

**MUNICIPALITY OF
NEEBING**

FIRESMART

PLAN



EXECUTIVE SUMMARY

The purpose of a FireSmart plan is to provide direction to a community on the steps to be taken to make the community safer from the threat of a wildfire. These steps are a combination of operational and administrative initiatives to establish and maintain a FireSmart program. Ultimately, the municipality may want to work toward completing the criteria and reaching the benchmarks of a FireSmart community.

The consultant team made a number of visits to the community of Neebing in December 2017 and April/May/June of 2018. They met with town administration, the Fire Chief and an MNRF representative to discuss objectives for the plan and timelines. The team made 5 tours of the community to assess cottage subdivisions, road access and forest resource inventory mapping, as well as to ground truth aerial information and to determine fire hazard issues in and around the community through photos and discussions.

This plan lays out several FireSmart goals for the community, including; fuel reduction in selected areas, fire sensitive planning in future developments, refinement and enhancement of the garbage disposal sites to ensure fire safe boundaries, ongoing public wildfire education in the community and the formation of a FireSmart committee.

Fuel reduction is the primary FireSmart tool used to reduce susceptibility to wildfire for a municipality and homeowners. It is recommended that this effort be started by encouraging a fuel reduction program that targets areas near cottage subdivisions and homes with a high buildup of nearby fuels. This would dramatically reduce the risk of extreme fire behavior and radiation heat sources close to housing within the community. The municipality may need to consider creating sites or using existing sites for residents to remove excess limbs, branches and trees to be recycled later or to be burned under controlled situations in the fall or winter months.

Firebreaks are also great tools for reducing fire risk to homes and cottages. A firebreak slows the encroaching fire's approach to homes and cottages and with fire retardant species (birch and poplar) could reduce fire intensities close to structures. This would dramatically reduce the risk of extreme fire behavior and radiation heat sources close to cottage subdivisions in some areas of the community. One area that would benefit from a firebreak would be the southern shore subdivision on Lake Lenore. The subdivision is bordered by crown land and is heavily forested with dead and down trees.

The municipality should consider using FireSmart principles in the development of new construction sites. It is recommended that future planning for housing and cottage subdivisions include considerations of lot size, building location, grassed areas and possibly building materials for structures on the new subdivisions. As well, road construction and driveways to new homes should consider access by heavy vehicles, such as fire trucks.

The community could also pass bylaws for the development of any new cottages and homes within the municipality to ensure new developments are built to FireSmart standards to reduce the potential impacts of fire on homes in remote areas.

Public wildfire education goes beyond wildfire prevention and includes hazard reduction at an individual property level and evacuation preparation for the family. Over time, many of the FireSmart concepts can be passed on to community members through a variety of channels.

A FireSmart committee is essential to the acceptance and continuation of the program in the community. The Town Council and Fire Chief can work with the Ontario Ministry of Natural Resources and Forestry (OMNRF) to help facilitate the development of the committee. It is recommended that the Fire Chief take the FireSmart workshop prior to a committee being formed.

Two community waste disposal sites are located in the municipality. The Oliver Lake waste disposal site is in a predominantly coniferous forest area and is in need of work to provide a fire proof clearing from the dumping site to surrounding forest. At the Sand Hill site, work towards fire proofing, as well as widening the site to create a fire proof boundary between the dump site and surrounding forest fuels has been completed.

FIRESMART IN FUTURE DEVELOPMENT

As with many communities in Ontario, rural housing is in high demand and the requirement for cottage subdivision areas grows continually. Many communities have future developments started or planned and these developments should be designed with FireSmart principles in mind. These include large lots and structures built away from forest edges, homes constructed of fire resistant materials and driveways constructed to allow for access for fire trucks and large suppression vehicles.

If these principles are applied in the planning process and development of future infrastructure in the community, homes and other key buildings will be more fire safe.

WILDFIRE PUBLIC EDUCATION

The MNRF and local fire departments have had a wildfire prevention program delivered to municipalities in Ontario for many years. While it is important to maintain that program, it is equally important to develop and distribute FireSmart related materials and information that is specific to community needs.

Residents should be made aware of the importance of, and how to reduce the fire hazard around their homes. Community leadership can decide on the most effective venues for getting the information out to homeowners and cottage subdivision areas. Public meetings and information sessions may be more effective than reading materials. The properties of some local residents and others that have had their hazard reduced can be used as models for what can be achieved.

While evacuation is not a core part of FireSmart, it should be included in the public education process. Despite the best plans and mitigation efforts, it is a reality that the community may need to evacuate due to smoke concerns or the direct threat from an encroaching wildfire. While the overall planning for a community evacuation is the responsibility of community leadership, it is important for residents to know how to prepare for and respond to a call for an evacuation. Emergency Management Ontario provides a variety of information for families on how to be ready for an evacuation and prepare for an emergency. The advanced knowledge, preparation and planning will make a stressful time more manageable.

EARLY WARNING SYSTEM

The community may want to develop a system to let people know when there may be a threat of wildfire. Ensuring that the members of the community have all of the pertinent information in times of an emergency is crucial in keeping their family and properties safe.

WILDFIRE RESPONSE

The MNRF and the local fire department share responsibility for the provision of fire management services, including fire suppression and prevention for Neebing and the surrounding areas. The Thunder Bay Fire Management Headquarters is located approximately 35 kilometers north of the community and would respond to any wildfire starts in the area.

Plans should be in place to set up sprinklers to protect key infrastructure and homes within the municipality, especially some of the more susceptible cottage subdivision areas that have been identified within the plan. The municipality should consider a partnership with the local MNRF staff to assist in developing sprinkler protection plans for those cottage subdivisions identified within the plan as being in high hazard areas that could be impacted by an encroaching wildfire.

The municipality should consider accessing funding for the development of their own community values protection kit, utilizing sprinklers, pumps and large hoses to supplement their existing fire cache of structural equipment. The Municipality could ask the OMNRF to assist in training local fire staff to ensure the local fire department has the capabilities to set up values protection equipment.

INTRODUCTION

Neebing is a municipality within the province of Ontario, located in the Thunder Bay District, immediately south of the City of Thunder Bay and is part of Thunder Bay's Census Metropolitan Area. The latest population estimate for the Municipality is approximately 2000 people, which increases during summer months with cottage owners occupying seasonal properties.

Neebing comprises the former geographic townships of Blake, Crooks, Pardee, Pearson and Scoble and was incorporated in its current form on January 1, 1999. It should not be confused with the geographic township of Neebing, which was amalgamated into the City of Thunder Bay in 1970.

The Municipality of Neebing was incorporated in 1881 by the Legislative Assembly of Ontario. It included Neebing township, Neebing Additional township, Blake, Crooks and Pardee townships. In 1892, all of Neebing Additional township and a large portion of Neebing township were removed to form the City of Fort William. In 1970, the remainder of Neebing township was also removed from the Municipality of Neebing, leaving it with only the name. On January 1st, 1999, the annexation of Scoble and Pearson occurred, forming the now larger Municipality.

The eastern boundary of the Municipality is Lake Superior with a number of the islands in the lake falling within the Municipality. The southern boundary is made up of the Canadian/American border at Pigeon River, with the City of Thunder Bay and Fort William First Nation forming the Northern boundary.

The Municipality of Neebing is easily accessible by car, boat and plane, with Highways 61, 608, 597, 595 and 593 traversing the municipality. Thunder Bay International Airport is also a short 20 minute drive north of Neebing.

The Municipality has a volunteer Fire Department and 5 operating fire halls to provide fire services to its residents. Organized training occurs for structural fires and small wildfires, but the municipality relies on an agreement with the Ministry of Natural Resources Fire Management Program for major wildfire response.

There is not a typical town/village infrastructure located within the Municipality (i.e. water and sewer systems, downtown core). It is mainly comprised of single family homes, large farm properties in the northern and central sections of the municipality and cottage subdivisions scattered on several inland lakes and along the shore of Lake Superior.

As the move to rural living increases, so does the number of permanent residents living at lakeside homes. Most of the cottage subdivisions identified in the plan have multiple homes that are classified as permanent year-round residences.

Through proper planning, the Municipality of Neebing can reduce its risk of negative wildfire impacts and increase the ability to respond to wildfire emergencies. It is normally the community and stakeholders who are best at assessing their current conditions and finding solutions that work. Through FireSmart planning and the Community FireSmart Recognition Program, small communities and subdivisions can proactively mitigate much of the risk and respond to wildfires successfully.

The Ministry of Natural Resources Aviation Forest Fire and Emergency Services branch is currently encouraging small communities in developing FireSmart Community Plans with a strategic approach to developing processes to mitigate the approach of wildfire into the affected communities. Community plans also identify higher risk areas inside the community and provide suggested FireSmart processes that can be implemented to help protect community values should a wildfire occur.



Neebing Municipal Office located on Highway 61.

THE PLANNING PROCESS

The planning process outlined in this document recommends six steps to create a comprehensive, workable fire plan. By following these steps, municipalities should be able to: achieve wide stakeholder involvement, assess vulnerabilities to the community's current resources and infrastructure, identify areas that need improvement and implement an emergency response and hazard mitigation plan.

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STEP 1 - IDENTIFY STAKEHOLDERS

Community Facilities Contact List

	PHONE #	FAX #
MUNICIPAL OFFICE	(807) 474-5331	(807) 474-5332
FIRE DEPARTMENT FIRE DISPATCH	(807) 474-5331 DIAL 911	(807) 474-5332
CANADA BORDER SERVICES	(800) 461-9999	
U.S. BORDER SERVICES	(218) 475-2244	(218) 474-2651
ONTARIO TOURIST INFORMATION CENTER	(807) 964-2094	
MINISTRY OF NATURAL RESOURCES AND FORESTRY THUNDER BAY DISTRICT	(807) 475-1471	(807) 475-1527
MNR FIRE MANAGEMENT	(807) 476-2200	(807) 476-2312
HYDRO ONE COMMUNICATIONS	1-800-434-1235	
HYDRO ONE	1(888) 664-9376	
OPP	(807) 473-2700	
MINISTRY OF TRANSPORTATION, THUNDER BAY OFFICE	(807) 473-2000	
TBAYTEL TOWERS	(807) 623-4400	1 (800) 264-9501

STEP 2- FIRE MANAGEMENT ZONES

See appendix A for the map identifying fire hazards for the municipality. Due to the nature of the diversity of the community, the planning team has concentrated efforts on identifying hazards and risks for the various cottage subdivisions within the municipality. Other forest homes within the municipality need to be assessed on an individual basis for fire risk, as per FireSmart planning guidelines. The planning team has outlined individual cottage subdivisions as individual Fire Management Zones and have identified issues and hazard ratings for each.

STEP 3 – DESCRIBE THE COMMUNITY

Neebing is an atypical community, or typical rural community, with no city center. Rather the community is comprised of individual homes, large farming areas, remote wooded areas cottage subdivisions located on the several lakes within the community and large cottage subdivisions located along the shores of Lake Superior. The rural farming areas are relatively safe from large fire incursions. Fire threats are more concentrated on some of the individual homes and large impacts could be seen in some of the cottage subdivision areas. Most of the cottage subdivisions have homes converted to year round residences and have limited access (one road in and out).

NEEBING FIRE DEPARTMENT

The Neebing Fire Department manages 6 fire halls (5 of which are active) to provide fire response to all areas of the municipality. Neebing staff number between 30-35 active members and the department has access to mutual aid from surrounding municipalities when requested. The municipality also has an agreement with the MNRF to provide suppression resources to remote areas of the municipality where access is limited (see attached map).

The Fire Department has proactively constructed a wildland fire response trailer and currently has it housed at Hall 4. The trailer contains 20 Back Packs, 3 Mark III Pumps, 2 Pump Kits, 6 Wildfire Hose Packs, as well as wildfire gear including pulaskis, shovels, pumps and hoses. This unit is available for use anywhere in the municipality. Fire response vehicles carry a minimum of 2 portable Pack Pumps during the fire season and Tanker 103 carries a portable pump and hose that can be deployed for wildland fires when required.

The Township has bylaws in place to restrict and control residential burning by community members. Burning of any type, including campfires, requires a burning permit which is issued seasonally. The municipality regularly suspends burning permits due to high to extreme hazards when it is deemed necessary.

The Neebing Fire Department/Municipality maintains a website for residents and visitors to access where fire concerns and/or restrictions are posted.

The MNRF regularly mans the Pigeon River Border Crossing with signs or staff, during high to extreme burning conditions or when Restricted Fire Zones are in effect. They also provide local radio messaging to the surrounding community members, with updated information on burning conditions and current regulations. The municipality is considering the development of a smart phone app that will allow the fire department to communicate directly with fire permit holders to pass on restrictions or cancelations.



Fire Hall 1

2. ESTIMATED PROPERTY/INFRASTRUCTURE AT RISK

An onsite assessment was conducted for the municipality over several days in the fall of 2017 and the spring/summer of 2018. The municipality is an anomaly in that it does not have an urban center or municipal infrastructure in the conventional sense. It is mostly a rural community comprised of large farming areas, rural homes and cottage subdivisions surrounded by heavily forested areas. The central portion of the municipality contains the majority of the farming community and is mostly safe from large fire incursions. Low fire hazard value fuel types and large open farmable areas and plowed or cultivated fields provide great usable fire barriers to prevent any wildfires from reaching the homes in the area.



Open, unforested farm areas inhibit potential fire movement through fuel vegetation



Local farming community comprised of large cultivated fields that would reduce fire movements



Farm field acts as a firebreak between forested sloped area

There are a number of local businesses located in the north central section of the municipality, including The Thunder Oak Cheese Farm, Thunder Bay Co-op and Slate Farm Dairies. All of the building locations for these businesses are located in relatively fire safe areas surrounded by open farmlands.



Thunder Oak Cheese Farm office and store



Example of local area home that has implemented FireSmart construction techniques



Example of local area home that has implemented FireSmart construction techniques

There is some potential for fire related concerns in the northwestern corner of the municipality and the western area, where farming methods concentrate on grasslands for cattle feed. These areas are commonly covered in dead grasses in the spring of the year and could pose a risk to structures if a wildfire did occur.



Long dead grass left uncut around structure creates fuel source potential



Long grass fields posing spring fire risks

The main risks to people and infrastructure lie within the many cottage subdivisions located on inland lakes and the Lake Superior shoreline within the municipality. Some of these areas are located in dense conifer forests, have poor road access and most homes have volatile fuels located in the 10 to 30 meter zone around them. Further details will be provided regarding these cottage areas later in the plan.

The Neebing Municipal office is located directly on the east side of Highway 61. The 6 fire halls are located throughout the municipality. All of the buildings have been constructed in relatively safe fire zones with FireSmart materials, such as metal roofs and siding.



Fire hall constructed of FireSmart materials and clear of possible fuels



Community Hall constructed of fire smart materials and clear of possible fuels

3. ECONOMIC VALUES AT RISK

There is no major industry located within the municipality, although several small businesses operate out of home office type structures. Thunder Oak Cheese farm and Thunder Bay Coop are located in the northern sector in a low risk fire area. Mink Mountain Resort is located on the shore of Lake Superior and will be discussed in the subdivision section of the plan.



Thunder Oak Cheese Farm



Thunder Bay Co-op



Mink Mountain Resort Main Building

4. NATURAL RESOURCE VALUES AT RISK

There are no known natural resources values at risk. The municipality houses a provincial park along Pigeon River, but the area has been closed for several years. As well, the municipality has several hiking trails to look out points (Finger Point, Jarvis Point) and waterfalls, that may have people on them from time to time.

5. FOREST OPERATIONS

Greenmantle Forest Inc. manages the Lakehead Forest, including part of the Township of Neebing. Greenmantle conducts forest and renewal operations on crown land within the township. Private lands are also commercially logged from time to time by their owners.

6. COMMERCIAL ENTITIES

The community has several commercial enterprises located mostly along the highway corridor, including the Ontario Tourism structure located to the south at the U.S./Canada border



Pigeon River Tourist Information Building



Pigeon River Canada Border Services Agency Building

7. CORRIDORS AND TRANSPORTATION

The municipality is cross sectioned with one major highway (Highway 61), secondary highways and numerous gravel roads leading to private homes and cottage subdivisions. Secondary roads are maintained by the municipality and kept in good condition and can also handle heavy vehicles (fire trucks). Some cottage roads are narrow, brushed in and have narrow turn-arounds, which can potentially make it difficult to access for fire response vehicles. There are no rail lines or pipelines that run through the community.

8. PREVENTIVE MEASURES OR BYLAWS

The municipality has bylaws in place to restrict/control summer burning of grass and brush in all areas within their control. Included are seasonal permits for campfires and incinerators, and site specific one time permits for brush/slash pile burning. The municipal bylaw is derived from sections of the Forest Fire Prevention Act to control unwanted burning. The municipality is working on a phone app for burning permit holders to advise them of restrictions or cancellations of permits when required due to fire hazard potential.

9. LAND USE ASSESSMENT

Farming and rural housing are the primary uses for inland regions and recreational properties are the primary land use for the Lake Superior and inland lake areas.

10. EVALUATE FIRE HISTORY

According to MNRF records, the municipality has a fairly low fire occurrence. The MNRF has responded to only 20 fires within the municipality in the last 20 years, 12 of which were human-caused with the other 8 caused by lightning and all occurring in remote areas of the municipality. The municipal fire department has responded to over 48 fires in areas it controls in the agreement in the past 17 years. 25 percent of these fires can be classified as grass fires, while the remainder are forest type fires, including brush pile burning fires.

TABLE 1. OMNRF FIRE RESPONSE

YEAR	FIRE	CAUSE	FINAL SIZE
1997	THU107	IFR MIS	13.3 SUP 0.1
1997	THU70	IFR REC	14.7 SUP 0.1
1998	THU23	IFR MIS	6.4 SUP 0.1
1998	THU151	IFR RES	12.1 SUP 0.1
1998	THU28	IFR MIS	2.4 SUP 0.1
1999	THU4	IFR MIS	10.9 SUP 0.2
2000	THU3	IFR IDF	0.6 SUP 0.3
2001	THU29	IFR REC	13.7 SUP 1
2002	THU19	IFR LTG	3.6 SUP 0.5
2003	THU35	IFR MIS	19.3 SUP 0.1
2003	THU76	IFR LTG	0 SUP 0.1
2005	THU36	IFR RES	15.2 FUL 0.1
2006	THU262	IFR LTG	28.2 FUL 0.2
2007	THU49	IFR LTG	0.5 FUL 0.1
2008	THU15	IFR LTG	0.8 FUL 0.2
2011	THU111	IFR LTG	17 FUL 0.1
2011	THU112	IFR LTG	17 MON 1
2011	THU116	IFR LTG	27.1 FUL 0.1
2011	THU118	IFR REC	8.7 FUL 0.2
2015	THU32	IFR RES	13.9 FUL 0.1

FIGURE 1. OMNRF FIRE HISTORY MAP 1997-2015

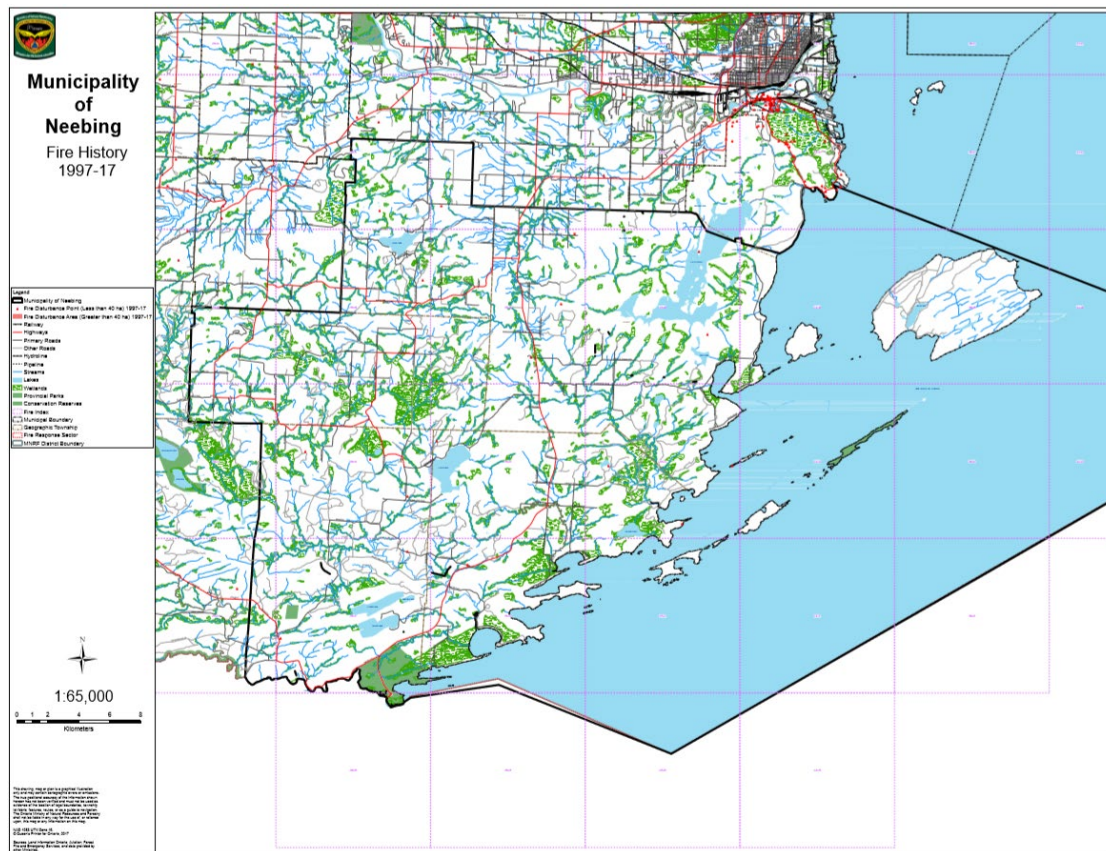


TABLE 2. NEEBING WILDFIRE SUMMARY 2000 TO 2017

NEEBING WILDFIRE SUMMARY					
YEAR	DATE	ALL NUMB	GRASS	BRUSH	
2000	14-Mar	1400		X	
	30-Jun	3400		X	
	07-Jul	3600		X	
2005	15-Apr	2505	X		
	19-Apr	2705		X	
	28-Jul	5105		X	
	11-Nov	7405		X	
	28-Dec	8605		X	
2008	05-Apr	1308		X	
	21-May	2208	X		
	11-Jun	2708	X		
	05-Aug	4708	X		
	02-Sep	6108	X		
	05-Sep	6208	X		
	27-Sep	6708	X		
	22-Oct	6908	X		
2009	17-May	2809	X		
	04-May	2209		X	
	17-May	2709		X	
2010	16-Apr	2210	X		
	14-Aug	6000	X		
	17-Apr	2310		X	
	02-Nov	8810		X	
2011	09-Feb	1011	X		
	17-May	4011	X		
	13-Sep	8711	X		
	14-Sep	8811	X		
	11-Dec	A811	X		
	31-Dec	B411	X		
	31-Dec	B511	X		
	20-Jul	7011		X	

NEEBING WILDFIRE SUMMARY(CONT)

2012	29-Jun	3712	X			
	24-Jul	4212	X			
	29-Aug	4712	X			
	01-Sep	4912	X			
	29-Sep	5912	X			
	20-Oct	6612	X			
	28-Apr	2612		X		
2013	01-Jan	3513	X			
2014	24-May	3114	X			
	01-Nov	7014	X			
2015	26-Apr	15-025	X			
	02-May	15-028	X			
	29-Jul	15-062		X		
	01-Sep	15-070		X		
2017	23-Jan	17-008	X			
	12-Apr	17-024		X		
	17-Jul	17-043		X		



Fire history map, 2000-2017

While there is some potential for wildfire to start outside the municipal boundaries and enter into populated areas, the real threat in the municipality is human caused fires starting in close proximity to, or within a cottage subdivision and spreading by wind driven embers through a subdivision.

STEP 4 - INFRASTRUCTURE AND PROPERTY ASSESSMENT

The plan will address cottage subdivisions on an individual basis, as the threat to the community is more evident in these close-knit type community developments.

Farm areas and individual homes scattered around the municipality have less of a wildfire threat, although some homes could have seasonal hazards (spring time grass fires) and/or fuel threats due to the proximity of coniferous type species that could increase fire hazards around individual homes, if a wildfire did develop in close proximity.



A good example of a FireSmart rural home



Rural property and driveway that should have some potential fuel material removed

The following subdivisions have been identified and will be discussed for threats and potential mitigation measures:

East Oliver Lake

South Oliver Lake area

West Oliver Lake

Cloud Lake

Moose Lodge campground

Lake Lenore

Little Pigeon Bay

Pine Bay/Memory Lodge subdivision

Little Trout Bay

Memory Lodge Area

Cloud Bay subdivision

Mink Mountain

Sturgeon Bay subdivision

For fires occurring near these areas, fire managers must give consideration for the timely evacuation of the community, due to restricted access/egress into and out of the subdivision area through the local road systems. Fires that could potentially burn across access roads or highways leading into and out of the area could entrap residents, preventing them from leaving the area.

OLIVER LAKE AREA

Oliver Lake is located in the northwestern corner of the municipality, close to the City of Thunder Bay. Oliver Lake is a popular summer recreation spot for Neebing area residents, as well as Thunder Bay residents who either have seasonal property or come for day trips.



EAST OLIVER LAKE AREA



East Oliver encompasses a limited access subdivision on the north east corner of the lake. Access to this area is a dead end road and while the main road is well maintained, some of the accesses to individual cottages are on narrow roadways and could cause issues in smoky conditions during evacuation events. The fuel types present are mainly mixed wood conifer, with laddering and ground fuels present in some areas. Some cottagers at the end of the road on the north side have cleared lands surrounding their structures, but conifer trees remain in close proximity to buildings.



Cleared areas but conifer trees too close



Fuels around cottages in East Oliver



Heavy fuels around camps at East Oliver Lake



Fuel types along road leading into East Oliver Lake

SOUTH OLIVER LAKE SUBIVISION





Mixed wood fuel types can contribute to increased fire risk in this area. Cottage owners have debris and fuels encroaching well within the preferred 30 meter zone at the vast majority of cottages, which increases risk of losses in the event a fire encroaches upon the area.

WEST OLIVER LAKE SUBDIVISION



This area contains the lake public access point as well as a number of cottages. Only one road (West Oliver Lake Road) leads into and out of the area, limiting escape routes. There is a large volume of fuels in close proximity to the cottages and some of the roadways to cottages on the southwestern shore. Roadways are very narrow and brushed in, with limitations for fire vehicle usage.



Heavy fuel loadings around homes at West Oliver



Narrow roadways limit access for fire trucks and access in West Oliver

CLOUD LAKE SUBDIVISION



The Cloud Lake subdivision is located near the centre of the municipality and the main access road traverses the north side of the lake. Cottages are located on the east and north end of the lake. Most cottages are located on the downslope side of the main access road, with steep slopes leading up to the north. Some conifer fuel types are present on the upslope but, for the most part, fuels are mixed to deciduous in nature. Escape in the event of a wildfire could be east or west out of the subdivision.



Cloud Lake slope



Cloud Lake fuel types

Fuel types within the subdivision are conifer and, like other subdivisions within the municipality, if a fire started near cottages, fuels could easily carry fire across multiple properties.



Cloud Lake fuel types

Some cottagers have cleared their properties to make them more fire safe.



Cloud Lake FireSmart properties

MOOSE LODGE CAMPGROUND/CLOUD LAKE



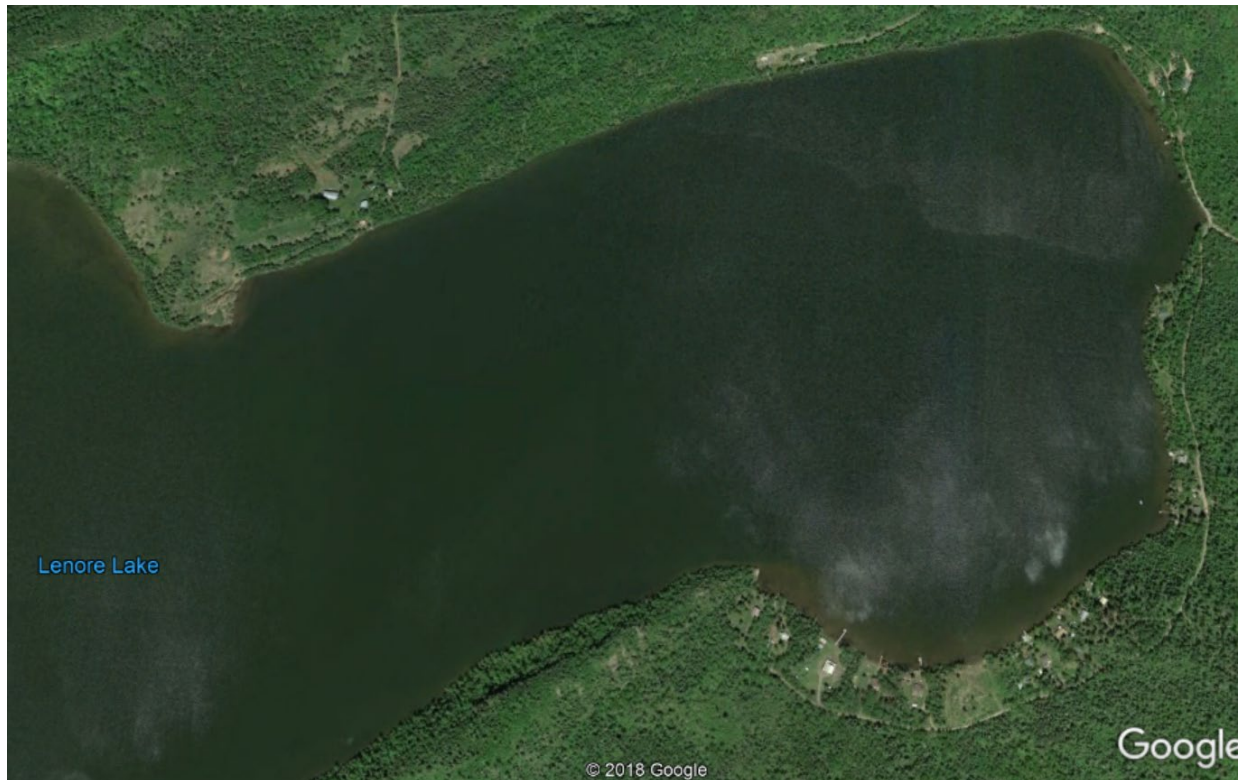
Located on the southwest corner of Cloud Lake, this camping area is located at the end of a dead-end road off of Highway 597 to the west of the lake. The campground is comprised of seasonal use trailers, most of which are permanently located on lots. A recreation center is located at the beach area for residents to use.

The area is surrounded by mostly deciduous forest, with some undergrowth of spruce and balsam. Older cutovers surround the area as well and are regenerating to a deciduous forest.

There are approximately 50 structures (buildings and trailers) permanently on site, with room for more seasonal trailers to be brought in through the summer months.



LAKE LENORE SUBDIVISION



Lake Lenore is a small lake located in the southern part of the municipality. It is located on a dead-end road, west off Highway 61, up a steep grade. The main cottage subdivision is located on the south shore, with several additional cottages located on the east and north shore along narrow roadways. Fuel types on the south side of the lake are coniferous, with lots of dead and down wood materials around and within the cottage areas. Any wildfire that starts within the area could have negative impacts to multiple cottages.



Lake Lenore fuel types



Lake Lenore narrow roads



Lake Lenore north shore fuel types

Fuel types on the north shore are mixed wood, with some conifers close to shoreline cottages

LITTLE PIGEON BAY SUBDIVISION



Little Pigeon Bay development is comprised of two areas, the southwest and northeast. The southwest area is an older cottage subdivision located on a small narrow dead end road, south of the main landing. Cottages here are located very tightly to flammable fuels and have had little clearing out to the 10 meter zone completed.



South cottages showing fuel types

Cottage lots to the northeast are on steep terrain and located in volatile fuel types. The area was damaged by a storm several years ago, increasing the amount of ladder fuels on the ground in close proximity to homes. There are multiple vacant lots in varying degrees of clearing, as well as summer trailers and permanent homes in the subdivision. The main road is a dead end, so access and egress are restricted, but the road does act as a good fuel break against any encroaching wildfire from inland. The fuel types along the shore and surrounding the camps and homes could contribute to a catastrophic event, if a fire started along the shoreline in proximity to the camps.



North cottages fuel types



Main road access/fuel break

Slope and ground fuels

One of the permanent owners in the north section has been actively “FireSmarting” the property. Gravel surrounds the home out to 10 meters and some clearing and thinning has taken place out to the 30-meter zone.



Thinning and removing ground fuels up to 2 meters

PINE BAY/MEMORY LODGE SUBDIVISION

Pine Bay access is restricted by one road in and out of the subdivision. Cottages are along the shoreline and the main access road can act as a fuel break from encroaching inland wildfires. However, the road is older and narrow and could limit emergency vehicle access. To be fully utilized as a fuel break it would need to be widened. There are some cutover areas to the north of the subdivision, but the cutover fuels are not conducive to enhancing a large fire. Homes and cottages can be negatively affected by a fire within the subdivision, as hazardous fuels are present between the structures.



Pine Bay/Memory Lodge fuel types

Several homes to the north and east ends of the subdivision have developed sound “FireSmart” properties, with areas being cleared out to the 30 meter zone and beyond.



Examples of clearing properties out to the 30-meter zone

Some homes have fire proof building materials to reduce their susceptibility to fire damage, but still have other fire materials close to them that could impact the structures if a fire encroaches



Metal roof



Cleared property, fire wood against house

LITTLE TROUT BAY SUBDIVISION



This subdivision is located away from the shore and comprised of new and old construction, with some permanent and some seasonal residences. Homes are at the end of a dead-end road and could be impacted for access or egress if a fire blocks the main road. There is also a popular boat launch and picnic area to the northeast for tourists and fishermen to enjoy.



The slope near the cottage subdivision is downhill to the shore, reducing fire intensity coming into the subdivision. Due to fuel types in the subdivision, if a fire did occur within the area, most homes would be impacted



Picnic area/boat launch



Typical home/cottage



Metal roof, but embedded in hazardous fuel types

A small private trailer park is also located just north of the access point on the south side of Cloud River. It is accessed from a small narrow road leading down to the water's edge. Trailers and buildings are located within the forest and would be very susceptible to wildfire encroachment due to fuel types and their placement within the forest



Cloud River



Camper embedded in the trees



Sauna embedded in trees

CLOUD BAY SUBDIVISION



Cloud Bay subdivision is accessed off Highway 61 along the Cloud Bay Road. It is a one way in/one way out road, so structures could be impacted if fire closed the road system. Just before the subdivision, a cell phone tower is located in a clearing at the top of the hill and is well cleared and protected from wildfire



Cell tower and buildings Cloud Bay

Most cottages to the north are on the downslope side of the main access road, so any fires encroaching on the subdivision would creep downhill. Cottages to the south are on both sides of the road and cottages on the west side of the road are on steep terrain.



Cloud Bay slopes and fuel types



Cloud Bay fuel types

MINK MOUNTAIN



The Mink Mountain development is comprised of approximately 58 cottage lots and a resort located back from the lake. The resort area is a hotel style office building that has individual rooms for rent and provides office space for the rental of 6 cottages along the lake shore down from the resort.



Mink Mountain Resort

Approximately 22 of the 58 cottages are year round residences and most of the rental properties are rented year round.



Mink Mountain slope down to Lake Superior

Mink Mountain subdivision is relatively safe from encroaching large wildfires. Fuel types to the west are predominantly softwood poplar and birch stands and the area slopes down to the subdivision along the lake. The road provides an excellent fuel break from any potential wildfire from outside the subdivision. Fuel types within the subdivision, particularly the northern section, could facilitate a fire spread within the subdivision if one started close to the cottages.



Mink Mountain fuel types



Mink Mountain fuel break



Mink Mountain cottage lot

STURGEON BAY WEST



Sturgeon Bay structures are located along a dead end road on Sturgeon Bay. The road continues on to a second subdivision called Flatland Harbour, where the road dead ends. This area is well developed, on a good road system. Some cottage lots are well cleared and some have coniferous fuels within the 30 meter zone. The terrain along the lake shore is flat, with good access to water.



Sturgeon Bay camps



Access road/fuel break



Example of cleared lot



Cottage lot needing some clearing

STURGEON BAY EAST/FLATLAND HARBOUR



Flatland Harbour subdivision has a mix of year-round and seasonal residences. Most cottages are on the lake side of the main road, but several properties are located on the

uphill side of the main road away from the lakeshore. Fuel types are more coniferous in this area, with some lowland cedar west of the main road. Most properties in the area are in need of cleanup of flammable materials to reduce the risk of catastrophic wildfire. The area also has a day use boat launch for public access to Lake Superior.



Flatland Harbour cottage examples



Flatland Harbour access point

Fuels around cottages



Fuels around Flatland Harbour

Home owner working on FireSmart property

B. ROADS

The municipality is transected by Highway 61, which is the main thoroughfare for traffic heading south to the United States and traffic heading north into Canada. Several secondary highways (Highways 608, 597, 595, and 593) travel west off Highway 61 leading thru the municipality to homes and then out of the area into other municipalities (South Gillies). These highways are all paved. Secondary roads are numerous and are mostly gravel, maintained by the municipality. Most of the secondary roads leading into the cottage subdivisions are two lane and dead-end roads and could be impacted under smoky conditions from wildfires. Cottage driveways are mostly large enough to accommodate fire engines, although some cottage lots on Cloud Lake are on steep slopes and would not accommodate fire trucks. As well, access into Lake Lenore is fairly restricted for large fire engines. Road signage is good, with all properties noted as having fire numbers identifying their properties at the entrance of each driveway.

C. DRIVEWAYS IN SUBDIVISIONS AND RURAL AREAS

Most driveways in rural areas will accommodate heavy fire equipment. Some driveways in the smaller cottage subdivisions and some that are on steep slopes will not accommodate heavy fire trucks (Lake Lenore).

D. STRUCTURES

Home assessments were not completed for the field studies. Fuel hazard for most of the municipality is low to moderate, with some high pockets of coniferous fuels. There is a risk of cottage fires igniting wildfires in most of the individual cottage subdivisions, and in some subdivisions, there is a risk of wildfire entering the subdivision and igniting structures.

E. UTILITIES

Electricity services are provided by Hydro One. Vegetation management along electrical lines needs to be evaluated along roadways and private residences for risk of fire starts.

Several Bell towers are located within the municipality, along with Thunder Bay Telephone cell towers. On checking one site, it was noted that the site was well protected with fire resistant building materials and limited coniferous growth around the towers.



Bell tower site

Cell phone services are adequate for the most part throughout the community, although there are pockets with little or no coverage along Lake Superior, to the south near the American border. This is particularly troublesome in cottage subdivisions for fire reporting and evacuation notices.

F. WILDFIRE RISK AND HAZARD ASSESSMENT (SATELITE/FRI DATA ANALYSIS)

Historically wildfires that have occurred in the area have remained small. Local residents indicated a major fire occurring every 80 years, with the last major fire in the municipality occurring in the 1940's.

Overall, there are little signs of poor forest health in the municipality. There are some wind damage areas in the southern portion adjacent to the Little Pigeon Bay subdivision.

There are extensive areas of younger regenerating forest stands and recent small cutovers. Most of these areas are regenerating to hardwood species (poplar and birch), helping to create fire resistant areas under summer conditions.

Based on our assessments, we have concentrated our efforts on the various cottage subdivisions located within the municipality along Lake Superior and inland lakes.

Homes and businesses within the community are not immune to a fire threat under the right conditions, but for the most part are situated in areas where you might not expect large fires to occur. Even with this assessment, most home owners in this area could benefit from FireSmart education and clearing their properties out to the 30 meter zone of hazardous fuels to better protect their homes.

The planning team has broken down the various cottage subdivisions into FireSmart Management Zones and provides an overview for each subdivision, based on its fuel types and risk to fire encroachment. For Lake Superior cottage areas, most (with the exception of Little Pigeon Bay and Little Trout Bay) are bordered to the west by deciduous forests and are downslope to the lake, which would reduce the threats of a major fire running at the subdivision. However, all subdivisions have an internal threat of

a fire starting within the subdivision and spreading to surrounding structures due to wind and fuel types. Each subdivision we visited could benefit from individual owners “FireSmarting” their properties to prevent fires from impacting their homes or cottages.

Based on our assessments in the spring/summer of 2018, forest areas around most of the cottage subdivisions have moderate fuel loading, with some having a heavy fuel component of spruce and balsam. Fuel loading in the rural areas of the community is low to moderate, with most areas regenerating in a poplar mix and grasses.

Most cottage subdivisions have a heavier fuel loading within each subdivision, with spruce and balsam fir being the predominant species.

Although formal home and site assessments were not completed, it was noted that most homes and cottages in each subdivision do **NOT** have significant buffers around their structures. In a lot of cases, vegetation is directly contacting many buildings, firewood and combustible materials are piled against buildings and most buildings are not constructed of fire resistant materials.

HAZARD ASSESSMENT- TOWNSHIP OF NEEBING

The FireSmart Area Hazard Assessment normally looks at the hazard in a zone 30-100 meters out from a structure(s)/facility(s) in the community and sometimes beyond that distance. This plan is directed at taking a holistic view for each of the cottage subdivisions. The following assessment point listings are for the hazard factors for each subdivision. Individual home assessments can be completed by the homeowner or a trained individual with some online learning tools.

East Oliver Lake

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of conifer trees. The southern boundary of the subdivision is against the shores of Oliver Lake. There is a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy mixed wood forest indicates **30** points towards the hazard rating.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity. Ladder fuels are present close to some of the homes in parts of one subdivision. This range of conditions gives **15** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around most of the infrastructure, some cottages have removed any fuels close to buildings, but a large majority have not and have hazardous fuels against homes and garages. Overall, the rating is continuous, contributing **10** points to the hazard rating.

Slope – most of the subdivision is on a slope down to the lake, or on top of the slope on steep terrain. Slope rating for the community as a whole is **0**.

Therefore, the total hazard rating for the community is **55**, which rates the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS	SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous	30
				Separated	
		0	15	15	
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material	15
				Scattered	
		0	5	5	
Ladder Fuels	2-18	Absent	Scattered	Continuous	10
		0	5	10	
Slope	2-19	0 – 10%	10 – 25%	>25%	0
		0	Even	Even	
			gullied	Gullied	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope	0
		0			
			3	5	
				TOTAL SCORE FOR FACTORS	55
				AREA HAZARD LEVEL	EXTREME

South Oliver Lake Area

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees on the south side of the road, with conifer mixed around cottages near the lake. The northern boundary of the subdivision is against the shores of Oliver Lake. There is a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating near the cottages. Areas away from the cottage subdivision have fuels that would decrease the chances of a fire running into the subdivision. However, there is a risk of fire starting in the subdivision and spreading to other structures, due to fuel types within the subdivision. The healthy mixed wood forest indicates **15** points towards the hazard rating.

Surface Vegetation – throughout the subdivision, there are some dead or downed woody materials in close proximity to structures. Away from the subdivision, forest fuels are mostly deciduous, with little surface vegetation. This range of conditions gives **15** points to the hazard rating.

Ladder Fuels – within the subdivision, ladder fuels vary from scattered to continuous around most of the infrastructure. Most homes have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is continuous, contributing **10** points to the hazard rating.

Slope – most of the community is flat to rolling. Slope rating for the community as a whole is **0**.

Therefore, the total hazard rating for the community is **40**, which classifies the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND		POINT RATINGS		SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood		Coniferous		15
		0	15	Separated	Continuous		
				15	30		
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material		15	
				Scattered	Abundant		
		0	5	5	15		
Ladder Fuels	2-18	Absent	Scattered		Continuous		10
		0	5	10			
Slope	2-19	0 – 10%	10 – 25%		>25%		0
		0	Even	gullied	Even	Gullied	
			4	5	8	10	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope		Upper-slope		0
		0	3		5		
					TOTAL SCORE FOR FACTORS		40
					AREA HAZARD LEVEL		EXTREME

West Oliver Lake

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees away from the subdivision and high concentrations of conifer close to homes and structures within the subdivision. The eastern boundary of the area is against the shores of Oliver Lake. There is not a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy mixed wood forest away from the subdivision indicates 15 points towards the hazard rating, but the high concentration of conifer within close proximity to structures raises the hazard rating to **30**.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity to buildings. Some ladder fuels are present close to some of the homes in parts of the subdivision. This range of conditions gives **5** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Some homes have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing **5** points to the hazard rating.

Slope – most of the community is flat to rolling. Slope rating for the community as a whole is **0**.

Therefore, the total hazard rating for the community is **40** which classifies the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS	SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous	30
				Separated	
		0	15	15	
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material	5
				Scattered	
		0	5	5	
Ladder Fuels	2-18	Absent	Scattered	Continuous	5
		0	5	10	
Slope	2-19	0 – 10%	10 – 25%	>25%	0
		0	Even	Even	
			gullied	Gullied	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope	0
		0	3	5	
				TOTAL SCORE FOR FACTORS	40
				AREA HAZARD LEVEL	EXTREME

Cloud Lake

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees away from the lakeshore and a high percentage of coniferous forest within the subdivision. The southern boundary of the community is against the shores of Cloud Lake, with a gravel road providing a fuel break to any fires coming downhill towards the subdivision. There is a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The coniferous forest around the homes and cottages indicates 30 points towards the hazard rating.

Surface Vegetation – throughout the subdivision, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity to structures. Surface fuels are present close to some of the homes in most parts of the subdivision. This range of conditions gives 5 points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around most of the infrastructure, there are ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing 5 points to the hazard rating.

Slope – most of the community is steep slopes down to the lake. Slope rating for the community as a whole is 5.

Position on the Slope – cottages are located midway on the slopes, leading to a point scoring of 3.

Therefore, the total hazard rating for the community is 48, which classifies the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS	SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous	30
				Separated	
		0	15	15	
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material	5
				Scattered	
		0	5	5	
Ladder Fuels	2-18	Absent	Scattered	Continuous	5
		0	5	10	
Slope	2-19	0 – 10%	10 – 25%	>25%	5
		0	Even	Even	
			gullied	Gullied	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope	3
		0	3	5	
				TOTAL SCORE FOR FACTORS	48
				AREA HAZARD LEVEL	EXTREME

Moose Lodge Campground

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees. The northern and eastern boundary of the community is against the shores of Cloud Lake. There is not a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy mixedwood forest indicates **15** points towards the hazard rating.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding trailers, campers and buildings. There are some dead or downed woody materials in close proximity. This range of conditions gives **5** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around most of the critical infrastructure, the campground has removed any fuels close to buildings. Some locations have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing **5** points to the hazard rating.

Slope – most of the community is flat to rolling. A central hill location for the water tower sits in the middle of the campground but does not contribute to any slope ratings. Slope rating for the community as a whole is **0**.

Therefore, the total hazard rating for the community is **25**, which classifies the Area Hazard Level as **MODERATE**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND		POINT RATINGS		SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood		Coniferous		15
		0	15	Separated	Continuous		
				15	30		
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material		5	
				Scattered	Abundant		
		0	5	5	15		
Ladder Fuels	2-18	Absent	Scattered		Continuous		5
		0	5	10			
Slope	2-19	0 – 10%	10 – 25%		>25%		0
		0	Even	gullied	Even	Gullied	
			4	5	8	10	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope		Upper-slope		0
		0	3		5		
					TOTAL SCORE FOR FACTORS		25
					AREA HAZARD LEVEL		Moderate

Lake Lenore

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of coniferous trees on the south shore subdivision and mixed wood on the north shore. There is a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The coniferous forest on the south shore provides **30** points towards the hazard rating.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity. This range of conditions gives **5** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Most cottages have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is continuous, contributing **10** points to the hazard rating.

Slope – most of the community is flat to rolling. On the south side of the lake, steep terrain is evident south of the roadway, Slope rating for the community as a whole is **0**.

Therefore, the total hazard rating for the community is **45**, which classifies the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS	SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous	30
				Separated	
		0	15	15	
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material	5
				Scattered	
		0	5	5	
Ladder Fuels	2-18	Absent	Scattered	Continuous	10
		0	5	10	
Slope	2-19	0 – 10%	10 – 25%	>25%	0
		0	Even	Even	
			gullied	Gullied	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope	0
		0	3	5	
				TOTAL SCORE FOR FACTORS	45
				AREA HAZARD LEVEL	EXTREME

Little Pigeon Bay

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of coniferous trees within the subdivision. The eastern boundary of the subdivision is against the shores of Lake Superior. There is a noticeable number of dead and downed trees in the forested area from an older ice storm that would justify an increase in the hazard rating. The healthy mixed wood forest indicates **30** points towards the hazard rating. The Main Road access provides for a sufficient fuel break from fires entering the subdivision, but a fire originating within the subdivision could be catastrophic.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity. This range of conditions gives **15** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels are continuous in close proximity to most of the dwellings within the subdivision. Overall, the subdivision rating is continuous, contributing **10** points to the hazard rating.

Slope – most of the community is flat to rolling outside the subdivision and steep slopes up from the road and down to the lake to the east. Homes and cottages are all located at the top of the slope, increasing the danger to them. Slope rating for the community as a whole is **10**.

Position on the Slope – most homes are located at the top of the slope which will contribute to **10** points to the hazard.

Therefore, the total hazard rating for the community is **75** which classifies the Area Hazard Level as **EXTREME**. The older subdivision to the south is flat in nature, but the team has classified the whole area together for this submission.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND		POINT RATINGS		SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood		Coniferous		30
		0	15	Separated	Continuous		
				15	30		
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material		15	
				Scattered	Abundant		
		0	5	5	15		
Ladder Fuels	2-18	Absent	Scattered		Continuous		10
		0	5	10			
Slope	2-19	0 – 10%	10 – 25%		>25%		10
		0	Even	gullied	Even	Gullied	
			4	5	8	10	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope		Upper-slope		10
		0	3		5		
					TOTAL SCORE FOR FACTORS		75
					AREA HAZARD LEVEL		EXTREME

Pine Bay/Memory Lodge Subdivision

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of coniferous trees within the subdivision. The eastern boundary of the community is against the shores of Lake Superior. There is a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy coniferous forest indicates **30** points towards the hazard rating.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are dead or downed woody materials in close proximity to homes and cottages. This range of conditions gives **15** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around most of the homes there are ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing **10** points to the hazard rating.

Slope – most of the community is flat to rolling. Slope rating for the community as a whole is **0**.

Therefore, the total hazard rating for the community is **55**, which classifies the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS	SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous	30
				Separated	
		0	15	15	
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material	15
				Scattered	
		0	5	5	
Ladder Fuels	2-18	Absent	Scattered	Continuous	10
		0	5	10	
Slope	2-19	0 – 10%	10 – 25%	>25%	0
		0	Even	Even	
			gullied	Gullied	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope	0
		0			
			3	5	
				TOTAL SCORE FOR FACTORS	55
				AREA HAZARD LEVEL	EXTREME

Little Trout Bay

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a mix of spruce and birch trees. The eastern boundary of the community is against the shores of Lake Superior. Forest areas outside the subdivision are mostly deciduous, with conifer dominating within the subdivision itself. There is a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy coniferous forest indicates 30 points towards the hazard rating.

Surface Vegetation – throughout the community, there are some lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity. This range of conditions gives 15 points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Some homes have well maintained yards, while other homes have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing 10 points to the hazard rating.

Slope – most of the community is steep down to the lake, with most cottages on the lake side of the road. Slope rating for the community as a whole is 10.

Therefore, the total hazard rating for the community is 65, which classifies the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS	SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous	30
				Separated	
		0	15	15	
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material	15
				Scattered	
		0	5	5	
Ladder Fuels	2-18	Absent	Scattered	Continuous	10
		0	5	10	
Slope	2-19	0 – 10%	10 – 25%	>25%	10
		0	Even	Even	
			gullied	Gullied	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope	0
		0			
			3	5	
				TOTAL SCORE FOR FACTORS	65
				AREA HAZARD LEVEL	EXTREME

Memory Lodge Area

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees away from the lake west of the main road and higher concentrations of conifer within the cottage subdivision. There is not a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy mixed wood forest away from the lake indicates **15** points towards the hazard rating, but large concentrations of conifer within the subdivision raises the rating somewhat for fires that may originate within the subdivision.

Surface Vegetation – throughout the community, there is a mix of lawns, and shrubs surrounding homes and other buildings. Lots of homes have large areas of grass surrounding structures, reducing the risk of fire encroachment, but some homes have some dead or downed woody materials in close proximity. This range of conditions gives **5** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around a large percentage of the infrastructure, the home owners have removed any fuels close to buildings. Some homes have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing **5** points to the hazard rating.

Slope – most of the community is flat to rolling. Slope rating for the community as a whole is **0**.

Therefore, the total hazard rating for the community is **25**, which classifies the Area Hazard Level as **MODERATE**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS		SCORE	
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous		15	
		0	15	Separated	Continuous		
				15	30		
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material		5	
				Scattered	Abundant		
		0	5	5	15		
Ladder Fuels	2-18	Absent	Scattered	Continuous		5	
		0	5	10			
Slope	2-19	0 – 10%	10 – 25%		>25%		0
		0	Even	gullied	Even	Gullied	
			4	5	8	10	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope		0	
		0	3	5			
				TOTAL SCORE FOR FACTORS		25	
				AREA HAZARD LEVEL		Moderate	

Cloud Bay Subdivision

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees outside the subdivision and coniferous within the subdivision. There is not a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy mixed wood forest indicates 15 points towards the hazard rating.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity. Some ladder fuels are present close to some of the homes in parts of the subdivision. This range of conditions gives 5 points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around some of the infrastructure, home owners have removed any fuels close to buildings. Other homes have ladder fuels in the vicinity of the structures and outbuildings. We observed leaves and forest debris on roofs and lean-tos. Overall, the community rating is scattered, contributing 5 points to the hazard rating.

Slope – most of the community is flat to rolling. The southern section is steeper down to the lake, with some homes on the forest side of the road. Cottages to the north are on more of a gentle slope area and on the lake side of the main access road. Slope rating for the community as a whole is 0.

Therefore, the total hazard rating for the community is 25, which classifies the Area Hazard Level as **MODERATE**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND		POINT RATINGS		SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood		Coniferous		15
		0	15	Separated	Continuous		
				15	30		
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material		5	
				Scattered	Abundant		
		0	5	5	15		
Ladder Fuels	2-18	Absent	Scattered		Continuous		5
		0	5	10			
Slope	2-19	0 – 10%	10 – 25%		>25%		0
		0	Even	gullied	Even	Gullied	
			4	5	8	10	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope		Upper-slope		0
		0	3		5		
					TOTAL SCORE FOR FACTORS		25
					AREA HAZARD LEVEL		Moderate

Mink Mountain

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees. There is not a noticeable number of dead and downed trees in the forested area outside the subdivision, but some structures have a high percentage of conifer in close proximity to them. The healthy mixed wood forest indicates **15** points towards the hazard rating.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity. This range of conditions gives **5** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around the lodge infrastructure, the owner has removed any fuels close to buildings. Some homes and cottages have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing **5** points to the hazard rating.

Slope – most of the community is flat to rolling. Slope rating for the community as a whole is **5**.

Therefore, the total hazard rating for the community is **30**, which classifies the Area Hazard Level as **MODERATE**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND		POINT RATINGS		SCORE
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood		Coniferous		15
		0	15	Separated	Continuous		
				15	30		
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material		5	
				Scattered	Abundant		
		0	5	5	15		
Ladder Fuels	2-18	Absent	Scattered		Continuous		5
		0	5	10			
Slope	2-19	0 – 10%	10 – 25%		>25%		5
		0	Even	gullied	Even	Gullied	
			4	5	8	10	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope		Upper-slope		0
		0	3		5		
					TOTAL SCORE FOR FACTORS		30
					AREA HAZARD LEVEL		HIGH

Sturgeon Bay Subdivision

Forest Vegetation (overstory) – most of the study area can be classified as mixed wood forest, with a high percentage of deciduous trees outside of the subdivision and heavier concentrations of conifer within the subdivision. There is a noticeable number of dead and downed trees in the forested area that would justify an increase in the hazard rating. The healthy mixed wood forest indicates 15 points towards the hazard rating, but the amount of conifer within the subdivision, raises the rating to **30**.

Surface Vegetation – throughout the community, there is a mix of lawns, wild grasses and shrubs surrounding homes and other buildings. There are some dead or downed woody materials in close proximity. This range of conditions gives **5** points to the hazard rating.

Ladder Fuels – at the forest edge, ladder fuels vary from scattered to continuous. Around most of the critical infrastructure, the community has removed any fuels close to buildings. Some homes have ladder fuels in the vicinity of the structures and outbuildings. Overall, the community rating is scattered, contributing **5** points to the hazard rating.

Slope – most of the community is flat to rolling. Slope rating for the community as a whole is 0.

Therefore, the total hazard rating for the community is **40**, which classifies the Area Hazard Level as **EXTREME**.

Using the AREA HAZARD ASSESSMENT FORM, we find the following:

FACTOR	PAGE REF	CHARACTERISTICS	AND	POINT RATINGS		SCORE	
Forest Vegetation (overstory)	Page reference 2-18	Deciduous	Mixed wood	Coniferous		30	
		0	15	Separated	Continuous		
				15	30		
Surface Vegetation	2-18	Lawn or non-combustible materials	Wild grass or shrubs	Dead and down woody material		5	
		0	5	Scattered	Abundant		
				5	15		
Ladder Fuels	2-18	Absent	Scattered	Continuous		5	
		0	5	10			
Slope	2-19	0 – 10%	10 – 25%		>25%		0
		0	Even	gullied	Even	Gullied	
			4	5	8	10	
Position on Slope	2-20	Valley bottom or lower slope	Mid-slope	Upper-slope		0	
		0	3	5			
				TOTAL SCORE FOR FACTORS		40	
				AREA HAZARD LEVEL		HIGH	

STEP 4 – MITIGATION

GOALS

To implement fuel reduction strategies in areas of high fuel concentrations close to housing and/or cottage subdivisions to impede the intensity and rates of spread of wildfires approaching the areas. Fuel reductions will include removing and reducing fuels within the 30-meter zone around homes and cottages and could include fuel breaks around cottage subdivisions or critical infrastructure.

To develop some initiatives to try and engage the local population to participate in FireSmart property and vegetation strategies. The focus of this effort would be for the home/cottage owner to make modifications to Priority Zone 1 and 2.

To implement local fire prevention messaging on fire safety and improve road/lot access signage.

To work with local cottage subdivisions to develop an evacuation and emergency plan for their subdivisions.

ACTIONS

FUEL REDUCTION AND FUEL BREAKS

NEEBING TOWNSHIP

Fuel reduction should be completed at the homeowner/cottage owner level by thinning vegetation in the Priority Zone 1 and 2. Thinning should occur around home owner and cottage owner properties that have a high degree of conifer type forests surrounding them.

ENGAGE LOCAL POPULATION

The OMNRF Thunder Bay Fire Management and Regional advisor staff should work with the municipality to discuss options for an outreach program and implement FireSmart in the municipality of Neebing. It is important to begin the development of a local FireSmart committee, where a partnership can be formed between the municipality and OMNR staff. A local citizens group may become a registered program, where partnership funding programs may be possible such as the Community FireSmart Recognition Program.

FireSmart Canada has several online programs to assist municipalities with ideas and programs to promote FireSmart Initiatives. Neebing staff should review these online promotions for ideas, and potentially monies(FireSmart Canada each year offers municipalities up to \$500.00 to promote different programs, and the applications are available on their website)

FireSmart demonstration projects would be worthy to engage the local public to develop community interest in becoming a FireSmart community. Working with local citizens

groups, a property could be selected (usually a senior citizen, who cannot complete the work on their own is a good place to start) where the local Fire Management Headquarters can provide a Ranger Crew along with support staff in a public outreach day to encourage public support for the project. By hosting the event with a barbecue and the outreach trailer, public support can be achieved. Engaging interested parties to have homeowner assessments completed will open doors to other areas in the community.

The FireSmart property demonstrations should display the key options property owners have when it comes to implementing the development of priority zones. Providing a demonstration of correct pruning, alternate ways of disposal of waste products, to demonstrating correct piling and burning processes would be invaluable.

The goal of this initiative will be to have a good demonstration project completed and the beginning of a FireSmart committee formed. This may lead to the next projects of outreaching to other community residents, by either a door to door approach, or by having the outreach trailer set up at other community events to promote the FireSmart program.

IMPLEMENTING LOCAL FIRE PREVENTION PROGRAMMING

If initiatives are successful in establishing a FireSmart committee and work program, then community signage could be provided from the National FireSmart Community Recognition Program to highlight the community efforts. FireSmart Property Signs and a large community sign for the Town of Neebing can be made to instill community pride.

Through working with local community groups or cottage associations, fire hazard signs can be implemented with the community or association, to be strategically placed to inform the public of wildfire safety and the risk during high hazard periods. This would be very beneficial in areas that have public boat launches and picnic areas close to subdivisions.

Options should be examined for local citizens to dispose of yard waste, that can be mulched, chipped or safely disposed of at a suitable site. This would reduce potential for fire escape situations stemming from unorganized brush and leaf litter burning by local residents.

IDENTIFY EVACUATION STRATEGY

The local FMH could work with the municipality to help develop a wildfire emergency response and evacuation plan for individual cottage areas. Currently, fires occurring adjacent to the community could prevent an effective evacuation from occurring. At present, no subdivision has established safety zones to accommodate residents should a fire approach and close off opportunities to leave the area, or subdivision.

STEP 5 - WILDFIRE RESPONSE

Community fire prevention and fire protection services are shared between the local fire department and the Ministry of Natural Resources Fire Management program. The Municipal protection agreement spells out each agency's areas of responsibility, although each agency can and will assist each other when required. Local OMNR staff are available to provide wildfire training to municipal fire fighters if required, and additional training (i.e., sprinkler set-up training) can be provided when requested.

CONCLUSION

EMERGENCY SERVICE EQUIPMENT

General recommendations can be made to the fire department on concepts for local equipment caches, for such things as sprinkler kits and wildfire equipment that would be best suited for the fire department needs.

Values protection through sprinkler systems can be discussed in a preplanned effort for each home owner to provide their own property protection should it be required.

WILDFIRE PREPARTION PLAN

Communities and local cottage subdivisions should have a wildfire "Preparation Plan" in the event a wildfire occurs near or within the community or subdivision zone.

Working with the municipality or local cottage association, the community should determine what steps the community or association should take if a wildfire occurs. Addressing the following issues in a response plan may save time, money, property and lives:

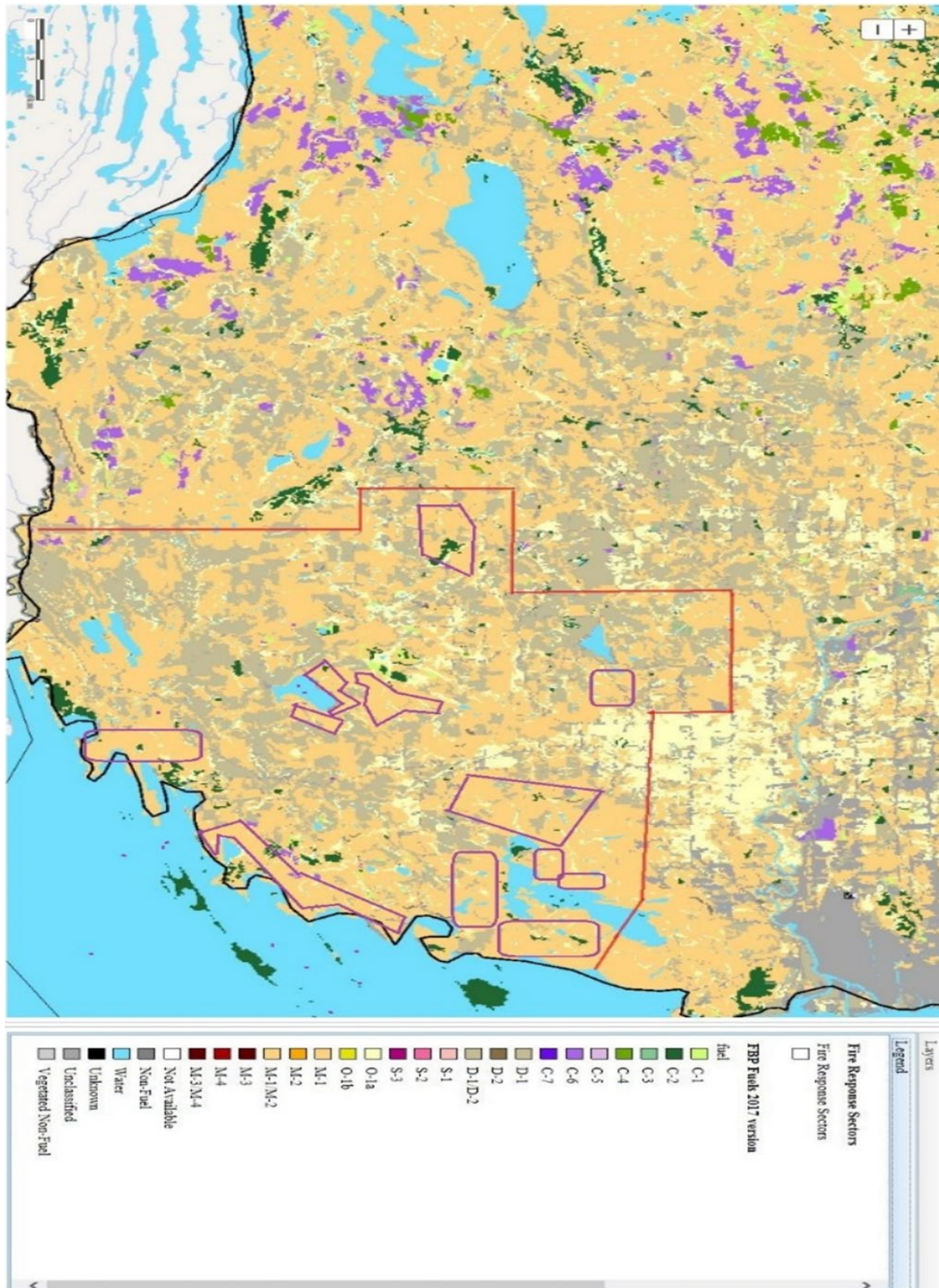
1. Emergency notification procedures
2. How local citizens may coordinate their efforts until the OMNR or fire department arrives on scene.
3. Factors in determining evacuation vs. shelter-in-place
4. How to accomplish evacuations
5. Pre-determine locations for Safe Zones

EARLY WARNING SYSTEMS

Currently, there is no process in place to notify residents when a fire is occurring in the township of Neebing.

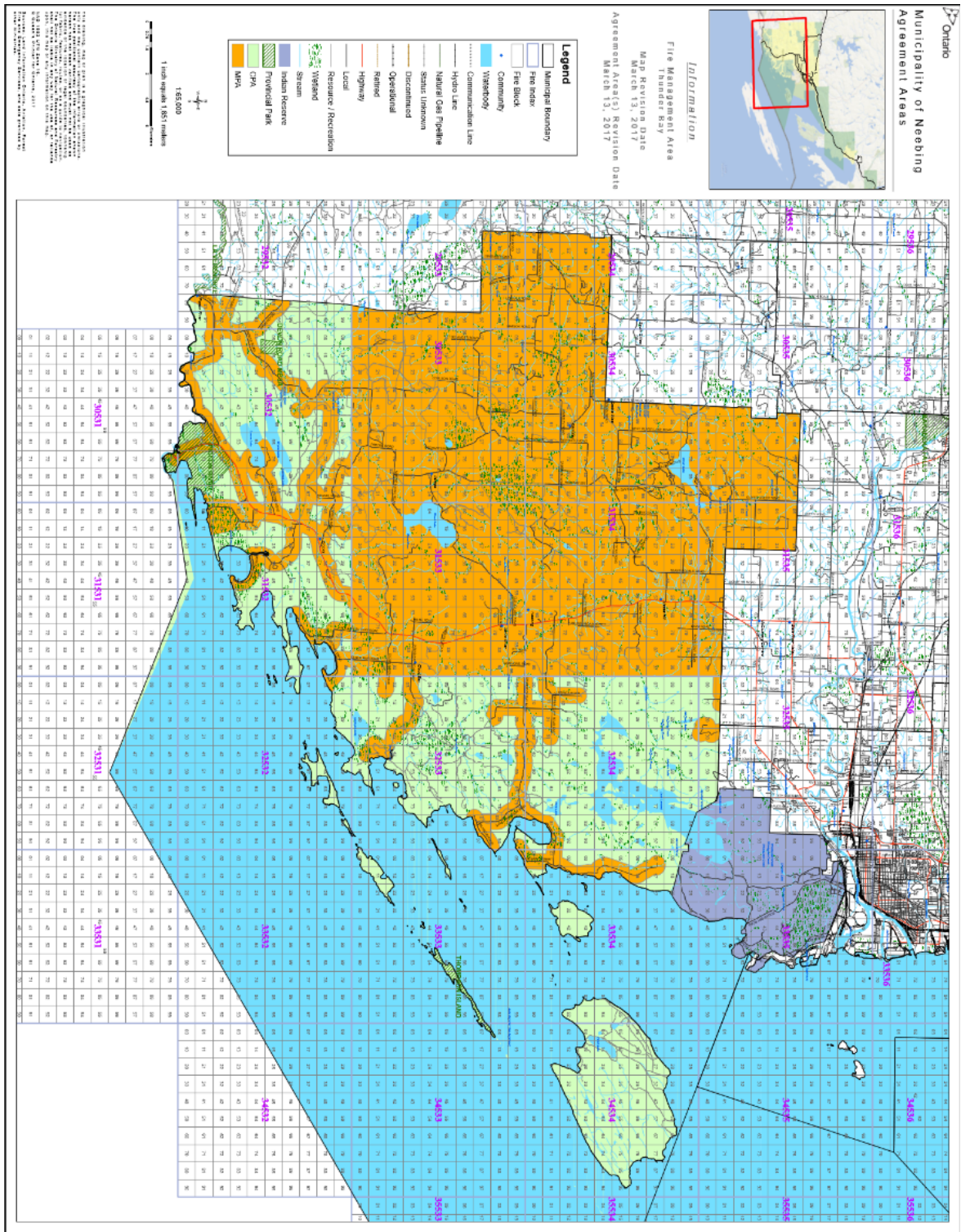
APPENDIX A

FIRE HAZARD RATING MAP



APPENDIX B

MUNICIPAL AGREEMENT MAP



ANNUAL WORK SCHEDULE

