



WILDLAND FIRE RESPONSE PLAN

Annex # 29

Revision 1

January 20, 2018



1. AIM

The *Wildland Fire Emergency Response Plan* assists first responders in their ability to safely and efficiently respond to wildland fire affecting the Township of South Algonquin. The South Algonquin Fire Service and the Ministry of Natural Resources & Forestry (MNR) respond to numerous forest fires annually. This plan strives to prevent, control and minimize the damage caused by wildland fires within our community, and to provide a general guideline for emergency response to such events. The core concepts of emergency management have been incorporated into the plan with emphasis placed on:

- Fire prevention & mitigation strategies
- Emergency preparedness
- Emergency response guidelines and training
- Recovery activities
- Public education & awareness activities

2. SCOPE

The *Wildland Fire Emergency Response Plan* also strives to outline the roles and responsibilities of all responding agencies and the Municipal Control Group in a wildland fire situation. The plan allows for a coordinated initial tactical response by the municipality and its partners to a wildland fire incident.

3. OBJECTIVES

This emergency plan is a document in support of the *Municipal Emergency Response Plan* for the Township of South Algonquin, as approved by Council. This plan strives to meet the following objectives:

- ✓ Preventing or minimizing fire-related deaths and injuries
- ✓ Preventing, controlling and/or minimizing fire-related damage to property, critical infrastructure and the natural environment
- ✓ Protecting the local economy and local tourist base
- ✓ Establishing roles & responsibilities for all responding agencies
- ✓ Promoting public education & awareness concerning wildland fire
- ✓ Establishing training objectives and fire prevention strategies

4. LEGAL AUTHORITY

This plan is established as Annex # 29, as appended to the Municipal Emergency Response Plan under the authority of the *Emergency Management & Civil Protection Act* and *Ontario Regulation 380/04*. The five-year Fire Protection Agreement signed between the municipality and the Ministry of Natural Resources & Forestry is a binding agreement outlining the Crown Protection Areas and Municipal Protection Areas and establishes a cost-sharing arrangement for the cost of fire suppression.

Provincial legislation governing wildland fires may include:

- Fire and Prevention and Protection Act (FPPA) R.S.O. 1997, Chapter 4.
- Forest Fires Prevention Act R.S.O. 1990, Chapter f.24
- Ontario Regulation 207/96 Outdoor Fires
- Other applicable legislation and municipal By-laws

5. IMPLEMENTATION OF THE WILDLAND FIRE RESPONSE PLAN

Annex # 29 may be implemented by the following:

- Head of Council or Alternate
- CAO/Clerk-Treasurer or Alternate
- Community Emergency Management Coordinators
- Fire Chief or Alternate
- Municipal Control Group

Annex # 29 may be terminated by the following:

- Head of Council or Alternate
- CAO/Clerk-Treasurer
- Fire Chief or Alternate
- Municipal Control Group

The CEMC is responsible for the maintenance and revision of this plan in association with the Emergency Management Program Committee. This plan was first established on May 17, 2010 by CEMC Brian Ackney and this plan marks the first revision of the document.

6. HAZARD & RISK ASSESSMENT

This plan is based upon local and provincial response criteria concerning wildland fires occurring in Ontario. The number of occurrences, and dollar-loss values, help to establish a “consequence” and “probability” rating for forest fires and helps guide local emergency planning. There are specific hazard characteristics attributed to wildland fires and threat levels are dependent upon:

- Composition of the hazardous forest types present
- Time of year
- Weather conditions (moist/wet/dry/drought conditions)
- Available sources of ignition

Wildland fire may be defined as a threat posed by natural fuels in forested areas within and adjacent to the municipality and can be worsened by human activity such as:

- Land clearing, forest & industrial operations
- Slash accumulation & woody debris from logging operations
- Natural events such as wind, snow, disease
- Other human-made flammables

A forest fire (also referred to as a wildland fire) is described as an unplanned, uncontrolled fire burning in vegetation fuels such as forest, grass and brush. Forest fires are part of nature and occur from lightning, or as a result of human activity. Wildland fires are unwanted fires having a negative impact on people, property, the environment and economic stability.

It should be clearly understood that even if the “probability” of a wildland fire is very low, it should not diminish the fact that the “consequences” of a wildland fire are very high. A major wildland fire would cripple the local tourism base and devastate the local resource-based economy for decades.

On average, the Aviation and Forest Fire Emergency Services Division (AFFES) expends \$ 119 million per year. Fire operational spending in 2017 is approximately \$118 million. Costs vary annually due to the variability in fire occurrence and fire behaviour.

Hazard Characteristics

Threat levels can vary based on the following:

- A. Fires removed from a municipality still pose a threat due to smoke and/or damage to critical infrastructure such as hydro & communications lines
- B. Broadleaf species are less susceptible to fire than conifers
- C. Healthy forests are more fire-resistant than unhealthy areas which have more dead trees and vegetation
- D. Lightning and human-caused fires increase fire danger ratings
- E. Increased industrial activities and logging operations increase fire risks

OTHER FACTORS AFFECTING WILDLAND FIRES

- The level of human activity causing fires due to arson and unattended fires
- Level of public education programs which reduce fire occurrence through education and public awareness activities
- The level of fire prevention programs and activities
- The high level of enforcement of fire codes and by-laws which reduce fire risks

7. FIRE BEHAVIOUR

Fire is defined as, “a simultaneous release of heat, light and flame generated by the combustion of flammable material”. The fire triangle represents three elements that must be present for combustion to occur. They include:

- ✓ Air or Oxygen
- ✓ Heat
- ✓ Fuel

By removing one of the above three elements the process of combustion will not occur. Fire also requires a minimum of 20% oxygen to allow combustion. As long as there is sufficient oxygen the fire will continue to burn. The movement of air (wind) will affect the fire by determining the rate of spread, direction and intensity level.

Heat is required by fuels in order for the combustion process to develop and not all fuels will react the same to a distinct heat source, therefore, the amount of heat applied, and the duration of time, will then determine combustion. Small, dry fuels require a low amount of heat for a shorter time to ignite.

Fire requires fuel as a “food source” and cannot burn if this element is not present. Once ignition has occurred, certain fuel characteristics will determine how that fuel will behave.

By breaking the fire triangle the fire can be suppressed. There are various methods to remove one of the elements from the fire triangle including:

- ❖ Applying water to remove heat
- ❖ Smothering with mineral soil to remove oxygen
- ❖ Constructing a fuel break ahead of the fire to remove fuels

Fires “**spread**” by means of heat being transferred from one fuel to another, or within the fuel itself. This is accomplished by:

- ❖ Radiation: from radiant heat
- ❖ Convection: from flying embers or firebrands
- ❖ Conduction: from direct flame contact

8. EFFECTS OF CLIMATE CHANGE

Under provincial legislation the **fire season** extends from April 1st to October 31st annually. Most wildland fires occur during this time period but the effects of climate change will result in more variable and extreme weather patterns that may result in more severe and longer fire seasons. Projections published in MNR's Wildland Fire Risk Assessment Report from 2014 indicate the following:

- Wildland fires in Ontario will increase by 15% by 2040
- Wildland fires will increase by 50% by the year 2100
- The increase of fire occurrences will result in high to extreme fire behaviours
- Fires escaping suppression efforts will increase initially by 30-50%

9. TYPES OF WILDLAND FIRE SPREAD

There are three types of wildland fires. They include:

- Ground fires where the duff layer burns slowly and is tough to extinguish
- Surface fires where small trees, twigs, branches on the forest floor, young trees and low hanging branches (ladder fuels) burn quickly
- Crown fires which burn in upper foliage and branches in addition to the surface and ground fuels producing a high intensity spread

10. WILDLAND FIRE WITH URBAN INTERFACE

The **wildland fire-urban interface** occurs when human activity and development intersect with forested areas for the first time. The interface refers to any part of the fire where the fuel feeding the wildland fire changes from natural to human-made fuel. Land-use planning is seen as the best way to mitigate these urban interface incidents by preventing development in areas with hazardous forest types.

Development will only be allowed in these areas if mitigation strategies are undertaken to lower the fire risks to moderate or low levels, based on established minimum standards by the municipality. Ontario's "Fire Smart Program" instructs property owners and land managers on the proper techniques used to mitigate the risks associated with wildland fires.

11. FOREST FIRE CONTROL / VALUES AT RISK

The first priority of wildland fire suppression is to protect the safety of the public and firefighters. Other priorities include preventing the loss of life and injury, mitigating losses and minimizing economic and social disruptions. The MNRF promotes the understanding of the ecological role of fire and the use of fire to benefit resource management. Successful containment of a fire to a minimal size using the least amount of resources is the overall goal of the Incident Management Team.

In order to achieve the goal of containment, an assessment of the situation must be conducted at the beginning, and on a regular basis, throughout the life of the fire. This assessment is called “Size-Up”.

Values at risk must be identified and priorities established to protect:

- Human Life
- Property (including buildings / structures)
- Forest Values

Other key considerations will affect the ability to suppress a wildland fire including:

- Weather conditions
- Fuels
- Topography
- Water sources
- Access Routes
- Equipment
- Smoke conditions
- Fire Behaviour
- Safety concerns
- Control effort
- Incident Action Plan

12. AVIATION & FOREST FIRE EMERGENCY SERVICES (AFFES)

The Aviation and Forest Fire Management Program coordinates forest fire detection, monitoring, suppression and public information for Ontario. The Forest Fire Management Strategy is designed to assess all wildland fires and ensure that an appropriate response is provided. Fire suppression is assigned to unwanted fires that are dangerous to people and property while coordinating the use of “prescribed burns” to reduce fire risks and ensure the highest ecological benefits from the fire.

Some wildland fires will not be assigned fire suppression but will be allowed to burn. Examples when wildland fires may be monitored are:

- Fires distant from communities, homes or timber supplies
- Fires in provincial parks and conservation reserves (to maintain or enhance the ecological integrity of the area)
- Fires burning on islands or peninsulas
- Fires burning towards water or wetlands
- Fires burning damaged fuels such as trees damaged by storms or killed by insects

13. MNR FIRE RESPONSE SYSTEM

The Ministry Emergency Operations Centre (MEOC) in Sault Ste. Marie monitors the provincial fire situation and coordinates forest fire operations by setting provincial priorities and allocating resources. Key functions of the MEOC include:

- Strategic planning and long-range forecasting of fire resource requirements
- Assigning Provincial Incident Management Teams
- Setting up “quick strike” water bombing arrangements with neighbouring provinces and states

Field Level Fire Response is delivered from Fire Management Headquarters and Attack Bases. **Haliburton Fire Management Headquarters** is responsible for wildland fire response within the Township of South Algonquin. The Provincial Duty Officer has ultimate command and control over all equipment and personnel assigned to the fire response program in Ontario. Regional Duty Officers assist the Provincial Duty Officer as required.

13. MNRF RESPONSE SYSTEM

MNRF Planning Sessions occur twice daily during the fire season. The afternoon planning session determines the Strategic Operating Plan for the following day. The SOP addresses the following issues:

- ✓ Current fire situation
- ✓ Weather updates
- ✓ Fire behaviour patterns
- ✓ Priority areas & concerns
- ✓ Initial attack crew assignments & locations
- ✓ Planned detection requirements
- ✓ Logistics issues
- ✓ Aviation alerts & locations

14. MNRF FIRE SUPPRESSION METHODS

- 1) Using water and/or mineral soil as a suppression agent, the fire is extinguished by cooling the fuel below its point of ignition, or by smothering the fire or air
- 2) Using a water/ foam suppression mixture to remove the supply of available fuel by making it temporarily unable to burn
- 3) Fire crews use either a Direct or Indirect Attack using a combination of ground and air crews and equipment

During the earliest stages of a fire, size up procedures and a quick initial attack must be completed to ensure crew safety and fire containment. A break must be established around the entire perimeter of the fire.

Fire Intensity indicates the degree of heat exhibited by the flames consuming fuel on a given piece of ground. An approximate measure of *frontal fire intensity* can be determined by estimating flame length at the head:

- Flame length 3 m or less can be safely managed by ground crews
- Flame length 3 to 4.5m requires water bomber assistance
- Flame lengths over 4.5m requires heavy water bomber assistance or may be unmanageable.

15. MNRF INCIDENT COMMAND SYSTEM

The Incident Command System establishes lines of supervisory authority and formal reporting relationships. The **MNRF Fire Boss** is the incident commander over all Ministry personnel at a wildland fire. The Fire Boss can effectively manage 5-7 fire crews before the “span of control” is exceeded. As the fire expands another layer of command is added. **Crew Chiefs** command individual work groups. Crew members report to the Crew Chief who reports to the Fire Boss. As the incident expands further, “**Section Leaders**” are added to manage 5-7 crews each. As the incident expands the various functions form an *Incident Management Team*.

16. MNRF FIRE PROTECTION AGREEMENTS

Fire management organizations develop relationships and agreements with key partners so that fire response can be delivered effectively. Municipal fire agreements have been in place in Ontario since the 1950’s. Section 21 of the *Forest Fire Prevention Act* makes every municipality in a Fire Region responsible for the suppression of grass, brush and forest fires within its own limits.

South Algonquin has signed two five-year agreements for fire protection with the MNRF in 2008 and 2013, and a revised agreement is currently under development in 2018. A copy of the MNRF Fire Protection Agreement for South Algonquin is found in Annex # 29.

Fire Prevention & Compliance

Municipalities are required to:

- Develop a Fire Prevention Plan at its own expense
- Control open air burning through By-laws or a fire permit system
- Maintain and enforce the fire permit system
- File an annual fire summary by Nov 30th of each year

TRAINING REQUIREMENTS

Municipalities must agree that Ministry Fire training programs will be taught to all staff within municipal fire departments assigned to fire operations.

The following training is to be provided:

- ❖ Municipal Fire Department Forest Fire Training SP 103
- ❖ Air attack Safety Training Module for Municipal Fire Operations

16. INTER-AGENCY FIRE RESPONSE OPERATIONS

The relationship between Ministry personnel/ resources and municipal resources is established by the Inter-agency Fire Response Operations Guideline. The MNRF will retain authority for air attacks and all Ministry personnel. The municipality will direct its resources and will retain all authority for the coordination of police, ambulance or other agency involvement.

Initial arrival at a fire:

1. First organization arriving at a fire scene will commence fire suppression
2. An MNRF Agency Representative will seek out the person in charge for the municipality and ask if the municipality requires MNRF assistance?
3. If the Municipal Representative says they do not need assistance, then the MNRF Representative will document the conversation and contact the Sector Response Officer (SRO). If the SRO and MNRF Agency Representative agree that the municipality can control the fire, the MNRF resources will be returned to base.
4. If a Municipal Representative says the municipality requires assistance, the MNRF Agency Representative will document the conversation and will contact the Sector Response Officer and an entry will be entered into the SRO Log Book.
5. The MNRF Agency Representative will then document the exact location of the fire using a GPS device and provide such information to the SRO.
6. The Sector Response Officers works with the Duty Officer who will assign crews and resources at his/her discretion.

Air operations:

Water bombing in conjunction with ground attack can present a hazard to all ground crews. Hazards will be minimized by the diligent coordination of aircraft and ground crews. The *Air Attack Officer* will control the airspace and all aircraft activities. If the MNRF Agency Representative is on the ground, Air Attack will communicate directly with him/her by using the assigned radio frequency.

If air attack arrives before the MNRF Agency Representative arrives on site, then Air Attack will make contact with the Municipal Incident Commander prior to bombing operations on vhf radio frequency 154.07 MHZ.

Air Operations: MNRF NOT AT FIRE

Where the MNRF is not at a fire, requests for air attack may be made by the Municipal Incident Commander directly to the appropriate *Sector Response Officer (SRO)*. The SRO will then relay the request to the *Duty Officer*.

If the air attack is approved, the Sector Response Officer will notify the Municipal Incident Commander and advise them to monitor 154.07 MHZ.

The SRO will advise the Municipal Incident Commander of the following:

- the type of aircraft responding to the incident
- the number of aircraft deployed
- the name of the Air Attack Officer in charge
- the estimated time of arrival of resources

Aircraft Dispatch Fees:

Dispatch fees are negotiated charges applied to water bombers used on municipal fires.

“Flying hours” refers to time over the fire only and does not include ferry time to and from the fire.

Refer to the current fire agreement between the Township of South Algonquin and the Ministry of Natural Resources and Forestry. Specific hourly rates are charged for each type of aircraft operated by the Aviation and Forest Fires Emergency Service (AFFES). AFFES operates the following aircraft:

- ✓ CL 215 /415 Twin Otter
- ✓ Birddog planes
- ✓ Helicopters

17. THE COST OF FIGHTING WILDLAND FIRES

MNRF agreements set rates for fire suppression services in Ontario and an annual fee called a “**Comprehensive Protection Charge**” (CPC) is established in every agreement. The Comprehensive Protection Charge is based on land ownership (private or crown) and which partner looks after more of the other partner’s area of responsibility. In some cases the MNRF will pay the municipality and in other situations the municipality pays the MNRF. In the absence of an agreement, the MNRF will charge the full cost of recovery rates for its forest fire response services.

Suppression costs for Air & Ground Attacks can escalate very quickly and the municipality will be responsible for their payment regardless of an emergency declaration, or not. Municipal Fire Commanders should inform senior municipal officials immediately, if the decision is made to engage air and/or ground attack crews due to the heavy financial costs involved. This may allow for all costs to be covered under provincial disaster funding programs, if notifications are made early enough and all expenses are properly document.

MNRF Fire statistics for 2017 include:

- ❖ 776 fires occurred in Ontario burning 111,955 hectares
- ❖ Northeast Region had 122 fires
- ❖ 543 fires were lightning-caused
- ❖ 207 fires were human-caused
- ❖ 26 fires classified as “undetermined origin”

The 10 year average is 791 wildland fires burning 104,000 hectares.

18. LEAD AGENCY

Since the Township of South Algonquin has an agreement with the MNRF, the “**Lead Agency**” for forest fire suppression will either be the MNRF or the municipality, and the Lead Agency may change over the duration of the incident. Many fire situations begin with Inter-Agency response where both the municipality and the MNRF work together to bring the fire under control. Factors such as fire location, fire behaviour, resource availability, duration of the event and size will determine who takes the lead.

18. LEAD AGENCY

The MNRF manages large wildland fire incidents with an *Incident Management Team (IMT)*, based near the fire. Specific responsibilities of the MNRF may include:

- Determining the location of the Incident Command Post
- Providing forest fire suppression
- Liaising with Municipal Fire Departments and the Municipal Control Group

19. MUNICIPAL RESPONSIBILITIES

Fire suppression services within the municipality are provided by the South Algonquin Fire Department. The Madawaska Fire Station responds to incidents within the eastern region of the Township and the Whitney station responds to incidents in the western part of the municipality (per their catchment areas). Each station provides “automatic aid” to the other station when immediate assistance is required. South Algonquin is also a member of the Renfrew County Mutual Fire Aid Association and may assist, or receive assistance from Mutual Aid.

The South Algonquin Fire Department uses the Incident Command System to coordinate fire responses. Each station has its own Chief, Deputy Chief and Captains who exercise command over approximately 30 volunteer firefighters. Each fire Chief is equal in rank and is responsible for the overall operation of their respective fire stations.

In the event that a wildland fire threatens the Township of South Algonquin, the Emergency Management Program may be activated to assist in responding to the emergency. The Fire Chief may issue an “emergency alert notification” activating the Municipal Emergency Response Plan and/or the Municipal Control Group, as appropriate. The emergency management program may be activated for any emergency regardless of whether or not a “state of emergency” has been declared by the Head of Council. The plan allows for municipal officials to take such actions, and make such orders, as are necessary prior to an official declaration.

Community Emergency Management Coordinators (CEMC’s) are the primary contact when activating the emergency management program. CEMC’s are also the primary contact for the municipality with the Office of the Fire Marshal & Emergency Management (OFMEM). CEMC’s must be kept informed as to the status of the emergency and will coordinate provincial assistance with the Provincial Emergency Operations Centre at Emergency Management Ontario (EMO).

20. DECLARING A MUNICIPAL EMERGENCY

The Head of Council, or designated alternate, may declare that an emergency exists within the municipality or in any part thereof, and may declare a state of local emergency. An emergency declaration is advised if:

- ✓ All municipal resources have been met or exceeded
- ✓ The incident will result in severe economic hardship to the municipality
- ✓ Persons are displaced from their homes
- ✓ Volunteers are being used to support the emergency response

Refer to Annex # 1 Notification & Contacts for instructions on emergency declarations, renewals or terminations.

21. AGENCY ROLES AND RESPONSIBILITIES

Many agencies and organizations may be involved in the response to a wildland fire. All agencies will work cooperatively to mitigate the effects of the emergency. Municipal staff, volunteer agencies, registered charities, government ministries and organizations and other groups, not under municipal control, will work with the Municipal Control Group to assist the “Lead Agency” in managing the overall response. Refer to the ***Municipal Emergency Response Plan*** for specific roles and responsibilities of response groups.

22. MUNICIPAL EVACUATIONS

Wildland fires pose a major threat to communities and the smoke produced from even small fires can harm human health, or can pose an immediate risk to people and property. Initially smoke from fires causes health concerns forcing vulnerable populations to evacuate. As the fire moves toward the municipality threat levels increase resulting in a decision to evacuate. When it becomes apparent that an evacuation of persons is necessary due to wildland fire, the Municipal Control Group will coordinate the evacuation process assisted by all emergency response organizations. Evacuation should only be used as a last resort to all other measures.

Please refer to the ***Municipal Evacuation Plan*** found in Annex # 12 – Municipal Evacuations, as appended to this plan.

22. ACTIVATION STEPS: MUNICIPAL EVACUATION

The following steps will lead to the activation of the Municipal Evacuation Plan:

1. Incident occurs
2. Emergency services respond to incident
3. Situation is assessed
4. Precautionary evacuation by emergency services
5. Emergency response plan is activated
6. Municipal Control Group convenes at Emergency Operations Centre
7. Aid is requested from support groups
8. Assess the need for a mandatory evacuation, if situation escalates
9. Persons are evacuated.
10. Red Cross provides food, clothing, shelter, food and personal services and a Registration & Inquiry service for all evacuees
11. Emergency is terminated
12. R-entry of evacuees is allowed when safety permits
13. Disaster recovery and financial assistance programs support evacuees in the “recovery phase” of the emergency

Registering Evacuees

All evacuees shall be registered with the Canadian Red Cross Society when received at an Emergency Reception Centre or an Evacuation Centre. All evacuee information is confidential and will be dealt with utilizing the policies and procedures established by the Red Cross. Refer to Annex # 21- ***Emergency Shelter Services Plan*** for detailed information.

23. FOREST FIRE MOP-UP

“Mop-up” is the act of extinguishing a fire after it has been brought under control. Steps to a proper mop-up include:

- Staring mop-up at outer boundaries of the fire edge
- Slowly working toward the centre checking for heat sources
- Cold trail to ensure all fire is extinguished
- Looking for visible signs of smoke
- Any hot spots must be thoroughly doused with water to prevent flare up

24. PERSONAL SAFETY

Personal safety is always the number one priority!

All personnel involved in fire suppression Activities must wear the appropriate Personal Protective Equipment including:

- ✓ CSA approved hard hat
- ✓ CSA approved safety boots
- ✓ Hand protection
- ✓ Eye protection

When firefighting near power lines or equipment always assume the electrical source is energized and retreat 20-30 metres from the source. Refer to Hydro One’s safety manual “Electrical Safety for Emergency First Responders” for more information.

25. AIRCRAFT SAFETY

Care must be exercised by ground crews when in the area of working aircraft. A CL 415 Bombardier air tanker has the ability to drop 6100 litres of water on a selected part of a fire, which is a load equal to 8 tons of water. This is capable of breaking trees eight inches in diameter or moving heavy objects. When dropping water on a fire, the affected area is called the *drop zone (60m X 400m)* with an added safety zone added of 150m. Ground crews are notified of the water drop in advance and will proceed to their safety areas. The following procedures should be followed:

- Find a site avoiding rocks or trees
- Place hand tools behind you
- Lay down with your head facing the water drop
- Wear all personal protective equipment
- Keep your head low and hold tight

26. LACES

LACES, is an acronym for a system developed to inform firefighters of potential problems and to pre-determine an established evacuation plan.

L Lookouts: a trusted person in an advantageous position who watches for potential fire problems and relates the situation to their supervisor

A Anchor Points: an advantageous position, a barrier from fire spread from which to start building a fire break

C Communications: information must be conveyed to everyone with the intent that it is known before an incident can occur

E Escape Routes: pre-determined routes that can be used by anyone in the event that the fire begins a run that will jeopardize personal safety. Escape routes lead to a Safety Zone

S Safety Zones: identify safety zones and clean sites that are clear of vegetation

27. WATCH-OUT SITUATIONS

In a serious wildland fire, conditions for crew safety may begin to deteriorate creating a need to make everyone aware of a developing problem. Things to “watch for” include:

- Fire not scouted and sized up
- Fire in country not seen during the daylight
- Safety zones and escape routes not identified
- Uninformed on fire strategy, tactics and hazards
- Instructions on assignments not clear
- No communication link with crew members/supervisors
- Constructing a fire line without safe anchor points
- Unburned fuel between you and the fire
- Attempting frontal assault on fire

28. STANDARD FIRE ORDERS

Fight fire aggressively, but provide safety first

Initiate all actions based on current/expected fire behaviour, be aware of weather, topography and fuels

Recognize current weather conditions & obtain forecasts

Ensure instructions are given clearly and are understood

Obtain current information on fire status... direction, size and speed

Remain in communication with immediate crew and supervisors

Determine safety zones and escape routes

Establish lookouts in potentially hazardous situations

Retain control at all times.... ensure clear instruction, communication and crew location

Stay alert, keep calm, think clearly and act decisively, think before acting

29. SMOKE MANAGEMENT

Smoke Management tactics:

- ✓ Always begin fire suppression on the up-wind side and use flank action to suppress the fire
- ✓ Limit smoke exposure to smouldering and inversion conditions
- ✓ Consider exposure to smoke when planning crew placements

29. SMOKE MANAGEMENT

Smoke matter content includes:

- Carbon monoxide
- Carbon dioxide
- Acroleine
- Benzene
- Formaldehyde
- Particulate matter

Smoke inhalation symptoms include:

- coughing
- breathing difficulties
- vomiting
- confusion
- high temperature

FIRST AID FOR SMOKE INHALATION

1. Remove victim from smoke filled environment immediately
2. Once the victim has reached smoke-free air, rest while taking deep breaths
3. If victim has inhaled a lot of smoke, or has burned the airway, transport to hospital for oxygen and medical treatment

30. SMOKE EVACUATION GUIDE

No two wildland fires will behave exactly the same but the smoke produced from burning forests and vegetation will produce similar human health risks. The following descriptions are guidelines only but will, in general terms, assist the Municipal Control Group in gauging the effects of wildfire smoke on local populations.

HEAVY SMOKE:

- Horizontal visibility of 1 mile or less
- Heavy smoke from fire located within 10 miles
- Health risks are high, persons with medical conditions should seek assistance from health professionals and remain indoors
- Fire threat may be added concern
- Evacuations may be necessary
- Aircraft affected. May encounter delays/grounding

MODERATE SMOKE

- Horizontal visibility is 1-3 miles
- Moderate to heavy smoke from fires within 20 miles or from a localized fire within 10 miles
- Health risks to vulnerable populations
- Persons with medical conditions may need assistance or need inhalers or medication
- Persons should remain indoors
- Severe cases should be evacuated to hospital
- Community alert due to fire threat

LOW SMOKE

- Horizontal visibility 2-5 miles
- Smoke and haze from a small fire, or a large fire at a great distance
- Persons with respiratory problems should consult health professionals
- Enhanced monitoring due to fire threat
- No evacuations/precautions needed at present

31. RESTRICTED FIRE ZONES: MNRF

Restricted Fire Zones are orders made by the Minister of Natural Resources under the Forest Fires Prevention Act that restrict the use of open fires in specific areas of the province. It is only used when the fire hazard is extreme and/or firefighting resources are stretched to capacity. After such a declaration, it is illegal to set out a fire for any purpose within the affected area. Failure to comply may result in a \$1,000 fine and/or 3 months in jail and the financial responsibility may be incurred for the cost of fire suppression caused by the illegal act.

The MNRF notifies the public of fire restrictions through media announcements and by posting highly visible billboard signs in high traffic locations. MNRF staff provides enforcement at street level.

32. MUNICIPAL FIRE BANS

The Chief Fire Official for the municipality is empowered to initiate and enforce fire restrictions within the municipality. The Fire Chief is considered to be an "assistant to the Fire Marshal" and may designate a fire ban within part, or all of the Township, under the authority of provincial legislation and municipal by-laws. The Chief Building Official/ By-Law Enforcement Officer may assist chief fire officials with the legal compliance to such orders. Section 2 of By-law # 02-153 states that a fire permit may be cancelled or suspended at any time by the Fire Chief or designate.

The municipality will post fire ban signage throughout the Township to notify the public of fire restrictions and may also use local radio stations and/or print media to advertise the fire restrictions. The number to report an illegal fire is **9-1-1** or **310 FIRE**.

Most MNRF Fire Protection Agreements require municipalities to implement and maintain a fire prevention program. As part of South Algonquin's Fire Prevention Program, Fire Meters have been erected in various locations in each ward indicating current fire conditions and restrictions. Signs are located at:

- ❖ Aylen Lake Road (at the dam)
- ❖ Major Lake Road (at Madawaska Municipal Complex)
- ❖ Lyell Lake Landing Road
- ❖ Whitney EMS Station
- ❖ McRae-Hay Lake Road
- ❖ McKenzie Lake Road (at both entrances to Hwy # 127)

33. FIRE PREVENTION: FIRE SMART PROGRAM

The **Fire Smart Program** is a provincial program that educates land owners and property managers on minimizing wildland fire risks by creating defensible space through vegetation management. "Priority Zones" encompass 100m from each structure on a given property and is divided into 3 concentric priority zones (1-3).

Home Ignition Zone

Zones 1 & 2 are located within 30m of a structure. This is the most crucial area to apply vegetation control as embers would most likely ignite small new fires close to buildings and radiant heat from a fire would ignite a structure.

Zone 1

Land Managers should:

- Prune all shrubs and trees and remove deadfalls, mow & water grass
- Prune all conifer branches and remove any limbs overhanging structures or that are less than 2m off the ground
- Replace conifers with native deciduous hardwoods
- Use non-combustible landscaping products and apply fire-resistant landscaping options

Zone 2

Land managers should:

- Space the crowns of conifers to at least 3-6m apart
- Plant native hardwoods
- Remove all dead woody debris and shrubbery (ladder fuels)

Zone 3

Land Managers should:

- Thin all conifers within 30-100m from any structure
- Remove ground fuels
- Create space in forest stands

34. AGENCY ROLES AND RESPONSIBILITIES

As mentioned previously, the Lead Agency in wildland fire response will either be the MNRF or the municipality, based on the nature, location and severity of the event. The *Municipal Control Group* may be convened to assist in the emergency and will operate under the authority of the *Municipal Emergency Response Plan*. The roles and responsibilities of responding agencies are outlined in the plan.

35. FOREST FIRE PROTECTION ACT

The Forest Fire Prevention Act, R.S.O. 1990 Cf.24, is one of the primary pieces of legislation designed to protect Ontario's forests. The following sections highlight important sections of the Act. They include:

Section 10 Fire Season

The period from the first day of April to the 31st day of October in each year shall be a fire season. (c.F.24s. 10)

Section 8 Fire Wardens

The Minister may appoint fire wardens who shall have the authority to enforce the provisions of the Act

Section 4 Appointment of Officers

4(1) The Minister may appoint officers for carrying out the Act/Regulations

4(2)The following persons are deemed to be officers for the purpose of this Act by virtue of their office:

1. All conservation Officers duly appointed by the Ministry
2. All Deputy Conservation Officers duly appointed by the Ministry
3. All Police Officers appointed under the Police Services Act
4. All members of the Royal Canadian Mounted Police

4(3) Park Wardens duly appointed by the Ministry are deemed to be officers for the purpose of this act, but only in the Provincial Park for which the person is designated as park warden.

35. FOREST FIRE PREVENTION ACT

Section 5 Right of Entry

5(1) An officer may enter into and upon any lands and premises for the purpose of this act for the purpose of inspecting the site of the fire to determine its cause and circumstance.

5(2) The officer may not enter any place used as a dwelling without the consent of the occupant, except under the authority of a search warrant issued under the Provincial Offences Act.

Section 7 Right to Summon Assistance

For the purpose of controlling and extinguishing a fire, an officer may use any privately-owned equipment and may employ or summon the assistance of every able person over the age of 18, except persons providing essential services and persons physically unfit and on private lands may take such actions as he/she considers necessary to control and extinguish a fire R.S.O. 1990 C.f.24, S.7.

Section 26 Rendering Assistance

No person shall refuse or neglect to provide any privately-owned equipment, or to render assistance when required under Section 7.

Section 12 Restricted Fire Zones

No person shall start a fire outdoors in a restricted fire zone,

- a) Except in accordance with a permit issued under the regulations; or
- b) Unless the fire is for the purpose of cooking or obtaining warmth and the fire is in a stove or installation of a kind prescribed by regulation.

Section 20 Extinguishment of Fires

An officer may at any time in the interest of forest protection, extinguish a fire or order any person in charge, or apparently in charge, of the fire to extinguish the fire.

Section 19 Agreements

The Minister may enter into agreements with respect to the prevention, control and extinguishment of grass, brush or forest fires.

35. FOREST FIRE PREVENTION ACT

Section 21 Duty of Municipality

Subject to an agreement made in Section 19 and to sub-section (2), every municipality in a fire region shall, at its own expense, extinguish grass, brush or forest fires within its limits, but where the action taken by it in extinguishing any such fire, is in the opinion of an officer not adequate, the officer may take such actions as he/she considers necessary to control and extinguish the fire and the costs and expenses incurred by the Ministry in controlling and extinguishing the fire are payable by the municipality to the Minister of Finance and are recoverable as a debt due to the Crown, in right of Ontario.

Section 21(1) Cost of Action: Fires

If a fire is caused by, or results from, the conduct of a person, or is caused by or results from a person disobeying, or refusing, or neglecting to carry out any of the provisions of this Act, or any conditions of a permit issued under this Act or the Regulations, the cost and expenses of any action taken with respect to that fire are payable by the person and,

- a) If costs and expenses were incurred by the Ministry, they are payable to the Minister of Finance, and are recoverable as a debt due the Crown .
- b) If cost and expenses were incurred by a person other than the Ministry, they are payable to that other person and are recoverable as a debt due to that other person by law.

Section 21(2) Cost of Action: Fires

Upon satisfactory proof being furnished by the municipality that a fire has started on Crown land, the cost and expenses of controlling and/or extinguishing the fire shall be borne by the Ministry.

Section 22 Reporting of Fires

Every person who has started a fire outdoors, or is in charge of a fire outdoors, that is not kept under control, shall report the fire without delay to an officer and in any prosecution or action the onus is upon the person to prove that he/she so reported the fire.

35. FOREST FIRE PREVENTION ACT

Section 23(1) Evacuation

Where in the opinion of the Minister a forest fire emergency exists, the Minister may by order declare an area to be a forest fire emergency area, and may make such orders and take such actions as he/she considers necessary for the effective fire suppression, or the shelter or evacuation of persons in the area.

Section 29

No person shall smoke while walking or working in a forest area during a fire season.

No person shall throw or drop within 300m of a forested area,

- a) a lighted match, cigarette, cigar or other smoking material
- b) live coals, or
- c) hot ashes

36. REGULATION 207/96 OUTDOOR FIRES

The following conditions apply to outdoor fires:

- 1(1) No person shall start a fire outdoors unless conditions will allow the fire to burn safely from start to extinguishment
- 1(2) No person who starts a fire shall leave the fire without leaving a person in charge of the fire
- 1(3) A person who starts a fire outdoors, or a person in charge of a fire outdoors, shall take all the necessary steps to tend to the fire, keep the fire under control and extinguish the fire before leaving the site.

Regulation 207/96

2. No person shall start, or tend a fire outdoors outside of a restricted fire zone during the fire season, unless the person has a permit issued under subsection 5(1) or all of the following conditions are met,

1. The person is burning piled wood, brush, leaves or discarded wood by-products
2. A responsible person is available to tend the fire until it is extinguished
3. The material burned is in a single pile less than 2m in diameter and is less than 2m high.
4. Fire is started not earlier than 2 hours before sunset and is fully extinguished not later than 2 hours after sunrise the following day or earlier.
5. The fire is at least 2m from any flammable materials.
6. The person tending the fire has tools or water adequate to contain the fire within the site.

Section 8(7) Fires in Campgrounds

A campground offers camping facilities to the public on a temporary basis and meets the following criteria:

- 1) Allows camping only in cabins and designated sites accessible by motor vehicle
- 2) Campground does not allow fires between 10am 7pm
- 3) Campground clearly posts the hours fires are allowed
- 4) Campground has printed information on safe campfires and provides it to guests
- 5) Campground has adequate equipment to control and extinguish a fire that can be taken to any campsite or cabin within 10 minutes
- 6) Campground has on-site at all times, staff who are instructed as to the location and use of the equipment
- 7) Campground has reliable 2-way communications to allow it to obtain assistance if a fire escapes control.

Section 9(1) Forest Operations & Equipment

A person who operates machinery involved in forest operations, or processing forest resources in a woodland during the fire season shall keep a fire extinguisher on the equipment or within 5m from it.

Section 10

- 1) A person operating a power saw in a forest or woodland during the fire season shall not start it within 3m from where it was fuelled.
- 2) A person who operates a power saw shall not place it on any flammable material while its engine is operating, or hot enough to cause combustion.
- 3) A person operating a power saw in a forest or woodland during a fire season shall keep a fire extinguisher available during its operation.

Section 11

- 1) A person who operates equipment or machinery in a forest or woodland during the fire season shall ensure it is checked daily for any accumulation of flammable material and that any accumulation found is removed and disposed of safely.
- 2) A person who leaves equipment/machinery in a forest or woodland during the fire season while it is not being operated shall ensure that it is left in an area free from flammable material.

Section 12

No person shall alter or modify a muffler or other spark arresting device attached to a power saw, an off-road vehicle, equipment or machinery operated in a forest or woodland.

37. ANIMALS & WILDLAND FIRES

Wildland fires are part of the natural eco-system and provide ecological benefits to forests and woodlands. Wild animals will continue to live in fire regions and will adapt to the changed landscape. The Ministry of Natural Resources and Forestry, operating from the Bancroft District Office, is responsible for dealing with wild animals in our region.

Pet owners are responsible for the care, maintenance and safety of their companion animals and pets. Pet owners should make prior arrangements to board out their animals at a local care facility should an emergency occur. Where this is not possible, pet owners should take their animals with them if they must evacuate. Pet emergency kits will ensure family pets will have all the necessary items to survive such an event and pets should be included in your “family emergency plans”. Refer to Annex # 32 – ***The Municipal Animal Care Emergency Response Plan*** which provides information on animal care in an emergency.

The owners of large animals and/or livestock (horses, pigs, poultry, rabbits, donkeys etc.) are responsible for the care, maintenance and safety of their own animals. These owners must arrange for the removal and storage of their animals if an evacuation becomes necessary (at their own expense). If a wildland fire threatens the community and a full scale evacuation becomes apparent, then the Municipal Control Group should work cooperatively with Emergency Management Ontario to arrange assistance with local veterinarians, livestock producers and transporters and the O.S.P.C.A.

38. RECOVERING FROM WILDLAND FIRES

Once a wildland fire has been brought under control and the Incident Commander for the Lead Agency fighting the fire determines that evacuees may safely return to their homes, then **recovery activities** will be engaged to return the community to a state of “normalcy” and allow persons to re-enter the emergency area(s).

Corridor control:

Generally speaking, the police service will establish and maintain corridor controls and operate entry points to the municipality. Once the decision to allow re-entry is made, a coordinated re-entry strategy will be employed to safely return people to their homes.

Community Safety Assessment:

The Municipal Control Group will ensure that the Chief Building Official/By-Law Officer for the Township of South Algonquin completes a safety survey of all affected structures within the emergency area. Using the Building Code Act and other pertinent legislation, the C.B.O. will determine the following:

- ✓ Buildings which are safe and can be re-entered
- ✓ Buildings with safety issues/concerns which need to be corrected before re-entry is allowed
- ✓ Buildings which are unsafe where re-entry is not allowed
- ✓ Buildings which require demolition

Public Utilities:

The restoration of necessary public utilities and sanitary facilities will be necessary before evacuees can return home.

Transportation infrastructure:

Municipal public works and Area Maintenance Contractors will be responsible for ensuring the maintenance of all municipal and provincial highways, respectively. The Works Superintendent will ensure that all municipal facilities are safe and operational before the buildings can be returned to service.

38. RECOVERING FROM WILDLAND FIRES

Municipal Control Group:

The MCG will coordinate recovery activities in a timely fashion. Wildland fires often destroy people's property and personal possessions, so the following activities may be engaged by the MCG:

- Liaising with all local insurance companies and assisting persons in filing insurance claims
- Accepting donations from all sources, per the guidelines listed in the ***Donation Management Plan***
- Obtaining Municipal Disaster Assistance funding from the province and by assisting residents in applying for personal disaster assistance
- Liaising with the Canadian Red Cross Society in relation to disaster assistance provided under Red Cross guidelines
- Employing a Waste Management Strategy and debris removal program following the fire
- Assisting all other agencies and organizations in disaster recovery activities, as appropriate

39. CONCLUSION

Wildland fires spawned by nature, or human-caused events, present a serious risk to the municipality on an annual basis. Fire prevention activities combined with a robust public education and awareness campaign will help mitigate the effects of wildland fire within South Algonquin Township. Strong enforcement of provincial regulations and municipal bylaws will help create a disaster resilient community.

40. UPPER MADAWASKA RIVER PROVINCIAL PARK

The Upper Madawaska River Provincial Park is a waterway-class provincial park on the Madawaska River. The park consists of a strip of land along both shores of the Madawaska River from Whitney to Madawaska in South Algonquin Township.

As a non-operating park it offers neither facilities nor services and is used for canoeing and white-water kayaking. It covers an area of 1,085 hectares (2,680 acres) and is governed by Ontario Parks. Its coordinates are 45° 29'36"N and 78°05'55"W.

FIRE RESPONSES IN PROVINCIAL PARKS:

A municipal fire ban issued by the Township of South Algonquin is valid for areas under municipal jurisdiction only and cannot be enforced in the Upper Madawaska River Provincial Park. Ontario Regulation 347/07 **Provincial Parks: General Provisions** govern all activity within the parkland. The following sections pertain to fire and other emergencies which may occur in the provincial park:

2 (1) No person shall,

(a) remove, damage or deface any property of the Crown in a provincial Park; or

2.2(a) disturb, cut, kill, remove or harm any plant, tree or natural object in a provincial park.

5(1) Fire & Fireworks

5(1) No person shall start or tend a fire in a provincial park except in a fireplace provided by the superintendent or in an area designated for that purpose.

5(2) No person shall start or tend a fire in a provincial park or part of a provincial park with respect to which the superintendent has posted a notice indicating that there is a fire hazard.

5(3) No person shall possess or ignite fireworks in a provincial park.

RESTRICTED FIRE ZONES: ONTARIO PARKS

If you need heat for cooking or warmth in a restricted fire zone you can use portable liquid fuel or a gas stove that can be turned off easily by closing a valve or lid. It must be 1 metre away from any flammable material. Failure to comply could result in:

- A fine up to \$1,000
- 3 months in jail
- Financial responsibility for the cost of fighting the fire

8 (1) Closure & Evacuation-Provincial Parks: Regulation 347/07.

An officer may close a provincial park or part of a park to the public by the erection of signs, or other suitable means, for the purpose of,

- a) Preventing overcrowding of park facilities
- b) Controlling or managing a fire, flood or other emergency situation
- c) Protecting public safety

8 (2) An officer may order an evacuation of a provincial park or part of a park for the purpose of maintaining public safety in case of fire, flood or other emergency.

26 (1) Traffic Management:

An officer or any person employed by the ministry of a provincial park may direct traffic in the park.

26 (2) In case of a fire, accident, traffic congestion or other emergency, the person may direct traffic as necessary to prevent or relieve congestion.

Revised by: CEMC Brian Ackney January 20, 2018.

