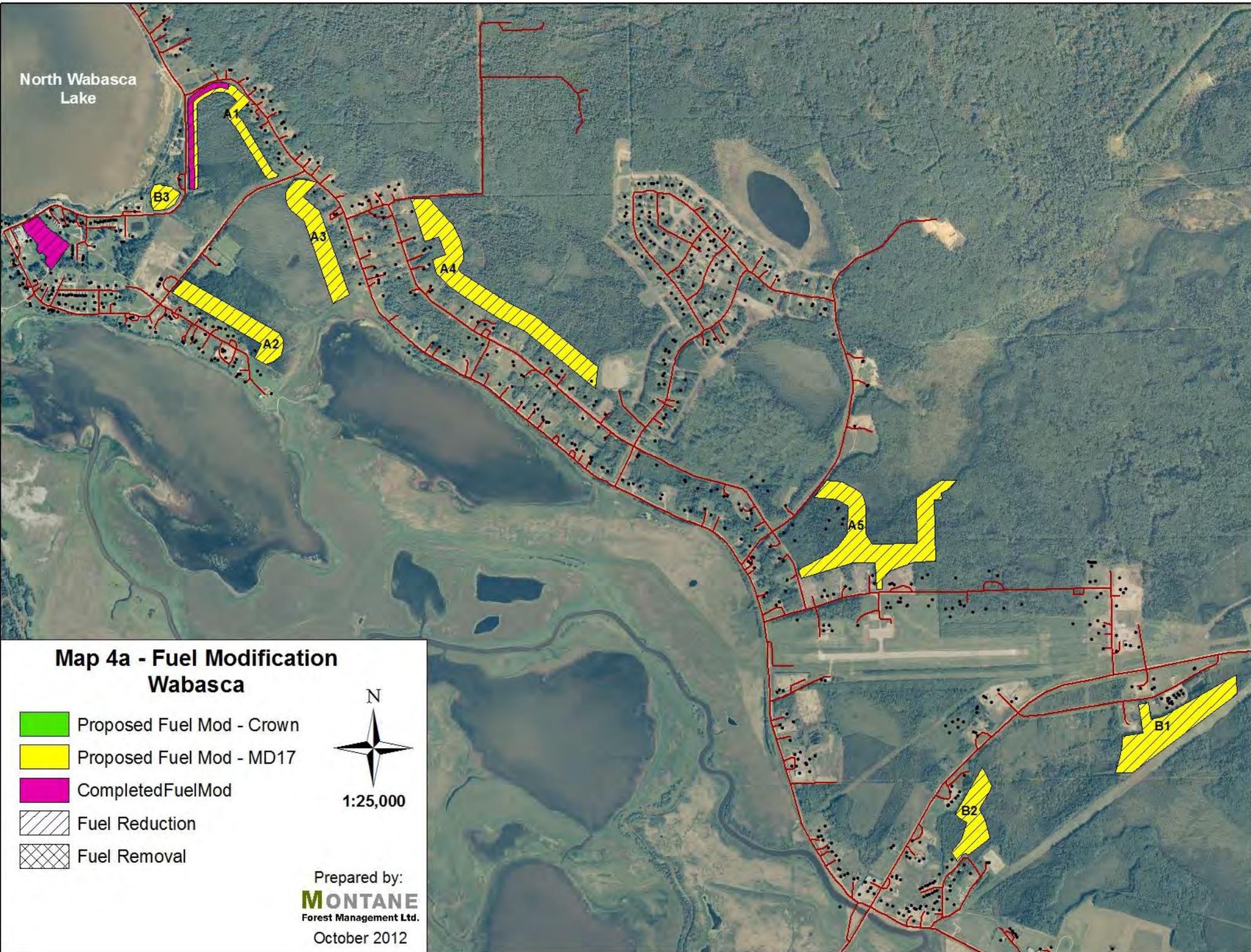


The ESRD hazard reduction burn program has been ongoing for many years and continues each spring with several successful burns to remove cured grass fuels in the community. This program should continue.

#### b) Proposed Zone 2-3 Fuel Modification

Priority	Label	Area (Ha)	Proposed Fuel Modification Type	Land Manager(s)
A1	Neewatin Dr/Mistassiniy Rd	4.5	▪ Thin/Prune/D&D	▪ MD 17
A2	Auger Rd	7.4	▪ Thin/Prune/D&D	▪ MD 17
A3	Misstassiniy Rd N	7.3	▪ Thin/Prune/D&D	▪ MD 17
A4	Waskway Dr W	15.7	▪ Thin/Prune/D&D	▪ MD 17
A5	Caribou Cres/Airport Rd	16.4	▪ Thin/Prune/D&D	▪ MD 17
B1	Canada North Camp	11.0	▪ Thin/Prune/D&D	▪ MD 17
B2	Gullion St	5.3	▪ Thin/Prune/D&D	▪ MD 17
B3	Ranger Station	1.7	▪ Thin/Prune/D&D	▪ MD 17
<b>Total</b>		<b>69.3 ha</b>		<b>MD 17 (69.3 ha) Crown ( 0.0 ha)</b>

North Wabasca  
Lake



### Map 4a - Fuel Modification Wabasca

-  Proposed Fuel Mod - Crown
-  Proposed Fuel Mod - MD17
-  Completed Fuel Mod
-  Fuel Reduction
-  Fuel Removal



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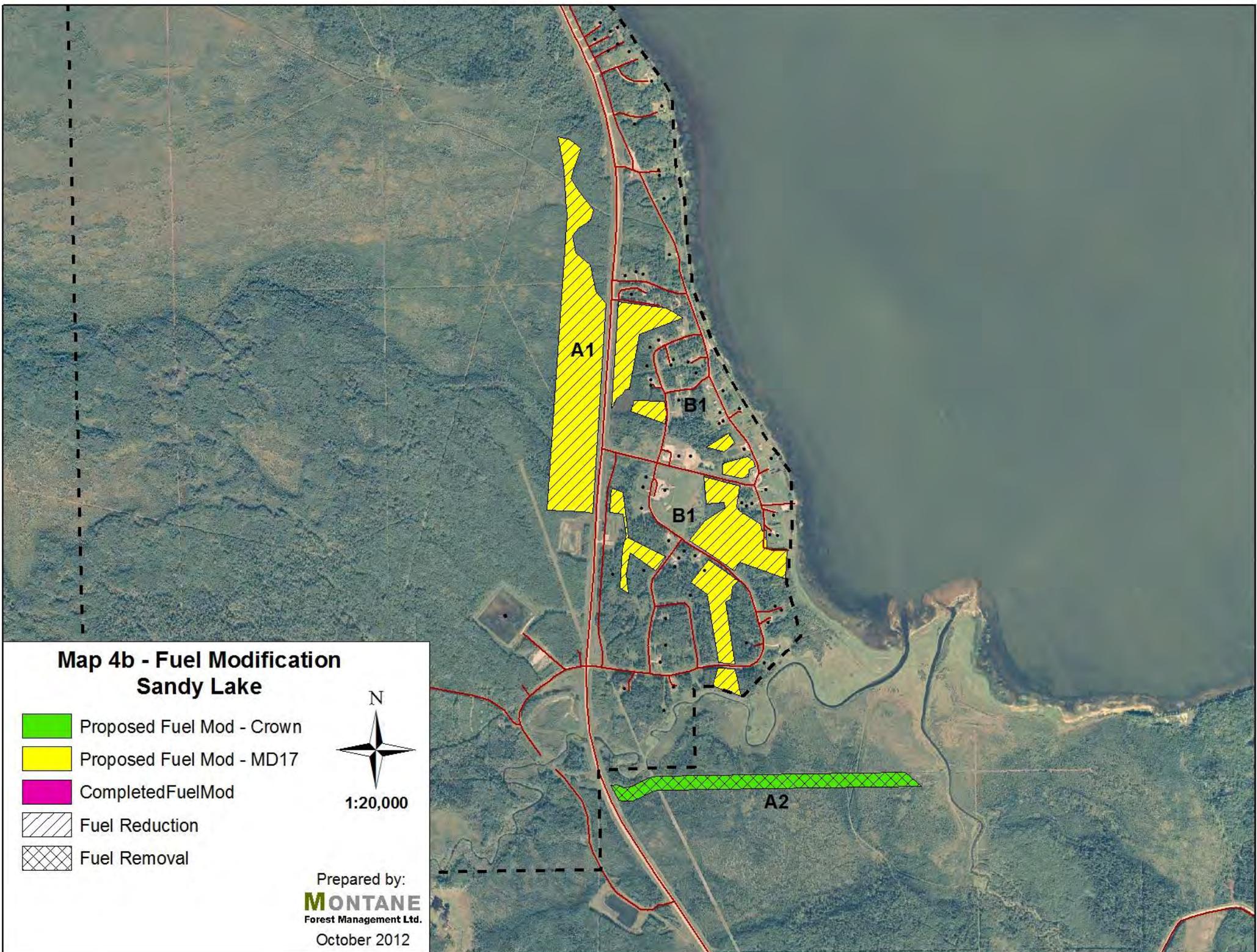
#### 4.1.2 Sandy Lake (Map 4b)

a) **Existing Fuel Modification**

There are no existing fuel modification areas for Sandy Lake.

b) **Proposed Zone 2-3 Fuel Modification**

Priority	Label	Area (Ha)	Proposed Fuel Modification Type	Land Manager(s)
A1	Hwy 813 West	24.1	▪ Thin by Mulch	▪ MD 17
A2	Sandy Lake South Fireguard	8.0	▪ Mulch	▪ Crown
B1	Sandy Lake Community	23.7	▪ Thin/Prune/D&D	▪ MD 17
<b>Total</b>		<b>55.8 ha</b>		<b>MD 17 (47.8 ha) Crown ( 8.0 ha)</b>



### Map 4b - Fuel Modification Sandy Lake

-  Proposed Fuel Mod - Crown
-  Proposed Fuel Mod - MD17
-  Completed Fuel Mod
-  Fuel Reduction
-  Fuel Removal



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### 4.1.3 Chipewyan Lake (Map 4c)

#### a) Existing Fuel Modification

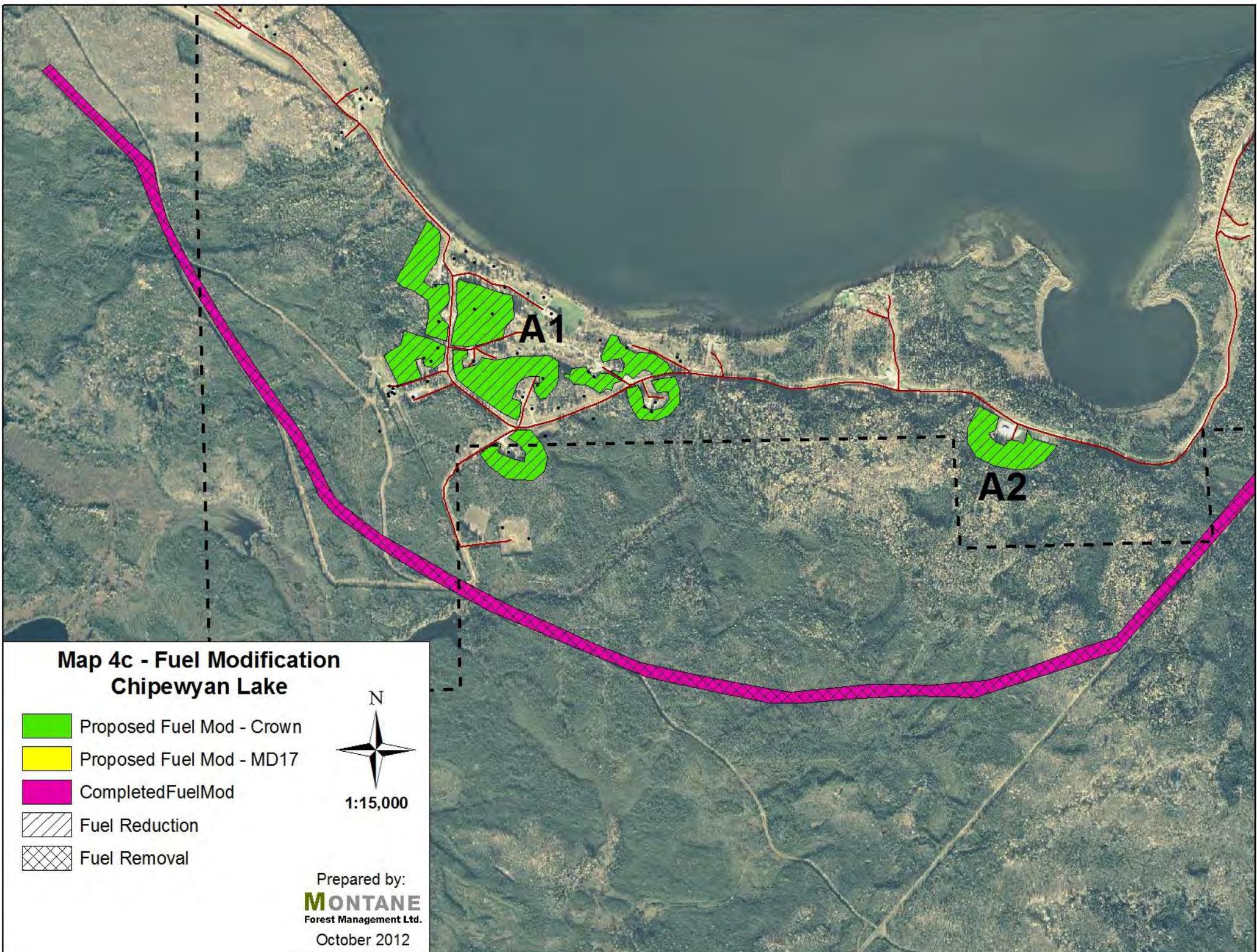
A 50 metre wide fireguard, established around the south perimeter of the community in 2007, provides an excellent containment line from wildfire threat from the south.

There has not been any other fuels reduction within the community.



#### b) Proposed Zone 2-3 Fuel Modification

Priority	Label	Area (Ha)	Proposed Fuel Modification Type	Land Manager(s)
A1	Chipewyan Lake	18.0	▪ Thin/Prune/D&D	▪ Crown
A2	Chipewyan Lake Community Hall	2.9	▪ Thin/Prune/D&D	▪ Crown
<b>Total</b>		<b>20.9 ha</b>		<b>MD 17 (0.0 ha) Crown ( 20.9 ha)</b>



**Map 4c - Fuel Modification  
Chipewyan Lake**

-  Proposed Fuel Mod - Crown
-  Proposed Fuel Mod - MD17
-  Completed Fuel Mod
-  Fuel Reduction
-  Fuel Removal



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#### 4.1.4 Red Earth Creek (Map 4d)

##### a) Existing Fuel Modification

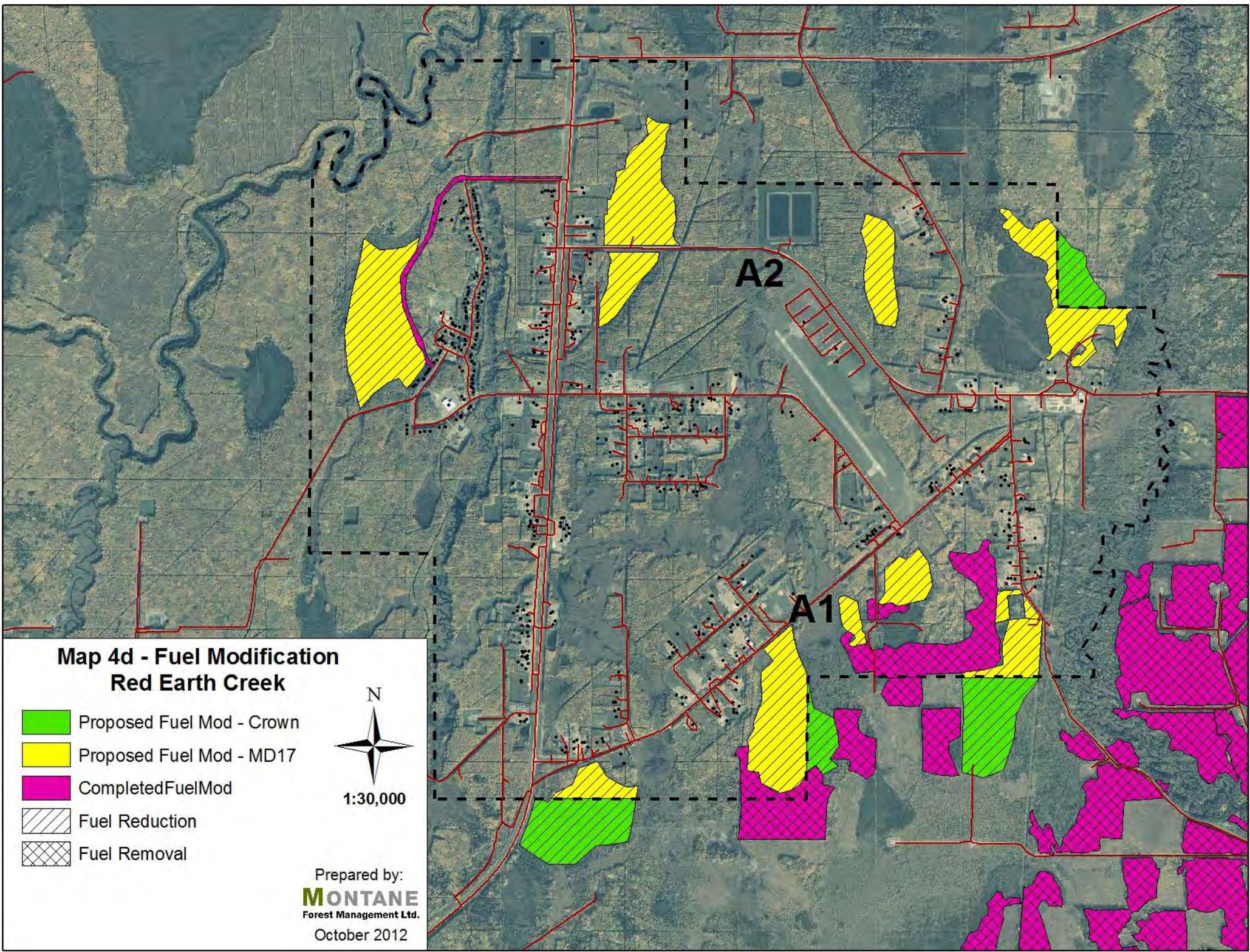
Fuels removal through commercial timber harvesting has been completed during the winter of 2011/12. Brush piles from harvesting still remain in several of the blocks on the south perimeter of Red Earth Creek and require disposal by burning.



A fireguard was constructed around the northwest portion of the community several years ago. This guard requires grass mowing.

##### b) Proposed Zone 2-3 Fuel Modification

Priority	Label	Area (Ha)	Proposed Fuel Modification Type	Land Manager(s)
A1	Red Earth South	116.7 2.8	<ul style="list-style-type: none"> <li>▪ Thin by Mulch</li> <li>▪ Thin/Prune/D&amp;D</li> </ul>	<ul style="list-style-type: none"> <li>▪ MD 17 (64.1 ha)</li> <li>▪ Crown (55.4 ha)</li> </ul>
A2	Red Earth North	118.2	<ul style="list-style-type: none"> <li>▪ Thin by Mulch</li> </ul>	<ul style="list-style-type: none"> <li>▪ MD 17 (108.2)</li> <li>▪ Crown (10.0)</li> </ul>
<b>Total</b>		<b>237.7 ha</b>		<b>MD 17 (172.3 ha)</b> <b>Crown ( 65.4 ha)</b>



**Map 4d - Fuel Modification  
Red Earth Creek**

-  Proposed Fuel Mod - Crown
-  Proposed Fuel Mod - MD17
-  Completed Fuel Mod
-  Fuel Reduction
-  Fuel Removal



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### 4.1.5 Peerless Lake

**a) Existing Fuel Modification**

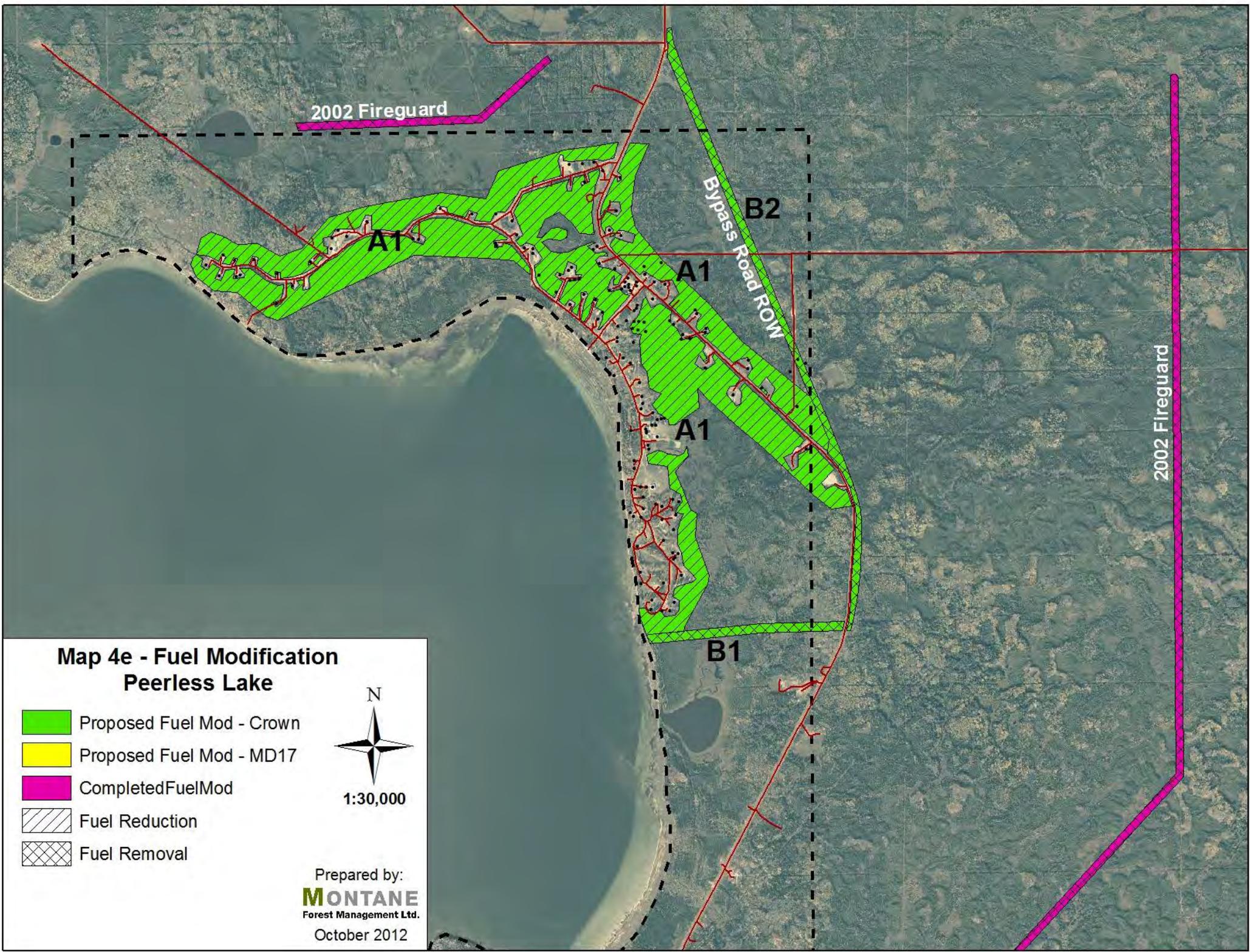
Zone 1-2 (0-30m) fuels reduction was completed by the community of Peerless Lake through a 2004 FRIAA FireSmart grant and two fireguards were constructed in 2002 due to a wildfire to the east of Peerless Lake. An inspection of the fireguards was not able to be conducted however it is anticipated that brushing and/or mowing of these guards would be required.



A bypass road was cleared to the east of the main Peerless/Trout access road several years ago and has now regrown with grass and deciduous brush. Mulching this right-of-way is recommended to improve its effectiveness as a fireguard.

**b) Proposed Zone 2-3 Fuel Modification**

Priority	Label	Area (Ha)	Proposed Fuel Modification Type	Land Manager(s)
A1	Peerless Lake Community	213.2	▪ Thin/Prune	▪ Crown
B1	South Fireguard	7.7	▪ Mulch	▪ Crown
B2	East Fireguard	20.7	▪ Mulch	▪ Crown
<b>Total</b>		<b>241.6 ha</b>		<b>MD 17 (0.0 ha) Crown ( 241.6 ha)</b>



2002 Fireguard

Bypass Road ROW

2002 Fireguard

A1

A1

A1

B2

B1

### Map 4e - Fuel Modification Peerless Lake

-  Proposed Fuel Mod - Crown
-  Proposed Fuel Mod - MD17
-  Completed Fuel Mod
-  Fuel Reduction
-  Fuel Removal



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#### 4.1.6 Trout lake

a) **Existing Fuel Modification**  
 Zone 1-2 (0-30m) fuels reduction and a 60 metre wide fireguard were completed by the community of Trout Lake through a 2005 FRIAA FireSmart grant. The fireguard requires mulching to remove recent re-growth.



#### b) **Proposed Zone 2-3 Fuel Modification**

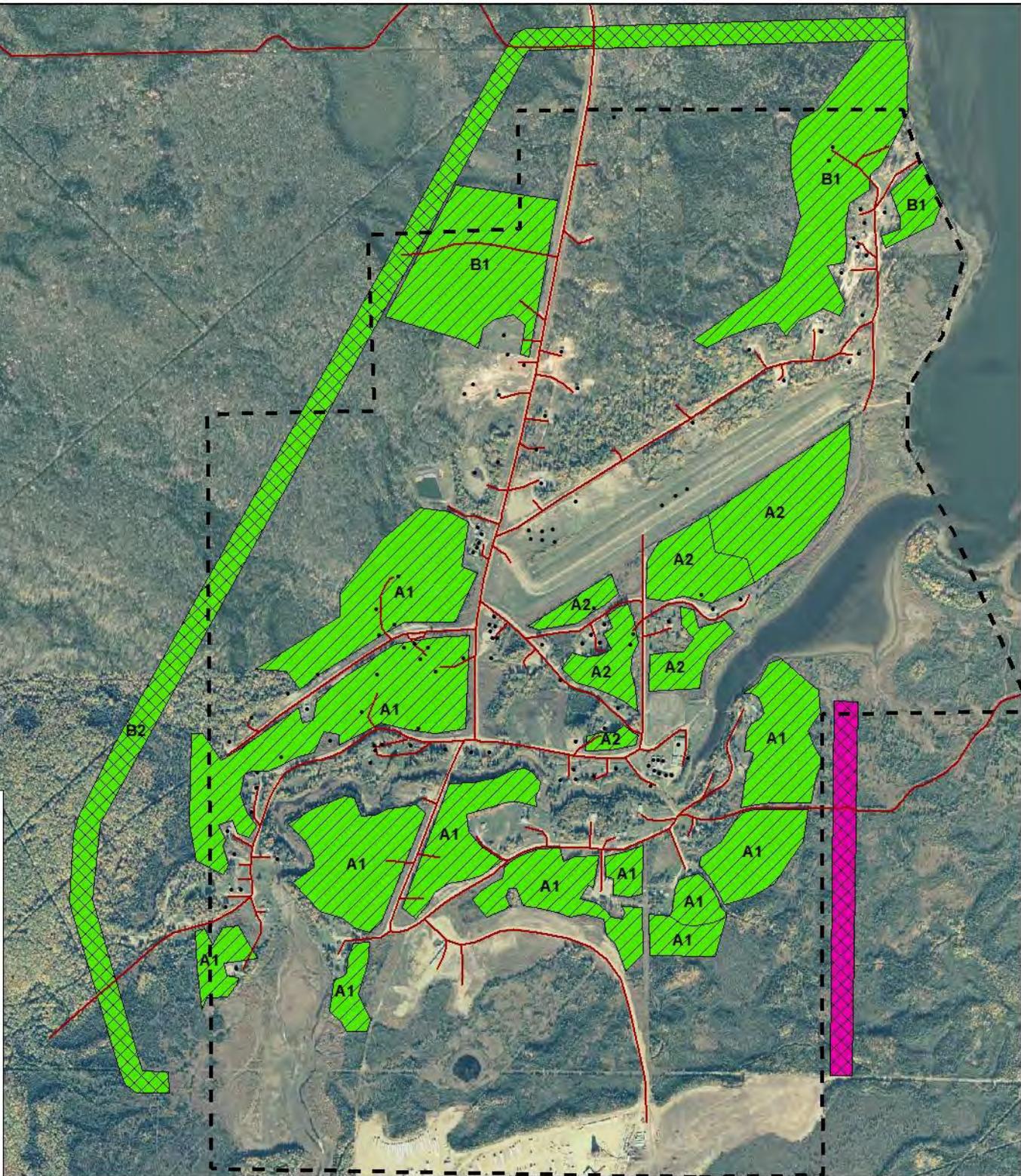
Priority	Label	Area (Ha)	Proposed Fuel Modification Type	Land Manager(s)
A1	Trout Lake Perimeter	61.3	<ul style="list-style-type: none"> <li>▪ Thin/Prune</li> <li>▪ Thin by Mulch</li> </ul>	<ul style="list-style-type: none"> <li>▪ Crown</li> </ul>
A2	Trout Lake Interior	18.6	<ul style="list-style-type: none"> <li>▪ Thin/Prune</li> <li>▪ Thin by Mulch</li> </ul>	<ul style="list-style-type: none"> <li>▪ Crown</li> </ul>
B1	Trout Lake North Perimeter	29.2	<ul style="list-style-type: none"> <li>▪ Thin/Prune</li> </ul>	<ul style="list-style-type: none"> <li>▪ Crown</li> </ul>
B2	Trout Lake West Fireguard	25.8	<ul style="list-style-type: none"> <li>▪ Mulch</li> </ul>	<ul style="list-style-type: none"> <li>▪ Crown</li> </ul>
<b>Total</b>		<b>134.9 ha</b>		<b>MD 17 (0.0 ha) Crown ( 134.9 ha)</b>

### Map 4f - Fuel Modification Trout Lake

-  Proposed Fuel Mod - Crown
-  Proposed Fuel Mod - MD17
-  Completed Fuel Mod
-  Fuel Reduction
-  Fuel Removal



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## **4.2 Vegetation Management Maintenance**

Fuel modification area maintenance schedules depend on many factors including fuel type, soil and moisture conditions, and specific weather events. It is suggested that land managers provide periodic inspections of their fuel modification project areas and complete maintenance as required. It is projected that fuel modification maintenance will be required at least each five-year period.

**Recommendation 3:** Ensure that all existing fuel modification projects are inspected on a regular basis and maintained as necessary to ensure fuel modification effectiveness. Maintenance is the responsibility of the land manager or landowner.

## 5. Development and Legislation Options

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

### 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 with scattered combustible old asphalt-shingle roofs.

Siding materials are varied and primarily include combustible wood and vinyl with scattered log and fire resistant metal, stucco, and fibre-cement board.

Open undersides on decks and porches are common, increasing the potential for flammable debris accumulation and firebrand ignition.



### 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, utility installation standards that do not increase risk to emergency responders during a wildfire, and road and address signage that allows responders to easily identify properties under wildfire conditions.

#### 5.2.1 Access

Access road standards throughout the planning area are mainly adequate for an interface community. Most access roads are all-weather loop-road or dead-end design with adequate turnaround dimensions for fire apparatus.



### 5.2.2 Water Supply

Municipal pressurized fire hydrant water-supply is provided for Wabasca, West Red Earth Creek, and for the Sandy Lake school and firehall. Trout Lake, Peerless Lake, Chipewyan Lake, East Red Earth Creek and Sandy Lake residential rely on water supply from water tenders or natural sources.

### 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.

#### a) Electrical Power

Power distribution and service lines are above-ground with several at risk to falling trees.



#### b) Heating Fuel

Heating fuel is provided by underground natural gas lines for Wabasca and Red Earth Creek with scattered above-ground propane tanks. Sandy Lake, Chipewyan Lake, Peerless Lake, and Trout Lake rely on above-ground propane tank supply with some at risk to wildfire impingement.



**Recommendation 4:** Establish and implement a powerline tree-freeing program with the distribution power provider to reduce the threat of wildfire ignition and risk to firefighters from downed powerlines.

**Recommendation 5:** Ensure adequate FireSmart defensible space is established and maintained around propane tanks.

### 5.2.4 Road and Address Signage

FireSmart standards (Partners in Protection 2003) recommend the following standards for interface community road and address signage:

- Signs should be clearly visible and legible from the road and use a consistent system that provides for sequenced or patterned numbering and non-duplicated naming.
- Signs should be built of non-combustible materials and mounted 2 metres above the surface of the road.
- Letters, numbers, and symbols used on all signs should be at least 10 centimetres high with a 12 millimetre stroke, contrast with the background color of the sign, and be reflective.

Road and address signage meets FireSmart standards in Wabasca, Red Earth Creek, and Sandy Lake and is inadequate in Chipewyan Lake, Peerless Lake and Trout Lake.



**Recommendation 6:** Implement the standardized MD 17 rural addressing system for Chipewyan Lake, Peerless Lake, and Trout Lake.

### 5.3 Legislation Options

Legislating *FireSmart* requirements can assist municipalities to achieve their FireSmart objectives. The Municipal District of Opportunity utilizes the Municipal Government Act, Municipal Development Plan (MDP), Land Use Bylaw (LUB), and Area Structure Plans (ASP) to control land use and development.

A review of these documents revealed that there are no references to wildfire threat or FireSmart development requirements in the Municipal Development Plan (2003), Land Use Bylaw (2003), or Wabasca (2007) and Sandy Lake (2003) Area Structure Plans. The Red Earth Creek Area Structure Plan (2009) does refer to FireSmart development practices in Section 4.1.1(h).

**Recommendation 7:** The Municipal District of Opportunity should complete a review and revision of all development legislation and policies to include wildfire as a development constraint and the need for FireSmart planning and mitigation measures at the development planning and implementation stages.

The following recommended minimum standards are offered for inclusion into the development legislation and policy documents.

## Municipal Development Plan

Item	Recommended Minimum
Identification of Wildfire as a Development Constraint	Wildfire is a hazard within the MD of Opportunity. All development must recognize the importance of “FireSmart” practices and follow those practices in both development and operations.
Need for a Wildfire Risk Assessment	The Development Authority shall: <ol style="list-style-type: none"> <li>Ensure that proposed development in all areas identified as Moderate, High, or Extreme wildfire hazard has a Wildfire Risk Assessment prepared by a qualified professional and evaluated by the Development Authority prior to approval;</li> <li>Ensure that all recommendations provided in the Wildfire Risk Assessment are completed prior to subdivision development.</li> </ol>

## Land Use Bylaw and Area Structure Plans

Item	Recommended Minimum
Wildfire Risk Assessment Contents	An application for a development permit for lands with Moderate, High, or Extreme wildfire hazard must be accompanied by a Wildfire Risk Assessment, prepared by a qualified professional including but not limited to the following: <ol style="list-style-type: none"> <li>Present wildfire hazard assessment;</li> <li>Proposed structural, vegetation management, and infrastructure development standards;</li> <li>Projected wildfire hazard assessment based on proposed development standards;</li> <li>Recommendations to reduce the wildfire hazard to development.</li> </ol>
Referral of Development Applications within Proximity of Wildfire Hazard Areas	Applications for development located within 2.0 km of areas with Moderate, High, or Extreme wildfire hazard areas shall be referred to Alberta Environment and Sustainable Resource Development for comment prior to any decision by the Development Authority.
Exterior Building Materials	Add a Section(s) that <u>applies to all</u> Land Use Districts with the following: <ol style="list-style-type: none"> <li>All roofing materials on new, replacement, or retrofitted dwellings, accessory buildings and commercial buildings shall meet a minimum Class “C” U.L.C. rating or as specified by the Development Authority based on wildland/urban interface hazard and risk.</li> <li>All siding materials on new, replacement, or retrofitted dwellings, accessory buildings and commercial buildings within 30 metres of Moderate, High and Extreme FireSmart hazard class areas shall use fire-resistant materials a minimum of 12 millimetres thick and extend from ground level to the roofline.</li> <li>All new dwellings, accessory buildings, and commercial buildings with exposed undersides and/or with raised decks and porches less than 2 metres from ground level shall be sheathed from the floor level to the ground level with fire-resistant material to prohibit the entry of sparks and embers under the structure.</li> </ol>
Landscaping and Vegetation Management	Review all references to landscaping and buffers to include the following: <ol style="list-style-type: none"> <li>All new dwellings, accessory buildings, and commercial buildings shall establish and maintain <i>FireSmart</i> defensible space for a minimum of 30 metres from the structure or to lot boundary, whichever is less.</li> <li>All new dwellings, accessory buildings, and commercial buildings shall have a minimum of one-metre of non-combustible surface cover (gravel, rock, concrete, etc.) around the perimeter of the structure. All new exposed decks, greater than 2 metres from ground level shall require a minimum one-metre of non-combustible surface cover placed around the outside perimeter and underneath.</li> <li>Fire-resistant species shall be used for all landscaping within 30 metres of the all structures.</li> </ol>
Infrastructure Standards	<p><b>Fire Suppression Water Supply:</b> All new multi-lot subdivision developments and commercial developments shall be required to provide adequate fire suppression water supply as required by the Development Authority.</p> <p><b>Access:</b> Access to all new dwellings and commercial buildings shall meet adequate FireSmart standards for emergency vehicle access as requested by the Development Authority.</p> <p><b>Propane Tanks:</b> All above-ground liquefied petroleum gas (LPG) tanks, greater than or equal to 80 US gal (420lbs) capacity, shall have a minimum of 3 metres non-combustible defensible space, meeting FireSmart standards, surrounding the tank and shall be maintained at minimum annually or sooner as required.</p>

## 6. Education and Communication Options

Government agencies, local residents, and industrial land users must share a common vision in order to meet the goals and objectives of the Wildfire Mitigation Strategy. The goal of the Strategy is to “provide a guide for the M.D. of Opportunity to implement FireSmart initiatives while retaining and/or enhancing the integrity of the forest environment”. To that end, the strategies developed to protect the community and infrastructure from wildfire must be presented to stakeholders so that they can understand and support the programs and projects identified in the plan.

### 6.1 Public Consultation

Stakeholders must be consulted and informed if implementation of the plan is to be successful. The first step in the consultation process is to identify who the stakeholders are and then develop a communications plan. The stakeholders are:

- **Local Residents**; the people who reside within the M.D. of Opportunity communities. Identify key representatives in the community who are interested in FireSmart initiatives
- **Provincial Government Officials**; must take a lead role in the communications and education of all stakeholders in the Planning Area. Provincial government officials include personnel representing a number of divisions in AESRD, mainly; the Forestry Division (FD), Lands Division (LD), and the Fish and Wildlife Division (FWD). It is imperative that divisional representatives reach agreement through the internal referral process so that the Department speaks as one voice.
- **Municipal Government Officials**; includes representation from elected officials, subdivision and planning authorities and emergency services/fire personnel. Municipal officials must also take a lead role in promoting FireSmart activities in the M.D.
- **Forest Products Industry**; must share responsibility for supporting FireSmart strategies on their land base. The timber industry plays a key role in managing vegetation and maintaining a healthy growing stock through planning, harvesting and regeneration of merchantable timber in the M.D. It is important that members of the public understand this concept.
- **Oil and Gas Industry**; A FireSmart Committee provides an opportunity to integrate development with government and other industrial users.
- **Utilities Industry**; ATCO Electric supplies electricity to the planning area.
- **First Nations**; local and neighboring first nations people utilize lands in the M.D. for traditional hunting and fishing. It is important that they are informed and consulted on land management issues that support FireSmart activities.

Activities to improve wildfire preparedness are part of a larger process of taking responsibility for choosing to live and work in an area that is at risk to wildland fire. The process does not end with creating vegetation-free space, improving access, or utilizing fire-resistant building materials but includes a variety of ongoing networking activities that create and enhance partnerships. Effective public education is the key to building those partnerships and providing awareness in the wildland/urban interface. Elected officials, first nations, community planners, developers, government, industry, and homeowners all need to work together. In order to do so, they need the knowledge to make informed decisions.

Public education is likely the most challenging component of the wildland/urban interface issues. People are usually optimistic that it will never happen in their back yard and believe that if it does happen that the Local Fire Department and the Wildfire Management Branch of AESRD will look after the problem before it impacts them. Fire agencies have done an excellent job of demonstrating their professions to mitigate emergencies and in most cases are successful. However, wildfire conditions may occur that is beyond the capabilities of emergency responders. The public needs to understand that these types of fires would impact them despite the best efforts of fire agencies. This illustrates the need to provide public education aimed at reducing their risk to wildfire and ensuring that their activities do not start a fire. Public education and community involvement are useful tools that can lead homeowners in interface fire risk areas into undertaking their own preventative measures thus negating the need for local government intervention.

## **6.2 Format**

Public education may be delivered in many formats. Following are some options to consider:

- FireSmart pamphlets can be hand delivered to targeted residents living in the wildland/urban interface areas.
- FireSmart messages can be posted in the local newspapers and radio stations to get information out to the public.
- The Municipal fire department and Provincial wildfire management staff can join forces to complete targeted hazard assessments in cooperation with the residents. This type of personal contact is a great opportunity to describe to a homeowner what is needed to have a FireSmart property.
- Provide home assessment forms that targeted residents can complete at their leisure.
- Utilize FireSmart posters in public places and at trailheads.
- Consider forming a FireSmart Committee. Organize neighborhood work party to clean up dead and down woody material and have a hot dog roast on the burn piles.
- Utilize FireSmart resources at community events. Book the ESRD Wildfire Management FireSmart trailer for the event. Have Bertie Beaver attend the event along with Sparky the Fire Dog.
- Have a FireSmart open house at Wildfire Management facilities in the community.
- Have a Helitack crew and their helicopter on site in a community. These are great attractions for people and a great opportunity to get the FireSmart message out.
- Incorporate FireSmart principals into community projects to improve parks, trails and green spaces within the community.
- Consult the FireSmart manual (Partners in Protection 2003) for templates that can be utilized to build an effective public education program.

## **6.3 Communications Plan**

The development of FireSmart Mitigation Strategy requires the understanding, cooperation, support, and participation of all stakeholders. The M.D. of Opportunity has a very positive working relationship with all stakeholders in the area, including; Federal and Provincial government departments, local industry and business, aboriginal and Métis organizations and utility providers. Partnership support and involvement is essential to successfully deliver the programs.

### 6.3.1 Objective

The objective of the communications plan is to deliver clear, consistent, science-based effective information that will educate stakeholders and residents of the M.D. of Opportunity and assist them to take ownership in the protection of their homes and property from wildfire.

Target audiences include:

- Municipal District of Opportunity
  - M.D. Council
  - M.D Administrators and Planners
  - Fire Department and Emergency Services providers
- MD of Opportunity residents
- Local utilities providers
- Local media
- Forest and oil & gas industry

The following Communications Delivery Plan can be used to develop a communications strategy to deliver information in a consistent and effective manner.

<b>Goals</b>	<b>Target Audience</b>	<b>Expectations</b>	<b>Action Plan</b>	<b>Responsibility</b>
To present the M.D. of Opportunity FireSmart Mitigation Strategy	<ul style="list-style-type: none"> <li>• MD Council &amp; Administration</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance and support of the Strategy</li> <li>• Education &amp; awareness</li> <li>• Feed back</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation of FireSmart Mitigation Strategy</li> </ul>	<ul style="list-style-type: none"> <li>• MD 17 Legislative Services</li> </ul>
	<ul style="list-style-type: none"> <li>• Residents &amp; local media</li> </ul>	<ul style="list-style-type: none"> <li>• Provide information and receive feed back</li> <li>• Identify areas where improvements could be made</li> <li>• Involve media and project future communications</li> </ul>	<ul style="list-style-type: none"> <li>• Arrange venue</li> <li>• Contact local media</li> <li>• Advertise</li> <li>• Open house presentation of plan</li> </ul>	<ul style="list-style-type: none"> <li>• MD 17 Legislative Services</li> <li>• MD 17 Planning Department</li> <li>• ESRD</li> </ul>
To inform local area residents and increase awareness of FireSmart program in the MD of Opportunity	<ul style="list-style-type: none"> <li>• M.D. of Opportunity residents</li> <li>• Business owners</li> </ul>	<ul style="list-style-type: none"> <li>• To create awareness of wildland/urban interface hazard and risk within the planning area</li> </ul>	<ul style="list-style-type: none"> <li>• News release on implementation of Strategy</li> <li>• Articles on wildland/urban interface</li> <li>• Articles on implementation of vegetation management activities</li> <li>• Reporting of local area wildfire hazard ratings</li> </ul>	<ul style="list-style-type: none"> <li>• MD 17</li> <li>• ESRD</li> <li>• Media</li> <li>• MD 17 Web Site</li> </ul>
To provide information and direction to home owners so they may become FireSmart.	<ul style="list-style-type: none"> <li>• Residents at risk from wildfire</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage homeowners to accept responsibility and take action to minimize wildfire dangers to their property</li> <li>• Provide recommendations for minimizing interface fire hazard</li> </ul>	<ul style="list-style-type: none"> <li>• Mail out to all residents in target areas</li> <li>• Encourage a 10-meter fuel-free zone around each structure (Priority Zone 1)</li> <li>• Encourage thinning &amp; pruning fuels in the area up to 30 meters around each structure.</li> <li>• Develop and distribute FireSmart pamphlets</li> </ul>	<ul style="list-style-type: none"> <li>• MD17</li> <li>• ESRD</li> </ul>

There are a number of public education and communication tools available that can be used to support the communications strategy. The following table identifies some of the more applicable materials that can be easily accessed.

Reference Material	Source
<b>Publications:</b> <ul style="list-style-type: none"> <li>• FireSmart: Protecting your Community from Wildfire.</li> </ul>	Partners in Protection, Edmonton, Alberta, Second Edition, 2003
<b>Videos:</b> <ul style="list-style-type: none"> <li>• Interactive CD: Protecting Your Community from Wildfire.</li> </ul>	Partners in Protection
<b>Brochures:</b> <ul style="list-style-type: none"> <li>• The Home Owner’s FireSmart Manual</li> <li>• Wildfire Evacuation</li> </ul>	Partners in Protection and ESRD.
<b>Websites:</b> <ul style="list-style-type: none"> <li>• <a href="http://www.firesmartcanada.ca">www.firesmartcanada.ca</a></li> <li>• <a href="http://www.srd.gov.ab.ca/wildfires/default.aspx">www.srd.gov.ab.ca/wildfires/default.aspx</a></li> <li>• <a href="http://www.municipalaffairs.gov.ab.ca/ema_index.htm">www.municipalaffairs.gov.ab.ca/ema_index.htm</a></li> <li>• <a href="http://www.fire.cfs.nrcan.gc.ca/index_e.php">www.fire.cfs.nrcan.gc.ca/index_e.php</a></li> <li>• <a href="http://www.firewise.org">www.firewise.org</a></li> <li>• <a href="http://www.aema.alberta.ca">www.aema.alberta.ca</a></li> </ul>	

### 6.3.2 Key Messages

FireSmart assessments identified the need for the following key messages to all residents.

- Development and maintenance of FireSmart Zone 1-2 defensible space surrounding the home, including:
  - Tree, grass and debris maintenance
  - Firewood and combustibles storage
  - Skirting of open undersides on decks and porches
- FireSmart exterior structural material options
- Emergency planning and structure and site preparation during a wildfire

**Recommendation 8:** The MD of Opportunity fire departments should conduct a FireSmart Home Assessment program to provide residents with mitigative options related to the following items in order of priority:

- FireSmart Zone 1 and 2 fuels management
- FireSmart structure and site maintenance focusing on annual maintenance items
- FireSmart structural options including roofing and siding materials, decks/open spaces, and combustibles storage
- Emergency planning including evacuation planning and structure and site preparation during a wildfire

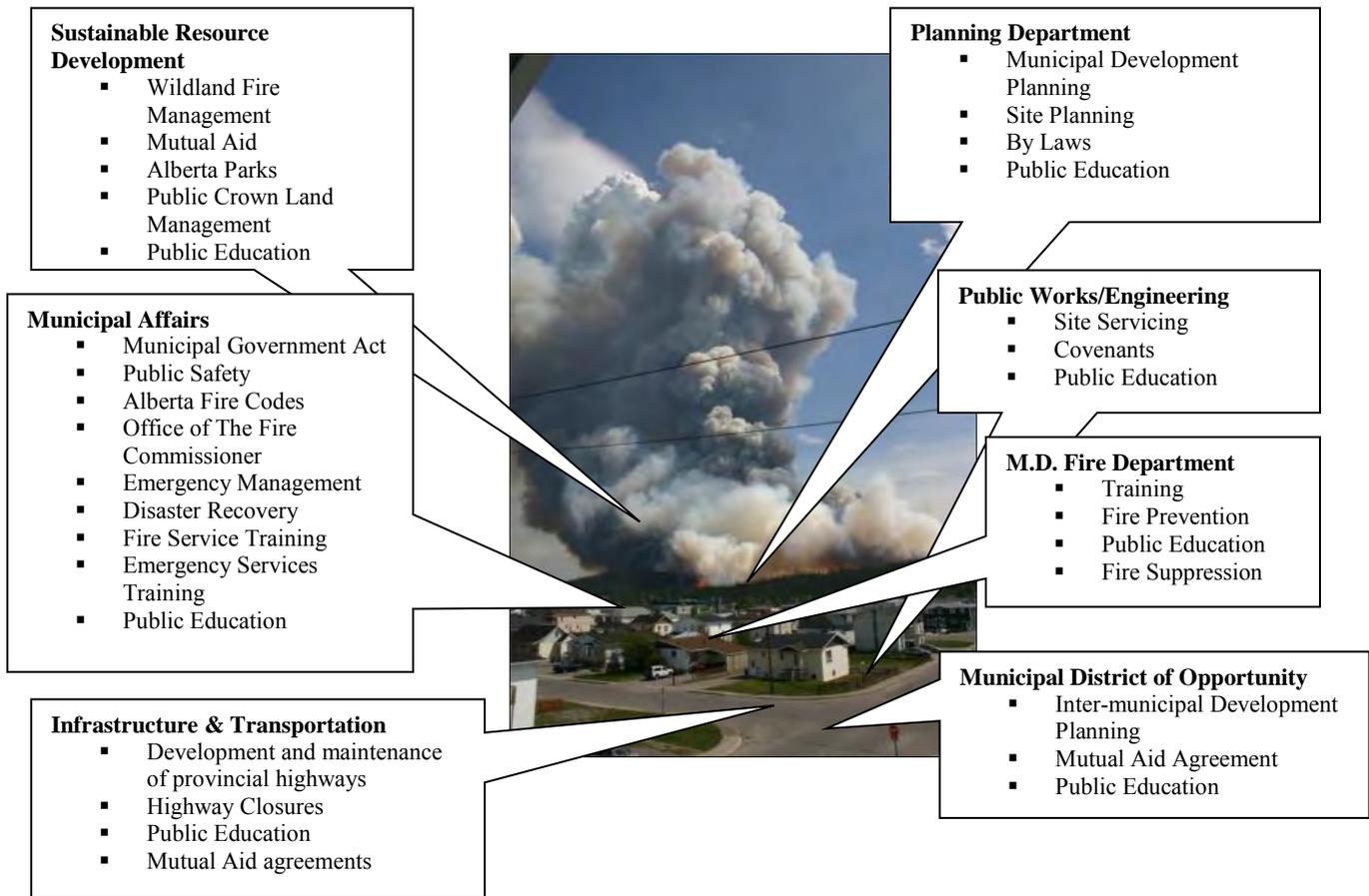
# 7. Inter-Agency Cooperation & Cross-Training

Due to the complex nature of fires in the wildland/urban interface, a multi-agency response is required for both wildfire prevention and suppression. The roles of the various agencies involved in the planning for, engineering of, legislation, education and the suppression of interface fires crosses departmental and government boundaries. Since fires do not recognize boundaries, cooperative and coordinated efforts are required. The following illustrates the levels of government agencies responsible for the various issues involved in preventing and suppressing interface fires. There are a multitude of items that lead to effective interagency cooperation. This section will identify some of those items.

## Provincial Government

## Local Government

### WILDLAND/URBAN INTERFACE



**Levels of Responsible Government Agencies**

## 7.1 Communications

Communications are essential to any relationship. The MD of Opportunity and the Wildfire Management Branch of Environment and Sustainable Resource Development (ESRD) meet on a regular basis to discuss items of mutual interest. During the fire season, the communication between the MD and the Branch can be enhanced by the transfer of fire intelligence information. During periods with a head fire intensity rating above head fire intensity (HFI) 4, the Branch should provide daily wildfire information including weather and fire weather/behavior advisories as well resource commitments in the area. Wildfire behavior and occurrence is predictable, allowing response agencies to prepare and preposition equipment and resources.

In the analysis of many wildland/urban interface incidents, one common denominator is often the lack of effective radio communications between agencies. The Branch and the Fire Department exchange radios frequencies to establish radio communication. The Fire Department can utilize the Branches frequencies in the event of a joint response. This provides each agency with real time fire intelligence and immediate access to the Incident Commander. ESRD has access to the Fire Department radio frequency for mutual-aid incidents.

**Recommendation 9:** Enhance the availability of radio communications by having ESRD provide each of the three Fire Departments with two portable fireline radios during the fire season.

## 7.2 Fire Bans

The Province of Alberta issues fire bans within the Forest Protection Area during times of extreme fire hazard to reduce the incidence of wildfires. All lands within the MD are within the Forest Protection Area. The plan for fire bans should be developed and be approved by the appropriate officials and be ready for implementation as required. There needs to be a trigger for the initiation and termination of fire bans, based on science. Templates for enactment and public education (print, radio, television, and signage) are essential.

In the interest of public safety, the MD may choose to restrict the use fire in Hamlets during periods of high hazard without the issuance of a formal fire ban.

## 7.3 FireSmart Committee

A FireSmart Committee should be organized to guide the implementation of the MD of Opportunity Wildfire Mitigation Strategy. Membership in the committee could include the MD of Opportunity, fire departments, ESRD, residents, industry and business and AESRD representation. Members of the Committee will be able to provide expert advice and assistance for the implementation of FireSmart initiatives.

**Recommendation 10:** Develop a FireSmart Committee, consisting of all relevant stakeholders, to coordinate and lead the FireSmart program for the area.

## 7.4 Cross-Training

In order to respond effectively and safely, both ESRD and fire department staff must receive an appropriate level of training in the others discipline. The intent of cross training is not to make structural firefighters into wildland firefighters or vice versa. The purpose of cross training is to be able to utilize each other's resources and expertise in non-traditional roles in a cooperative manner. It must be recognized that cross training represents a substantial commitment from volunteer firefighters, who must also train for their primary missions.



Fire departments would benefit from the Wildfire Orientation course which can be delivered in one day. A good alternative to this course would be the self-study program “Safety on the Fireline”, which is delivered on CD. Firefighters are also encouraged to complete the self-study Incident Command System 100 program and to attend the Incident Command System 200 program.

As part of their ongoing training initiatives, the Fire Department, regional partners, and ESRD should consider the delivery of the Fire Operations in the Wildland/Urban Interface (S215) course at a central location within the MD. This course includes size up, initial strategy and action planning, structure triage, structure and site preparation, engine operations and fire stream management, aircraft operations, hand crews, heavy equipment operations, controlled fire operations, and safety. This course has the added advantage of bringing all the mutual-aid partners together to enhance interagency cooperation.

Members of the ESRD Wildfire Management Branch should attend a training evening with the Red Earth, Wabasca and Sandy Lake Fire Departments to familiarize themselves with the Departments resources and operations.

**Recommendation 11:** Develop an effective cross training regime of ICS 100/200, Fire Operations in the Wildland Urban Interface (S-215), Wildfire Orientation and Safety on the Fireline. Encourage joint training sessions between the MD Fire Departments and ESRD.

## 8. Emergency Response Planning Options

Municipalities must be prepared to respond to major emergencies that may affect their community. Major emergencies are events of such magnitude that the response to them is often beyond the capability of a single organization. These emergencies often result in a multi-organizational multi-jurisdictional effort requiring cooperation and coordination of activities.

The purpose of a municipality is to develop and maintain safe and viable communities. In accordance with the Emergency Management Act, municipalities are responsible for the direction and control of the emergency response. The Municipal District of Opportunity has an Emergency Management Bylaw (Bylaw 2008-13), through which it has Municipal Emergency Response Committee, Municipal Emergency Management Agency, and an appointed Director of Emergency Management Agency.



This Bylaw is current and meets the needs of the municipality.

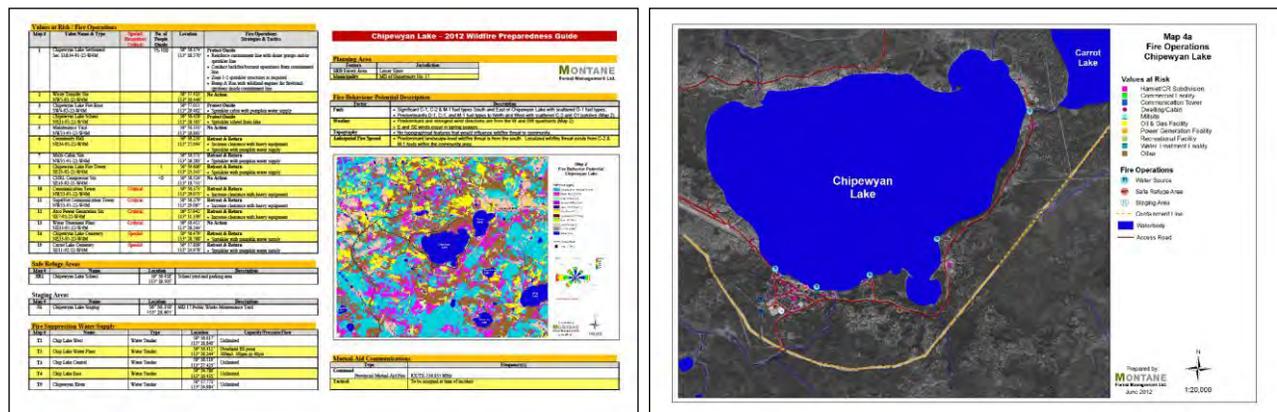
The Director of Emergency Management is responsible for preparing and coordinating emergency plans and programs, providing leadership for the Municipal Emergency Management Agency and for coordinating all emergency services and resources used in emergencies.

### 8.1 Municipal Emergency Plan

The Municipal District of Opportunity Municipal Emergency Plan provides a guide for responding to emergencies that affect the community. The plan provides a prompt and coordinated response to emergencies. It does not replace existing procedures used by responders to deal with routine emergencies. First responders to incidents in the MD of Opportunity may include police, fire, ambulance, and the Alberta ESRD Wildfire Management Branch. These responders must assess the situation and then provide recommendations to the Director of Emergency Management to implement the Municipal Emergency Plan. The implementation of the Plan may then leads to the Declaration of State of Local Emergency in order to provide the municipality and the responders with the necessary support to mitigate the emergency.

## 8.2 Wildfire Preparedness Guides

The MD of Opportunity must be prepared to deal with a wide range of wildland/urban interface fire scenarios. A fire may approach communities from some distance, providing the MD the opportunity to prepare well in advance of the fire's impact on the community. Another scenario for interface fires are those which start in close proximity to the community and are fast moving, wind driven destructive events which demand immediate response. Interface fires may be short duration events or long duration events which require vast commitments of resources to mitigate. In cooperation with ESRD Wildfire Preparedness Guides have been developed for Trout Lake, Peerless Lake, Chipewyan Lake, Red Earth, Sandy Lake and Wabasca. The purpose of the Guides is to identify the values-at-risk, the fire behavior conditions, available resources and strategies to assist emergency response agencies to minimize losses in the wildland/urban interface from a wildfire threat. The Guides are contained in a stand-alone document.



## 8.3 Exercises

Municipalities cannot plan for wildland/urban interface incidents in isolation. All agencies must train and plan in a cooperative effort. Exercises are opportunities to identify the strengths and challenges of Municipal Emergency Plans and emergency organizations. Exercises should be preceded by appropriate training. Exercises will bring together organizations and personnel under controlled circumstance to establish and reinforce relationships and procedures for dealing with events that may be outside of their normal duties and experience.

Table-top exercises are typically conducted in a meeting room setting with both external and internal staff. The staff reviews each other's roles and responsibilities to gain a wider understanding of the emergency response process. Generally, the participants walk through a simulated emergency and react to a variety of challenges. It is recommended that the MD undertake a table-top exercise with a scenario involving a wildland/urban interface fire.

Full-scale exercises present a complex situation in a realistic environment. These type of exercises offer evaluations of operational capabilities of participating agencies. They are also very effective for public education. To be successful, these exercises require detailed planning and dedicated resources to plan and implement.

**Recommendation 12:** Prepare and complete a wildland/urban interface table-top exercise to test the operational effectiveness of the wildfire preparedness guides and train personnel on their use.

## **8.4 Mutual-Aid Agreements**

Emergency planning needs to include the development of effective mutual-aid agreements to deal with incidents beyond the resources of the Municipal District of Opportunity. Mutual-aid agreements need to consider municipal neighbors and government agencies. The agreement must include protocols and procedures to deal with emergencies in an expedient manner.

### **a. Inter-Municipal**

The Municipal District of Opportunity has a mutual-aid agreement with the Municipal District of Lesser Slave River. This agreement forms the basis of the municipalities sharing resources to deal with emergencies.

### **b. ESRD Wildfire Management Branch**

The Forest and Prairie Protection Act applies to all land within the Province of Alberta, except land within the boundaries of an urban municipality where there is no specific provision to the contrary. The Act establishes the Forest Protection Area (FPA) and the mandate for forest protection activities by ESRD within the FPA. The Wildfire Management Branch is responsible for wildland fire protection on all adjacent lands outside of city, town or village corporate limits. Nothing in the Forest and Prairie Protection Act imposes any obligation on the Minister to fight fires on any land; however, the Minister may enter into a fire control agreement with the Council of a municipality.

The Municipal District of Opportunity has entered into a Mutual-Aid Fire Control Agreement with the ESRD Wildfire Management Branch. This agreement is a standard agreement that is signed by a number of communities in Alberta that are within or border the Forest Protection Area (FPA) of the province. An annual Mutual-Aid Fire Control Plan identifies the operating procedure and responsibilities during wildfire related incidents and establishes the fees for service and reimbursement rates for each agency. The Mutual-Aid Fire Control Agreement creates a formal structure for the provision of mutual-aid and provides numerous advantages for both the MD and the Branch. The inclusion of an Annual Mutual-Aid Fire Control Plan insures an ongoing dialogue and a provision for updates between the agencies. Both the MD and the Branch should be commended for their foresight and commitment to the agreement however the existing plan can be improved to the benefit of all.

The MD and ESRD could further strengthen the Mutual-Aid Agreement with resources for the Fire Departments. The agreement could include the loan of the following equipment to each of the fire departments for the duration of the fire season:

- 2,000 feet of 1½” fire hose in hose carrying bags
- Forestry nozzles
- Instantaneous forestry coupling to threaded adapters
- Class A foam systems
- Sprinkler kits
- Portable FireNet radios

**Recommendation 13:** Utilize the Mutual-Aid Agreement to provide the loan of fire equipment to the MD fire departments during the fire season.

## **8.5 Wildland Firefighting Equipment**

The MD of Opportunity has committed substantial resources to provide their fire departments with the necessary equipment to suppress wildland fires within their jurisdiction. It has a wide range of equipment including forestry hose, water backpacks, Class A foam, water tanks, and wildland hand-tools.

Each of the departments would be well served with the addition of sprinkler kits from the ESRD Wildfire Management Branch. The Departments will respond to emergencies requiring the deployment of sprinklers and it is in the best interest of both agencies to have sprinklers readily available.

## **8.6 Incident Command Planning**

The Incident Command System (ICS) is a standardized on scene emergency management system specifically designed to allow users to adopt and integrate an organization structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The Incident Command System has been adopted by many municipalities, fire departments and emergency response agencies throughout North America. Under the system, an Incident Commander assumes the responsibility for the effective management of the incident. Most emergencies are adequately handled with a single agency or occasionally mutual-aid response. These types of incidents are best managed under the single command structure. Wildland/urban interface incidents will often require the response of two or more agencies, each with its own legal obligations. These types of incidents are best managed under the Unified Command structure.

Environment and Sustainable Resource Development has fully implemented the Incident Command System of emergency management.

## 9 Implementation Plan

The goal of the implementation plan is to identify the responsible stakeholders for each of the recommendations and set timelines for commencement and completion based on priorities and funding availability.

### Vegetation Management

Issue	Recommendation	Responsible Agency
<b>Zone 1-2</b>	<p><b>Recommendation 1:</b> Encourage residents to establish adequate Zone 1-2 defensible space around their structures including:</p> <ul style="list-style-type: none"> <li>▪ Removal and reduction of flammable forest vegetation within 30 metres of structures</li> <li>▪ Removal of all coniferous ladder fuels (limbs) to a minimum height of 2 metres from ground level on residual overstory trees</li> <li>▪ Removal of all dead and down forest vegetation from the forest floor</li> <li>▪ Increased maintenance to ensure that all combustible needles, leaves, and native grass are removed from on and around structures</li> <li>▪ Establishment and maintenance of a non-combustible surface cover around the structure including the use of FireSmart landscaping species</li> <li>▪ Removal of all combustible material piles (firewood, lumber, etc.) within 10 metres of the structure</li> </ul>	MD 17 ESRD
<b>Zone 2-3</b>	<p><b>Recommendation 2:</b> Zone 2-3 vegetation management is the responsibility of the landowner or land manager and should be completed based on the priorities identified in this plan. Detailed fuel modification prescriptions must be developed for each proposed Zone 2-3 vegetation management project prior to implementation.</p>	MD 17 ESRD
<b>Maintenance</b>	<p><b>Recommendation 3:</b> Ensure that all existing fuel modification projects are inspected on a regular basis and maintained as necessary to ensure fuel modification effectiveness. Maintenance is the responsibility of the land manager or landowner.</p>	MD 17 ESRD

### Development and Legislation

Issue	Recommendation	Responsible Agency
<b>Powerline Tree-Freeing</b>	<p><b>Recommendation 4:</b> Establish and implement a powerline tree-freeing program with the distribution power provider to reduce the threat of wildfire ignition and risk to firefighters from downed powerlines.</p>	MD 17 Distribution Power Provider
<b>Propane Tanks</b>	<p><b>Recommendation 5:</b> Ensure adequate FireSmart defensible space is established and maintained around propane tanks.</p>	MD 17
<b>Road and Address Signage</b>	<p><b>Recommendation 6:</b> Implement the standardized MD 17 rural addressing system for Chipewyan Lake, Peerless Lake, and Trout Lake.</p>	MD 17
<b>FireSmart Development Planning</b>	<p><b>Recommendation 7:</b> The Municipal District of Opportunity should complete a review and revision of all development legislation and policies to include wildfire as a development constraint and the need for FireSmart planning and mitigation measures at the development planning and implementation stages.</p>	MD 17

## Public Education

Issue	Recommendation	Responsible Agency
<b>Public Education Priorities</b>	<p><b>Recommendation 8:</b> The MD of Opportunity fire departments should conduct a FireSmart Home Assessment program to provide residents with mitigative options related to the following items in order of priority:</p> <ul style="list-style-type: none"> <li>▪ FireSmart Zone 1 and 2 fuels management</li> <li>▪ FireSmart structure and site maintenance focusing on annual maintenance items</li> <li>▪ FireSmart structural options including roofing and siding materials, decks/open spaces, and combustibles storage</li> <li>▪ Emergency planning including evacuation planning and structure and site preparation during a wildfire</li> </ul>	MD 17 ESRD

## Interagency Cooperation & Cross-Training

Issue	Recommendation	Responsible Agency
<b>Inter-Agency Communications</b>	<b>Recommendation 9:</b> Enhance the availability of radio communications by having ESRD provide each of the three Fire Departments with two portable Fireline radios during the fire season.	MD 17 ESRD
<b>FireSmart Committee</b>	<b>Recommendation 10:</b> Develop a FireSmart Committee, consisting of all relevant stakeholders, to coordinate and lead the FireSmart program for the area.	MD 17 ESRD
<b>Cross-Training</b>	<b>Recommendation 11:</b> Develop an effective cross training regime of ICS 100/200, Fire Operations in the Wildland Urban Interface (S-215), Wildfire Orientation and Safety on the Fireline. Encourage joint training sessions between the MD Fire Departments and ESRD.	MD 17 ESRD

## Emergency Response Planning

Issue	Recommendation	Responsible Agency
<b>Table-Top Exercise</b>	<b>Recommendation 12:</b> Prepare and complete a wildland/urban interface table-top exercise to test the operational effectiveness of the wildfire preparedness guides and train personnel on their use.	MD 17 ESRD
<b>Mutual-Aid Agreement</b>	<b>Recommendation 13:</b> Utilize the Mutual-Aid Agreement to provide the loan of fire equipment to the MD fire departments during the fire season.	ESRD MD 17

## **10 References**

Government of Alberta 2011. FireSmart Guidebook for Community Protection. AB. Sustainable Resource Development, Edmonton, AB.

Municipal District of Opportunity 2009. Municipal District of Opportunity No. 17 Red Earth Creek Area Structure Plan By-Law 2009-16. MD of Opportunity, Wabasca, AB.

Municipal District of Opportunity 2007. Municipal District of Opportunity No. 17 Wabasca Area Structure Plan Bylaw 2007-26. MD of Opportunity, Wabasca, AB.

Municipal District of Opportunity 2003. Municipal District of Opportunity No. 17 Municipal Development Plan Bylaw 2003-07. MD of Opportunity, Wabasca, AB.

Municipal District of Opportunity 2003. Municipal District of Opportunity No. 17 Land Use Bylaw No. 2003-08. MD of Opportunity, Wabasca, AB.

Municipal District of Opportunity 2003. Municipal District of Opportunity No. 17 Sandy Lake Area Structure Plan Bylaw 2003-10. MD of Opportunity, Wabasca, AB.

Partners in Protection 2003. FireSmart: Protecting Your Community from Wildfire Second Edition. Partners in Protection, Edmonton AB.