2021-2031 NAGAGAMI FOREST MANAGEMENT PLAN

6.1 SUPPLEMENTARY DOCUMENTATION

HORNEPAYNE LUMBER
— CARING FOR OUR FOREST —

FIRST RESOURCE MANAGEMENT GROUP

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(a) Summary of the Historic Forest Condition

Historic Forest Condition

The historic condition of the Nagagami Forest gives a description of disturbance histories that were man-made and natural, as well as the condition that was known during the development of the plan. The knowledge of the historic forest condition is useful background information for forest management planning. This condition is just one part of the planning process that is used to develop the long-term management direction (LTMD) for the Nagagami Forest. The historic forest condition provides insight into the natural dynamics of the landscape and the influence that past forest management has on the current forest condition. It helps us to understand changes and predict and follow the natural trends that forest composition undergoes on this management unit. Previous forest management plans provide an effective means for the planning team to obtain historical information. Gathering reliable historical information that can be incorporated for use in the forest management planning process from sources other than past forest management plans is challenging, as the sources are difficult to access. The public is asked to contribute to the known historical background during the public consultation sessions. No new historical data have become available regarding the historical age distribution and non-tree flora for this plan. To date there have been little new historical data found regarding additional details for historical productivity, social and economic conditions, and historical forest diversity. The historical forest information for the Nagagami Forest, current to October 16, 2008 is described in the following sections.

Historical Use and Access of the Forest

Construction of the Algoma Central and Hudson Bay Railway, 1899 The construction of the Algoma Central and Hudson Bay Railway rail line coincided with the first major industrial scale exploitations of the timber resources in the Nagagami Forest. This rail line runs from Sault Ste Marie to Hearst, and crosses the Nagagami Forest through Hawkins and Irving Townships, intersecting with the CNR rail line at Oba. A small summer tent community was created at what is now referred to as the Langdon siding to serve as work base and supply sites during the rail line construction and remained there for a period after the rail line construction was completed. Small tie and lumber mills originated along the rail line right of way at the locations now known as the Oba and Langdon sidings within timber stands suitable for this use of timber. These operations supplied railway ties for the railroad and lumber for the construction of dwellings at Oba. All the oldest industrial scale man-created forest disturbances within Irving and Hawkins Townships originated from this rail line in the early 1900s.

Construction of the Northern Ontario Railway Line, 1911-1915

The construction of the Canadian Northern Railway (CNR) rail line is one of the more influential and important industrial scale exploitations of the timber resources from the Nagagami Forest. The construction of the line through the Nagagami Forest started between 1911 and 1912. It joined with the section of the same rail line being built eastwards from the Hillsport area

(mileage 45.5) in 1915. Small summer tent communities were created near or along the rail line to serve as work base and supply sites during the rail line construction and remained there for a period after the rail line construction was completed. The summer tent shelters that housed the residents of these communities evolved into lumber frame structures. The small communities later became sidings to service the rail traffic and have since been dismantled. Noteworthy names of these forgotten communities are Morrison River, Menzies, Oba, McDuff, Tondern, Penhurst, Becker, and Cree Lake. Numerous small tie and lumber mills sprang-up along the rail line right of way, within timber stands suitable for this use of timber. This was the beginning of the logging industry on the Nagagami Forest and marks the origins of some of the oldest man-created forest disturbances on the Nagagami Forest. Noteworthy small privately owned sawmills are as follows: Fred Menzies' sawmill at mileage 11.5 west of Hornepayne; the MacNeil and St. Onge sawmills, where Becker is now located. These operations supplied railway ties for the railroad, lumber for the immediate area, and created a series of man-made forest disturbances spider webbing from along the rail line within Nagagami, Lessard, Wicksteed, Haig, Farquhar, Woolrich, and Hawkins Townships.

Establishment of the Community of Hornepayne, 1916

Hornepayne was established in 1916 as Fitzback when the Canadian Northern Railway's transcontinental line was built through the area. It was renamed Hornepayne in 1920 for British financier Robert Montgomery Horne-Payne. Hornepayne became the focal point of the local rail industry and the surrounding siding and small sawmill communities in the area and served as a major service and supply center, maintenance and repair, crew center and bedroom community. As the population of Hornepayne grew, so did the demand for lumber for the construction of facilities for the accommodation of the growing population, and their services, equipment, and livestock. The demand for fuel wood also contributed to the demand on the timber resource from the Nagagami Forest. In fact, going back to 1932, in an effort to employ and help feed the general population during the depression, the town council was able to convince the CNR to convert the boilers in the shops to wood burning instead of oil or coal burning. This effort was initiated and run by the municipality until approximately 1939 and funded by the CNR. The railroad would pay the municipality for the fuel wood upon delivery, and the municipality would in-turn pay the piece workers for their time and the upkeep of their horses. The disturbances created for this make-work project occurred within no more than a 3-mile radius north of the CNR Roundhouse in Wicksteed Township, west of what is today the Ministry of Transportation complex. Man-made forest disturbances continued to grow concentrically from the focal point provided by the community of Hornepayne because of the demand for timber from 1916 through the first half of the century.

Inception of Olav Haavaldsrud Timber Company Ltd., 1953

In the late 1940s and early 1950s, the small sawmills that once operated along the sidings along the CN Rail line ceased to exist when the Ontario Government began to lease large parcels of

land to pulp and paper manufactures such as Marathon Corporation and Ontario Paper Company. Logging contracts were awarded by the pulp and paper mills to logging contractors on a volume basis (cords). Bucksaws and horses were used to extract the pulpwood from the forest stands in the winter, which meant that the many pieceworker employees had to work long hours to complete a harvest strip for the contractor. The summer months were spent peeling eight-foot pulp logs by hand to meet the specification required by the paper mill. Olav and Elna Haavaldsrud moved their family to Hornepayne in 1953 when they had an opportunity to purchase the existing sawmill on Mill Lake. In 1954, the Olav Haavaldsrud Timber Company Ltd. was incorporated and started to cut pulpwood for Ontario Paper Company, using some of the largest logs for their sawmill operation. The company has progressively expanded its business operation since 1953 to the present day (2011), from low-volume horse logging pulpwood piecework production, to high-volume pulpwood contracting with mechanical logging equipment and the operation of a small sawmill for the oversize logs, to milling all of the mechanically harvested timber into lumber and chips. The beginning and evolution of Olav Haavaldsrud Timber Company Ltd. marked the birth of largescale disturbances on the Nagagami Forest, with the purpose of obtaining wood products for the blooming pulp and paper and sawmill industries. Other modern-day logging contractors were also born because of the past need for pulp material. This includes Morin Logging, Frank Turk Ltd. and J.R. Poulin Ltd., Kenogami Lake Lumber Ltd. The Morin Logging was based at the McDuff CNR Rail Siding, which created a major logging disturbance within Woolrich and Farquhar Townships. The Frank Turk Ltd. and J.R. Poulin Ltd. were based in Oba, Ontario, which created the major logging disturbances in Hawkins and Roche Townships and Kenogami Lake Lumber Ltd. that created the major logging disturbances in Wicksteed and Lessard Townships *(Source: Norman Haavaldsrud, A Trip Down Memory Lane Hornepayne1928-1978).*

Construction of Highway 631 between 1956 and 1973

The link from Hornepayne north to the Highway 11 corridor was completed between 1956 and 1961. The link from Hornepayne south to the Highway 17 corridor was completed between 1963 and 1973. The Highway 631 corridor provided access to the north and south extremities of the Nagagami Forest. From this highway corridor there were several important strategic primary and branch roads built to provide access for the forest industry to the areas of the Forest west and east of the highway corridor. This includes the Hornepayne Creek, White Owl, North Larkin, and South Larkin Roads that were first built through the 1970s; the Kenogami Lake Lumber Road in the 1980s; the Breckenridge, Black Beaver and Beaton West Roads through the 1990s; and, the Marten Road (branch road) after the year 2000.

Government funding for the construction of primary and secondary roads originated with the inception of Forest Management Agreements (FMAs) after 1982 for the Nagagami Forest. This funding was instrumental for the access drive into the extremities of the Nagagami Forest. As a result, the large-scale industrial disturbances that are located east and west of the Highway 631 corridor were able to be created throughout the forest landscape instead of in the previous

historical concentric patterns of industrial disturbance immediately around the community of Hornepayne *(Source: Memory Lane Part Three Hornepayne 1928-2003).*

Construction of Hydro Line between 1962 and 1963

The hydro line links Manitouwadge and Hornepayne. The hydro line crosses Foch, Drew, Cholette, Lessard, Chelsea, and Wicksteed Townships. The construction of the hydro line corridor provided access from the community of Hornepayne and westwards through to the large bodies of water found in Chelsea and Cholette Townships. Numerous remote fishing camps were established because of this access. Once the camps were established the land routes to the camps were quickly abandoned for the fly-in option from the Government Lake sea plane base *(Source: A Trip Down Memory Lane Hornepayne 1928-1978).*

Historical Natural Disturbances

The Nagagami Forest lies on the heart of the Boreal Forest, which was evolved through a long process of natural disturbances. The Boreal Forest has evolved over the Holocene epoch, beginning some 10,000 years ago, and passed through several stages of forest ecosystem resulting to its current state, which is dominated by tree species that occur as pure or mixed species stands of generally even-aged character. Prior to human influences, the character and composition of these forest stands have been shaped by natural renewal processes, such as fire, insect infestation, diseases, and damage due to severe weather systems. Out of which two forms of natural disturbance, fire, and wind throw, have been accepted as major factors. Both disturbances have played significant roles in the natural succession within the forest landscape. In most areas within the Boreal Forest, fire has been the dominant factor in maintaining a typical even-aged structure in intolerant Boreal species. Obviously, the Nagagami Forest landscape is very much a result of large natural disturbances.

Fire

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Past Fire Disturbance and Cutover Sizes

It is generally accepted that fire was the most significant force in the Boreal Forest. Large fire produces species and age class diversity because of fire behaviour. Fires of different shape, sizes, and intensity lead to a patchwork of stands of different age class and species

composition. The intensity of forest fire depends on several factors such as topography, daily weather conditions, seasonal weather patterns and fuel type. The chance of the occurrence of

fire is mainly determined by lightning strikes that occur during a storm. The past fire history shows that fire is a major force to create the present pattern of the forest stands in the Nagagami Forest. However, there have been no major fires affecting the age class structure in recent times. The largest single 10-year age class is the 81-90 class, which corresponds to the last major fire. Smaller fires have periodically occurred disturbing relatively small areas of the forest.

Historical records show that two major fires occurred within Nagagami Forest during the twentieth century. One in 1922 burning through much of Foch, Nagagami and Lessard Townships between Hornepayne and Manitouwadge, and another in 1955, which took place in the vicinity of Moonlight Lake, and came to within 1.5 miles of the town of Hornepayne and burned 15,385 ha *(Source: A Trip Down Memory Lane Hornepayne 1928-1978).* Despite the historic fires, a few recent fires have also been recorded within the Nagagami Forest. The most recent fire was the Wawa #21 fire that burned a total of 5,600 hectares west of Kabinakagami Lake in Breckenbridge and Lizar Townships during June of 2003. Approximately 50% of the fire damaged timber was salvaged and renewal was completed in 2006. Limited fire disturbance information exists for the Nagagami Forest. The Centre for Northern Forest Ecosystem Research (CNFER) has recently researched natural disturbance patterns grouped by Hill's Site Regions for applying natural disturbance regimes in harvest planning. The CNFER research also provides a past fire disturbance history. The Nagagami Forest is in Hill's Site Region 3E. The analysis for Site Region 3E utilized data for fires between 10 and 260 hectares from Site Region 3E. Fires ranging in size from 261 to
10,000 hectares were taken from OFRI data (Perera and Bae) for fires that occurred between 1920 and 1950 in Site Region 3E. The trend in Site Region 3E closely follows the typical fire pattern
with most of the area affected by relatively few large fires (Table 1):

Table 1: Centre for Northern Forest Ecosystem Research Disturbance Pattern Research for Site Region 3E.

Size Class (ha)	Total # Fires	Total Area Burned (ha)	Annual Frequency	Annual Area Burned (ha)	Suggested % Disturb. Frequency	Suggested % Disturb. Area
10-130	46	1,996	3	111	27	1
131-260	16	3,085	1	171	10	2
261-520	52	19,257	2	642	19	7
521-1,040	50	36,608	2	1,220	18	13
1,041-2,500	41	69,303	1	2,310	15	24
2,501-5,000	24	79,486	1	2,650	9	28
5,001-10,000	10	72,942	0.3	2,431	4	25
Total	**239**	**282,677**	**10.3**	**9,535**	**102**	**100**

The 2006-2011 FMP followed the natural disturbances pattern required by *Forest Management Guide for Natural Disturbance Pattern Emulation (NDPEG)*, which required 25 snags per hectare and residual requirements for insular and peninsular residuals. Both the 2011-2021 FMP and

the 2021-2031 FMP is prepared following the *Stand and Site Guide*, which requires that at any point in a clearcut, 0.5 hectares of residual must be retained within a 50-hectare circle of that point, and 25 hectares of residual must be maintained for every 500-hectare circle. In addition, according to which a minimum of one 0.5-hectare undisturbed patch of standing, live mature trees must be left for every 50 hectares of the highlighted residual zone within that harvest block.

Insect

The present forest structure of Nagagami Forest is also a result of periodic infestation by number of different insects and pests. All the major species of defoliating insects common to the Boreal Forest have been seen on the Nagagami Forest. Major infestations can lead to significant areas of tree mortality. Insect infestations are often directed towards specific host trees such as balsam fir in the case of spruce budworm and can result in changes in the species composition of the forest over time. This effect can be seen in Nagagami Forest. The new inventory result, for example, shows that the areas that were made up of young balsam fir before the budworm outbreak are regenerating to spruce and poplar. Areas where the balsam fir was older at the time of the outbreak are mainly regenerating to poplar. In some cases, a tree species may be eliminated from a forest stand. In recent times, the spruce budworm epidemic of the late 1970's and early 1980's has resulted in severe damage to the balsam fir component and significant damage to the white spruce component of the forest. This has virtually eliminated all the semi-mature and mature balsam fir in the Nagagami Forest from the heavy outbreaks in the early and mid 1980's. Merchantable volume losses of up to 90% have occurred in balsam fir, especially in the mature to over-mature portions of the Nagagami Forest. Young, regenerating balsam fir is continuing to form a major component of the lower and middle canopy of many forest stands, especially in the mixed woods and black spruce lowlands. Since the outbreak of the spruce budworm in the 1980s, much of the balsam fir has fallen over and created openings for the poplar to regenerate. Only small, scattered pockets of spruce budworm now occur. These areas will be closely monitored, and control strategies initiated when required. The new inventory shows the effects that the spruce budworm has had on the current working group areas. Areas that were made up of young balsam fir before the budworm outbreak are regenerating to spruce and poplar. Areas where the balsam fir was older at the time of the outbreak are mainly regenerating to poplar. The budworm has caused much of the balsam fir in the forest to become unmerchantable for any product except for pulp. Since the outbreak of the spruce budworm in the 1980s, much of the balsam fir has fallen over and created openings for the poplar to regenerate. Another contributor to the increase in poplar is harvesting that has taken place since the 1974 inventory photos were taken. Areas of

mixed wood and pure pine, which have been harvested and left to regenerate naturally, will often convert to a poplar-working group.

One other natural disturbance that has occurred during the late 1990s is an outbreak of forest tent caterpillar. This outbreak has persisted to the extent that annual growth over a three-year

period has been reduced and some mortality has occurred in aspen stands. The recent forest tent caterpillar mapping by the MNR and federal government did not identify any significant dead areas that needed to be reflected in the planning inventory updates. However, one very small area was identified near Oba.

Mid-rotational stands of jack pine have also begun to exhibit merchantable volume losses on the Nagagami Forest. The major losses seem to be caused by the White Spotted Sawyer beetle, which in its adult phase feeds on the cambial layer and needles in the fine branches. Repeated attacks on the tree by subsequent generations of these insects, coupled with the stem boring by the larval stages create avenues for the entry of fungal spores into the trees. This factor coupled with the severe summer drought conditions, which have occurred in recent years has caused rot, red staining, and mortality within the affected stands.

Weather

The weather condition was another natural disturbance to impact the Nagagami Forest. Heavy wind-throws cause small patches of disturbance by breaking treetops resulting in tree mortality or rendering them susceptible to insects and disease. The winds associated with powerful summer storms can also impact the forest. Periodic thunderstorms often blow down trees or in some cases cause trees to be snapped off midway up the stem. This type of event creates small patches of disturbance often less than a hectare in size and such events can be expected to occur at a few locations each year. Black spruce on peat lands grows at a reduced rate compared to the more productive well-drained sites. Often black spruce will continue to grow to 150 years and longer. As individual trees succumb to mortality or wind-throw, small openings are created. Natural renewal often takes place in black spruce by means of layering. When the lower limbs of healthy black spruce embed in the moist sphagnum moss layer, new root growth is initiated resulting in a series of connected layering. Black spruce also can survive for years beneath a canopy. As natural openings develop, the seedlings in the under story are released. Over time, the structure of this black spruce dominated peat land site becomes uneven-aged and uneven-sized. One of the major natural disturbances related to weather condition occurred in Nagagami Forest during 1980s and early 1990s. According to Nagagami FMP 1992-2012 the major event of wind damage took place in Larkin Township during 1982 to 1991. A destructive effect of the wind occurred in the Haken Lake and Larkin Lake areas within mid aged jack pine stands along the Haken Lake Road. Damage to trees occurred because of treetops snapping-off through ice storms, which encouraged woodborers to move into the wind and ice damaged

trees and spread from these trees into the undamaged trees in the immediate vicinity. Application to harvest these insect infested areas occurred in the way of an FMP amendment. Harvest occurred, after which the areas were regenerated.

Another weather caused natural disturbance was a 1987 tornado, which occurred in the Hornepayne area. The tornado tracked through Hornepayne and the Nagagami Forest and

caused extensive damage in its path. A track is apparent through Lessard Wicksteed, Haig and Woolrich Townships. Mature standing timber was flattened because of this wind damage *(Source: Times News, July 23rd, 1987 edition, Jerry Smith, Boris Michelussi).*

Historic Forest Composition Comparison

The knowledge of historic forest composition of the forest is of importance in determining the best strategies for managing the current forest. There is a lack of a comprehensive inventory of the Nagagami Forest prior to 1900. However, a short report on pre-industrial forest composition of the Nagagami Forest by Pinto *et al.*, 2007 (*Pinto, F., S. Romaniuk and M. Ferguson (2007), Preindustrial forest composition of the Nagagami Forest)* has provided general information on the forest composition of the Nagagami Forest since 1907. The pre-settlement forest composition of the Nagagami Forest was reconstructed from Ontario Crown Land Survey Notes for the period from 1907 to 1923. Forest composition was documented through historical land survey data that was collected along township boundary lines. Pinto *et al*, 2007 confirmed that this information was an acceptable representation of the overall forest composition within the townships. The Pinto report (Pinto *et al,* 2007) provides some important insight into the forest from a time when the level of forest utilization was much lower than today. There was no evidence in the Ontario survey notes to indicate that logging was encountered during these surveys in the Nagagami Forest before 1923.

Table 2 summarizes and compares the historic forest condition based on the Pinto *et al* (2007) OLS Survey to the 2006 FRI data. In the table, each value is expressed as the percent length of each species and represents the mean for all township boundary lines. An increase or decrease in dominance is determined by an increase in FRI ranked abundance importance value compared to the OLS ranked abundance importance value. An increase in importance value of ranked abundance of a tree species suggests that some tree species have become more dominant and are found in more stands today. Conversely, a decrease in importance value of ranked abundance of a tree species suggests that other tree species have become less dominant or occurs less frequently in stands today. The results show that balsam fir, cedar, larch, poplar, and spruce are more dominant in 2006 than before. Whereas birch and jack pine are significantly less dominant than before (Pinto *et al,* 2007).

Table 2: Comparison of species abundance (based on ranked abundance) between historical Land Survey (OLS) data and the 2006 FRI data.

Species or Species Group	% OLS (1907-1923)	% FRI (2006)	Change in Species Dominance
Alder Species *N*	3.63	N/A	
Balsam Fir	4.95	6.59	More dominant
Total Birch	10.86	8.61*	Less frequent
Cedar	3.99	4.43	More dominant
Larch	3.51	5.62*	More dominant
Jack Pine	16.2	10.93**	Less frequent
Poplar	15.11	22.71**	More dominant
Total Pine	---	0.25	More dominant
Total Spruce	39.22	40.85	More dominant
Other *N*	0.43	---	---

** significance at 95% confidence interval between OLS and FRI township boundaries.*
*** significance at 99% confidence interval between OLS and FRI township boundaries.*
N species not analyzed.

The information described above provides a general trend of the species or species groups in the Nagagami Forest from 1907-1923 to 2006, recognizing that there are gaps in information for some forest units.

In reviewing forest resource inventory (FRI) data, in which the last complete inventory took place in 1993 based on 1990 aerial photography, further trends and interpretations regarding Nagagami's historical forest composition has been made. Tabular and graphical information from the 2006 FMP provides some important insight into the historical composition of the forest. It is important to point out that discrepancies do exist between each data set. The make-up of forest units has evolved over time as has the methods in which forest inventory is derived. The 1974 FRI inventory data was summarized into new forest units to provide a comparison to the 2001 and 2006 forest condition and to provide an indication of the historic forest condition. The 1974 condition was based on the digitized FRI database, while the 2001 and 2006 conditions were taken using very similar if not equal forest units in drawing comparisons. The adoption of the enhanced Forest Resource Inventory (eFRI) for the 2021 plan has also presented an instance where another change in Forest Unit definition has occurred. Table 1 provides an overview of the previous Forest Units and their relationship with the 2021 FMP Forest Units even if the queries and inventories are not all completely compatible between each other.

Table 1 Previous Plan Forest Unit

2006 FMP	**2011 FMP**	**2021 FMP**
	BOG	BOG
	PWR	PWR
SB1	SB1	SB1
SB3	SB3	
PJ1	PJ1	PJ1
LC1	LC1	LC1
PJ2	PJ2	PJ2
SP1	SP1	SP1
SF1	SF1	SF1
PO1	PO1	P01
PO3	PO3	
BW1	BW1	BW1
MW1	MW1	MW1
MW2	MW2	MW2

This historical management unit information is useful in understanding trends and changes in forest composition, and past use of forest resources from the management unit.

(b) Analysis Package and LTMD Development

The Analysis Package is located in the main directory of the electronic FMP:
"MU390_2021_FMP_TXT_AnPack"

(c) First Nation and Métis Background Information Reports

If agreed to by the First Nation or Métis community, the First Nation and Métis Background Information Report will be included in the FMP as follows. The FMP text will summarize the use of the lands, and natural resources on the management unit by First Nation and Métis communities and forest management-related opportunities, concerns, and issues for those communities. The First Nation and Métis Background Information Report (Part A, Section 3.6.1) will be included in the supplementary documentation of the FMP. The text will reference the section of the supplementary documentation that contains the complete report (FMPM, 2020, B-11).

(d) Summary of First Nation and Métis Involvement

For those First Nation and Métis communities that agree, the Summary of First Nation and Métis Involvement will be included in the supplementary documentation of the draft FMP, and an updated summary will be included in the supplementary documentation of the approved FMP (FMPM, 2020, A-116).

(e) The Social and Economic Description and Demographic Profiles

2016 Hornepayne

3557096

Ontario

Population 980

Male	**525**	53.6%
Female	**455**	46.4%

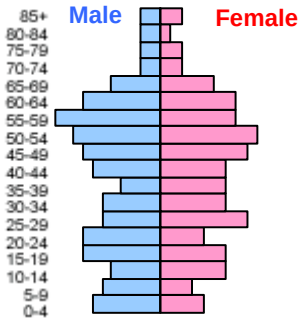
change in past 5 years **-7.14%**

Avg Income: **$55,675**

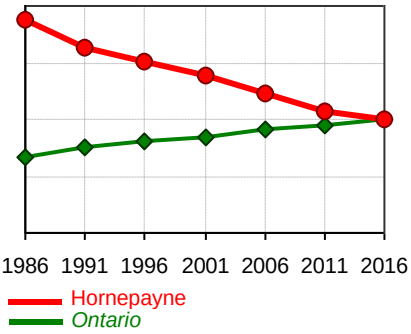
Avg Male Income: **$72,831**

Avg Female Income: **$38,098**

Distribution



Trend



Households 405

Avg Income: **$108,279**

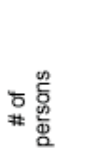
rate of Low Income **0.0%**

avg persons/ household: **2.4**

Household Income

$000's	
over 100	32.8%
80 to 100	42.6%
60 to 80	9.0%
40 to 60	7.4%
20 to 40	4.1%
under 20	4.1%

Household Size



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 514

Avg Value: **$89,662**

Avg Monthly Rent: **$810**

Housing Affordability Index: **0.83**

Tenure

owned	**84.1%**
rented	**15.9%**
band housing	**0.0%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%



Education

Highest Level

University:	**7.4%**
College:	**19.1%**
Trade:	**7.4%**
Secondary:	**34.6%**
Primary:	**31.5%**

Language

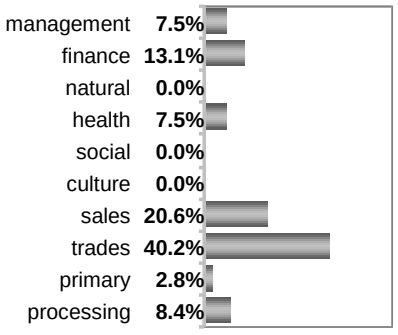
English:	**77.2%**
French:	**1.6%**
Both:	**20.7%**
Neither:	**0.5%**

Labour Force 565

Labour Force:

Male:	**54.4%**
Female:	**45.6%**
Participation Rate:	**70.6%**
Employment Rate:	**81.3%**
Wage and Salary:	**94.6%**
Self-Employed:	**5.4%**
Unpaid:	**0.0%**

Occupation



Community Diversity

Migration

1 year:

non-movers	**85.3%**
movers	**14.7%**

from where

other country	**0.0%**
other province	**0.0%**
within province	**37.0%**
locally	**63.0%**

5 year:

non-movers	**67.2%**
movers	**32.8%**

from where

other country	**0.0%**
other province	**0.0%**
within province	**43.3%**
locally	**56.7%**

Canadian Born	**98.4%**
Foreign Born	**1.6%**

When immigrated

prior to 1981	**100.0%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**0.0%**



Cdn citizen	**99.0%**
Aboriginal	**9.8%**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016

White River
3557091

Ontario

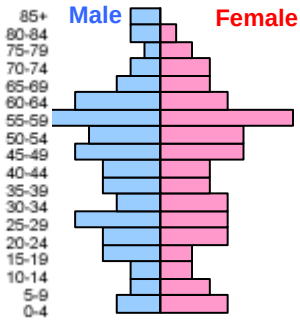
Population 645

Male	**340**	52.7%
Female	**305**	47.3%

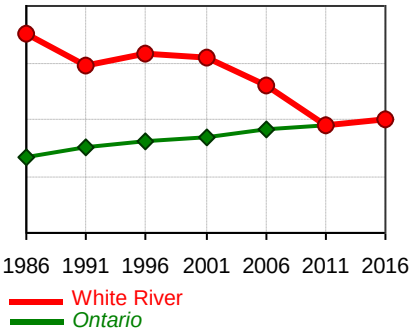
change in past 5 years **5.89%**

Avg Income: **$45,800**
Avg Male Income: **$55,085**
Avg Female Income: **$33,524**

Distribution



Trend



Households 300

Avg Income: **$85,244**
rate of Low Income **0.0%**
avg persons/ household: **2.2**

Household Income

$000's	
over 100	25.0%
80 to 100	32.5%
60 to 80	13.8%
40 to 60	13.8%
20 to 40	8.8%
under 20	6.3%

Household Size



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 411

Avg Value: **$84,056**
Avg Monthly Rent: **$710**
Housing Affordability Index: **0.99**

Tenure

owned	**75.0%**
rented	**25.0%**
band housing	**0.0%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**7.1%**
College:	**22.1%**
Trade:	**21.2%**
Secondary:	**25.7%**
Primary:	**23.9%**

Language

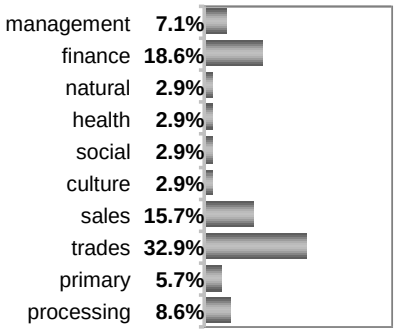
English:	**81.4%**
French:	**0.8%**
Both:	**17.8%**
Neither:	**0.0%**

Labour Force 350

Labour Force:

Male:	**58.6%**
Female:	**41.4%**
Participation Rate:	**62.5%**
Employment Rate:	**97.1%**
Wage and Salary:	**97.1%**
Self-Employed:	**2.9%**
Unpaid:	**0.0%**

Occupation



Community Diversity

Migration

1 year:

non-movers	**84.2%**
movers	**15.8%**

from where

other country	**9.1%**
other province	**13.6%**
within province	**40.9%**
locally	**36.4%**

5 year:

non-movers	**65.9%**
movers	**34.1%**

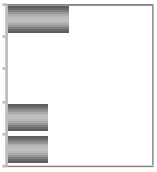
from where

other country	**4.7%**
other province	**7.0%**
within province	**58.1%**
locally	**30.2%**

Canadian Born	**95.5%**
Foreign Born	**4.5%**

When immigrated

prior to 1981	**42.9%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**28.6%**
2011 to 2016	**28.6%**



Cdn citizen	**97.7%**
Aboriginal	**25.8**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016 Dubreuilville

3557079

Ontario

Population 613

Male	**332**	54.1%
Female	**281**	45.9%

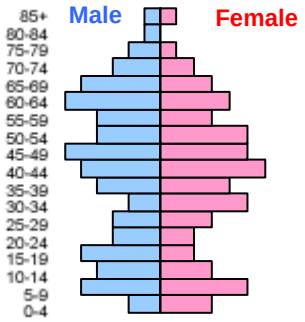
change in past 5 years **-3.59%**

Avg Income: **$47,443**

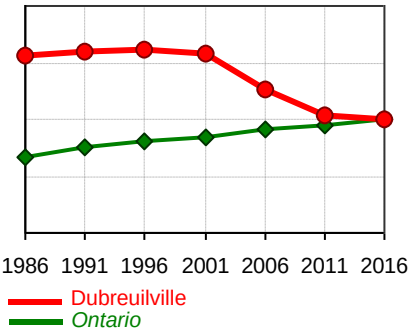
Avg Male Income: **$57,316**

Avg Female Income: **$34,690**

Distribution



Trend



Households 235

Avg Income: **$91,230**

rate of Low Income **0.0%**

avg persons/ household: **2.4**

Household Income

$000's

over 100	28.8%
80 to 100	39.4%
60 to 80	6.1%
40 to 60	13.6%
20 to 40	7.6%
under 20	4.5%

Household Size

of persons

1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 310

Avg Value: **$86,260**

Avg Monthly Rent: **$695**

Housing Affordability Index: **0.95**

Tenure

owned	83.0%
rented	17.0%
band housing	0.0%

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	6.6%
College:	27.5%
Trade:	16.5%
Secondary:	15.4%
Primary:	34.1%

Language

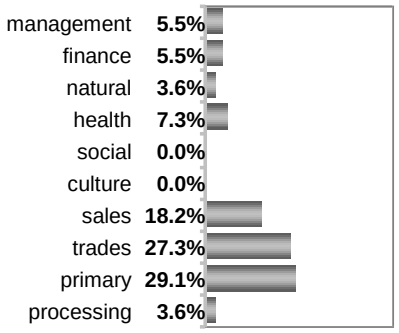
English:	8.1%
French:	24.4%
Both:	67.5%
Neither:	0.0%

Labour Force 300

Labour Force:

Male:	57.4%
Female:	42.6%
Participation Rate:	65.2%
Employment Rate:	91.7%
Wage and Salary:	94.9%
Self-Employed:	5.1%
Unpaid:	0.0%

Occupation



Community Diversity

Migration

1 year:

non-movers	90.2%
movers	9.8%

from where

other country	0.0%
other province	0.0%
within province	0.0%
locally	100.0%

5 year:

non-movers	76.9%
movers	23.1%

from where

other country	0.0%
other province	7.7%
within province	42.3%
locally	50.0%

Canadian Born	100.0%
Foreign Born	0.0%

When immigrated

prior to 1981	0.0%
1981 to 1990	0.0%
1991 to 2000	0.0%
2001 to 2011	0.0%
2011 to 2016	0.0%

Cdn citizen	100.0
Aboriginal	5.6%

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016 Terrace Bay

3558054

Ontario

Population 1,611

Male	**811**	50.3%
Female	**800**	49.7%

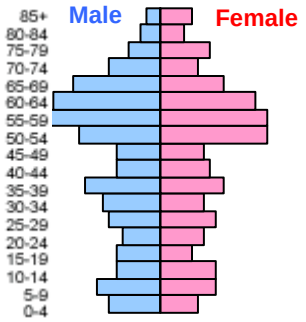
change in past 5 years **8.69%**

Avg Income: **$49,502**

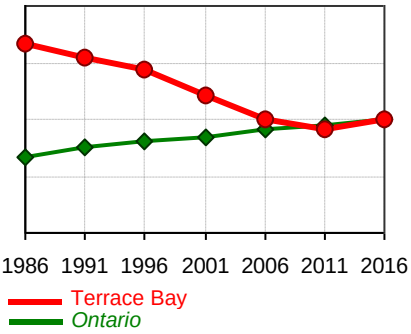
Avg Male Income: **$59,451**

Avg Female Income: **$39,068**

Distribution



Trend



Households 740

Avg Income: **$88,290**

rate of Low Income **0.0%**

avg persons/ household: **2.1**

Household Income

$000's

over 100	24.1%
80 to 100	34.9%
60 to 80	13.3%
40 to 60	13.3%
20 to 40	10.8%
under 20	3.6%

Household Size

of persons



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 821

Avg Value: **$94,112**

Avg Monthly Rent: **$707**

Housing Affordability Index: **1.07**

Tenure

owned	**82.4%**
rented	**17.6%**
band housing	**0.0%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**14.8%**
College:	**29.2%**
Trade:	**12.5%**
Secondary:	**28.4%**
Primary:	**15.1%**

Language

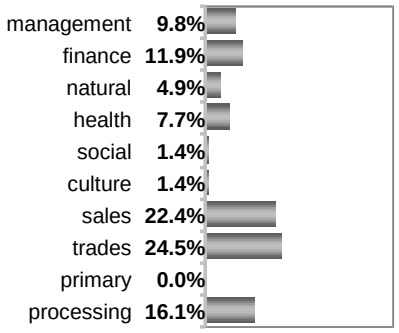
English:	**87.7%**
French:	**0.0%**
Both:	**11.6%**
Neither:	**0.6%**

Labour Force 825

Labour Force:

Male:	**49.1%**
Female:	**50.9%**
Participation Rate:	**61.1%**
Employment Rate:	**89.8%**
Wage and Salary:	**92.8%**
Self-Employed:	**6.0%**
Unpaid:	**1.2%**

Occupation



Community Diversity

Migration

1 year:

non-movers	**87.0%**
movers	**13.0%**

from where

other country	**0.0%**
other province	**17.1%**
within province	**58.5%**
locally	**24.4%**

5 year:

non-movers	**67.5%**
movers	**32.5%**

from where

other country	**10.9%**
other province	**9.9%**
within province	**50.5%**
locally	**28.7%**

Canadian Born	**92.8%**
Foreign Born	**7.2%**

When immigrated

prior to 1981	**65.2%**
1981 to 1990	**8.7%**
1991 to 2000	**0.0%**
2001 to 2011	**26.1%**
2011 to 2016	**0.0%**



Cdn citizen	**95.3%**
Aboriginal	**8.8%**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016 Schreiber

3558051

Ontario

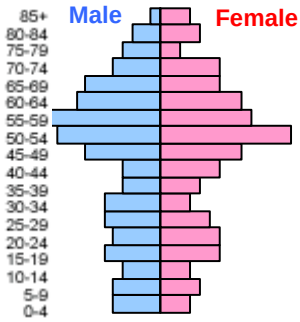
Population 1,059

Male	**554**	52.4%
Female	**505**	47.6%

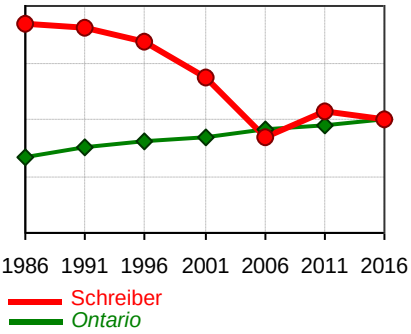
change in past 5 years **-6.33%**

Avg Income:	**$43,231**
Avg Male Income:	**$56,257**
Avg Female Income:	**$29,892**

Distribution



Trend



Households 510

Avg Income:	**$79,158**
rate of Low Income	**0.0%**
avg persons/ household:	**2.1**

Household Income

$000's

over 100	23.2%
80 to 100	33.6%
60 to 80	11.2%
40 to 60	12.8%
20 to 40	12.0%
under 20	7.2%

Household Size

of persons

1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 628

Avg Value:	**$88,732**
Avg Monthly Rent:	**$603**
Housing Affordability Index:	**1.12**

Tenure

owned	**80.6%**
rented	**19.4%**
band housing	**0.0%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**12.2%**
College:	**22.2%**
Trade:	**15.3%**
Secondary:	**29.6%**
Primary:	**20.6%**

Language

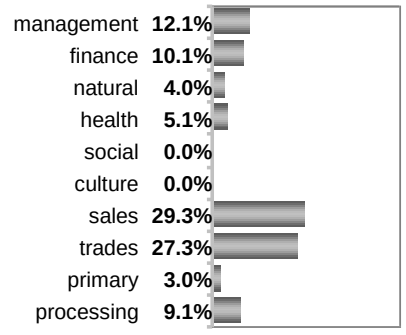
English:	**93.4%**
French:	**0.0%**
Both:	**6.6%**
Neither:	**0.0%**

Labour Force 575

Labour Force:

Male:	**52.6%**
Female:	**47.4%**
Participation Rate:	**60.5%**
Employment Rate:	**90.4%**
Wage and Salary:	**93.9%**
Self-Employed:	**6.1%**
Unpaid:	**0.0%**

Occupation



Community Diversity

Migration

1 year:

non-movers	**91.4%**
movers	**8.6%**

from where

other country	**0.0%**
other province	**15.8%**
within province	**21.1%**
locally	**63.2%**

5 year:

non-movers	**71.5%**
movers	**28.5%**

from where

other country	**0.0%**
other province	**18.6%**
within province	**39.0%**
locally	**42.4%**

Canadian Born	**92.4%**
Foreign Born	**7.6%**

When immigrated

prior to 1981	**77.8%**
1981 to 1990	**11.1%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**11.1%**



Cdn citizen	**98.2%**
Aboriginal	**7.6%**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016

Hearst
3556076

Ontario

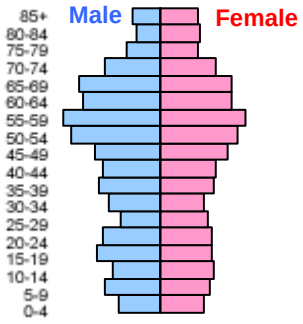
Population 5,070

Male	**2,478**	48.9%
Female	**2,592**	51.1%

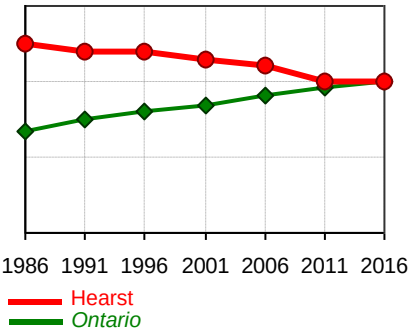
change in past 5 years **-0.39%**

Avg Income: **$44,617**
Avg Male Income: **$53,214**
Avg Female Income: **$36,228**

Distribution



Trend



Households 2,375

Avg Income: **$78,759**
rate of Low Income **0.0%**
avg persons/ household: **2.1**

Household Income

$000's	
over 100	22.4%
80 to 100	30.1%
60 to 80	10.5%
40 to 60	11.5%
20 to 40	15.2%
under 20	10.2%

Household Size



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 2,466

Avg Value: **$176,421**
Avg Monthly Rent: **$662**
Housing Affordability Index: **2.24**

Tenure

owned	**58.2%**
rented	**41.8%**
band housing	**0.0%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%



Education

Highest Level

University:	**15.3%**
College:	**23.2%**
Trade:	**10.0%**
Secondary:	**22.9%**
Primary:	**28.5%**

Language

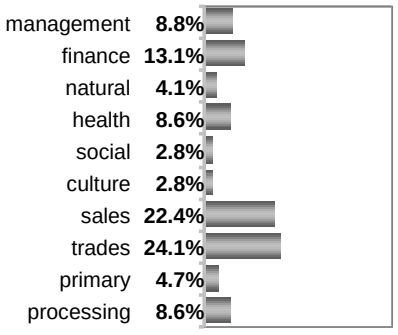
English:	**6.2%**
French:	**23.3%**
Both:	**70.5%**
Neither:	**0.0%**

Labour Force 2,610

Labour Force:

Male:	**52.7%**
Female:	**47.3%**
Participation Rate:	**61.6%**
Employment Rate:	**94.8%**
Wage and Salary:	**88.5%**
Self-Employed:	**10.6%**
Unpaid:	**1.0%**

Occupation



Community Diversity

Migration

1 year: **non-movers** **87.6%**
movers **12.4%**

from where

other country	1.6%
other province	4.9%
within province	24.4%
locally	69.1%

5 year: **non-movers** **66.7%**
movers **33.3%**

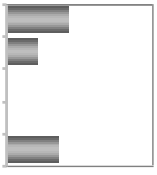
from where

other country	2.8%
other province	5.0%
within province	19.1%
locally	73.0%

Canadian Born **98.5%**
Foreign Born **1.5%**

When immigrated

prior to 1981	**42.9%**
1981 to 1990	**21.4%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**35.7%**



Cdn citizen **99.3%**
Aboriginal **7.0%**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016

Wawa
3557076

Ontario

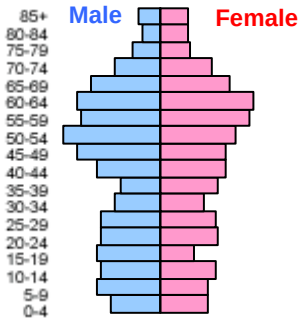
Population 2,905

Male	**1,465**	50.4%
Female	**1,440**	49.6%

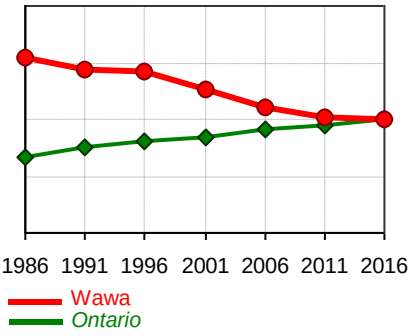
change in past 5 years **-2.41%**

Avg Income: **$43,348**
Avg Male Income: **$49,524**
Avg Female Income: **$37,269**

Distribution



Trend



Households 1,275

Avg Income: **$81,422**
rate of Low Income **0.0%**
avg persons/ household: **2.2**

Household Income

$000's

over 100	25.5%
80 to 100	31.9%
60 to 80	9.3%
40 to 60	11.9%
20 to 40	13.6%
under 20	7.8%

Household Size

of persons

1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 1,451

Avg Value: **$117,093**
Avg Monthly Rent: **$711**
Housing Affordability Index: **1.44**

Tenure

owned	72.3%
rented	27.7%
band housing	0.0%

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	12.9%
College:	21.9%
Trade:	11.7%
Secondary:	29.9%
Primary:	23.6%

Language

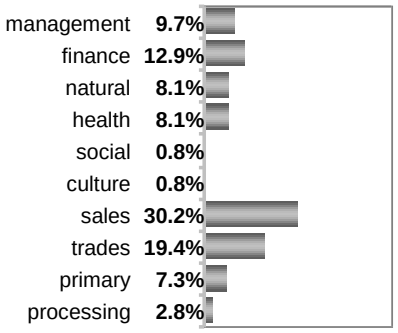
English:	67.3%
French:	1.2%
Both:	31.3%
Neither:	0.2%

Labour Force 1,510

Labour Force:

Male:	51.3%
Female:	48.7%
Participation Rate:	61.9%
Employment Rate:	93.7%
Wage and Salary:	91.1%
Self-Employed:	7.3%
Unpaid:	1.7%

Occupation



Community Diversity

Migration

1 year:

non-movers	90.5%
movers	9.5%

from where

other country	3.8%
other province	0.0%
within province	37.7%
locally	58.5%

5 year:

non-movers	70.4%
movers	29.6%

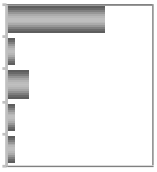
from where

other country	1.2%
other province	2.5%
within province	47.9%
locally	48.5%

Canadian Born	**94.4%**
Foreign Born	**5.6%**

When immigrated

prior to 1981	66.7%
1981 to 1990	6.1%
1991 to 2000	15.2%
2001 to 2011	6.1%
2011 to 2016	6.1%



Cdn citizen	**98.8%**
Aboriginal	**13.1**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016

Duck Lake 76B

3552054

Ontario

Population 85

Male	**40**	47.1%
Female	**45**	52.9%

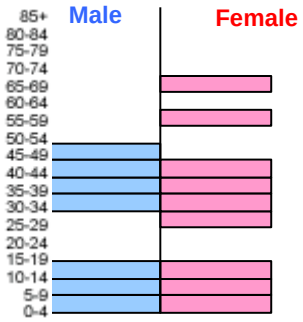
change in past 5 years **1.18%**

Avg Income:

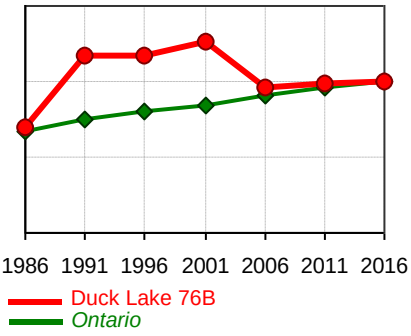
Avg Male Income:

Avg Female Income:

Distribution



Trend



Households 35

Avg Income:

rate of Low Income 0.0%

avg persons/ household: 2.4

Household Income

$000's

over 100	0.0%
80 to 100	0.0%
60 to 80	0.0%
40 to 60	0.0%
20 to 40	0.0%
under 20	0.0%

Household Size

of persons

1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 38

Avg Value: $0

Avg Monthly Rent: $0

Housing Affordability Index: 0.00

Tenure

owned	**28.6%**
rented	**28.6%**
band housing	**42.9%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**0.0%**
College:	**16.7%**
Trade:	**0.0%**
Secondary:	**16.7%**
Primary:	**66.7%**

Language

English:	**88.9%**
French:	**0.0%**
Both:	**11.1%**
Neither:	**0.0%**

Labour Force 30

Labour Force:

Male:	**50.0%**
Female:	**50.0%**

Participation Rate: 50.0%

Employment Rate: 100.0%

Wage and Salary:	**100.0%**
Self-Employed:	**0.0%**
Unpaid:	**0.0%**

Occupation

management	0.0%
finance	50.0%
natural	0.0%
health	0.0%
social	0.0%
culture	0.0%
sales	0.0%
trades	50.0%
primary	0.0%
processing	0.0%

Community Diversity

Migration

1 year:

non-movers	**100.0%**
movers	**0.0%**

from where

other country	0.0%
other province	0.0%
within province	0.0%
locally	0.0%

5 year:

non-movers	**81.3%**
movers	**18.8%**

from where

other country	0.0%
other province	0.0%
within province	0.0%
locally	100.0%

Canadian Born	**0.0%**
Foreign Born	**0.0%**

When immigrated

prior to 1981	**0.0%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**0.0%**

Cdn citizen	**0.0%**
Aboriginal	**89.5**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016

Pic River 50
3558062

Ontario

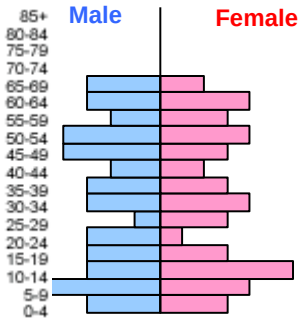
Population 443

Male	**214**	48.3%
Female	**229**	51.7%

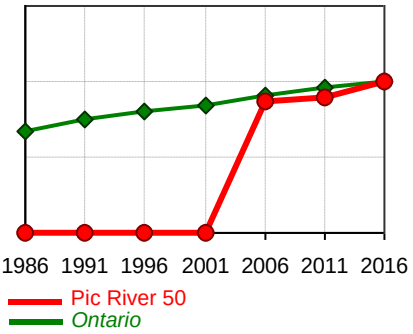
change in past 5 years **10.84%**

Avg Income:	**$35,253**
Avg Male Income:	**$42,608**
Avg Female Income:	**$28,401**

Distribution



Trend



Households 165

Avg Income:	**$66,047**
rate of Low Income	**0.0%**
avg persons/ household:	**2.7**

Household Income

$000's

over 100	20.0%
80 to 100	30.0%
60 to 80	7.5%
40 to 60	10.0%
20 to 40	12.5%
under 20	20.0%

Household Size

of persons



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 177

Avg Value:	**$0**
Avg Monthly Rent:	**$0**
Housing Affordability Index:	**0.00**

Tenure

owned	**50.0%**
rented	**5.9%**
band housing	**44.1%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**4.7%**
College:	**35.9%**
Trade:	**7.8%**
Secondary:	**20.3%**
Primary:	**31.3%**

Language

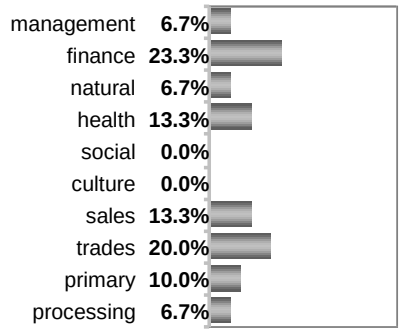
English:	**98.9%**
French:	**0.0%**
Both:	**1.1%**
Neither:	**0.0%**

Labour Force 185

Labour Force:

Male:	**48.6%**
Female:	**51.4%**
Participation Rate:	**56.9%**
Employment Rate:	**84.2%**
Wage and Salary:	**87.2%**
Self-Employed:	**5.1%**
Unpaid:	**7.7%**

Occupation



Community Diversity

Migration

1 year:	**non-movers**	**90.8%**
	movers	**9.2%**
from where	other country	**0.0%**
	other province	**0.0%**
	within province	**100.0%**
	locally	**0.0%**
5 year:	**non-movers**	**81.0%**
	movers	**19.0%**
from where	other country	**0.0%**
	other province	**12.5%**
	within province	**62.5%**
	locally	**25.0%**

Canadian Born	**0.0%**
Foreign Born	**0.0%**

When immigrated

prior to 1981	**0.0%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**0.0%**

Cdn citizen	**0.0%**
Aboriginal	**94.3**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016 Constance Lake 92

3556095

Ontario

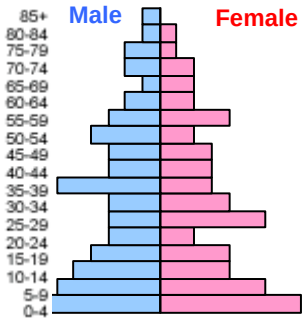
Population 590

Male	**295**	50.0%
Female	**295**	50.0%

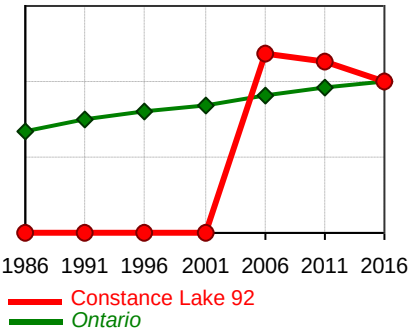
change in past 5 years **-13.56%**

Avg Income:	**$23,718**
Avg Male Income:	**$23,986**
Avg Female Income:	**$23,452**

Distribution



Trend



Households 190

Avg Income:	**$47,683**
rate of Low Income	**0.0%**
avg persons/ household:	**3.1**

Household Income

$000's

over 100	7.3%
80 to 100	14.6%
60 to 80	12.2%
40 to 60	19.5%
20 to 40	22.0%
under 20	24.4%

Household Size

of persons

1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 214

Avg Value:	**$0**
Avg Monthly Rent:	**$0**
Housing Affordability Index:	**0.00**

Tenure

owned	**7.9%**
rented	**34.2%**
band housing	**57.9%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**4.9%**
College:	**9.9%**
Trade:	**11.1%**
Secondary:	**12.3%**
Primary:	**61.7%**

Language

English:	**99.2%**
French:	**0.0%**
Both:	**0.8%**
Neither:	**0.0%**

Labour Force 195

Labour Force:

Male:	**57.9%**
Female:	**42.1%**
Participation Rate:	**48.1%**
Employment Rate:	**69.2%**
Wage and Salary:	**76.9%**
Self-Employed:	**0.0%**
Unpaid:	**23.1%**

Occupation

management	0.0%
finance	23.8%
natural	0.0%
health	0.0%
social	0.0%
culture	0.0%
sales	19.0%
trades	23.8%
primary	0.0%
processing	33.3%

Community Diversity

Migration

1 year:

non-movers	**95.7%**
movers	**4.3%**

from where

other country	0.0%
other province	0.0%
within province	40.0%
locally	60.0%

5 year:

non-movers	**76.0%**
movers	**24.0%**

from where

other country	0.0%
other province	0.0%
within province	24.0%
locally	76.0%

Canadian Born	**0.0%**
Foreign Born	**0.0%**

When immigrated

prior to 1981	**0.0%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**0.0%**

Cdn citizen	**0.0%**
Aboriginal	**100.0**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016 Ginoogaming First Nation

3558067

Ontario

Population 210

Male	**108**	51.2%
Female	**102**	48.8%

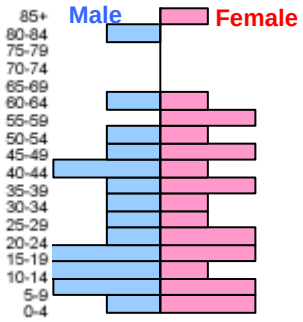
change in past 5 years **20.48%**

Avg Income:

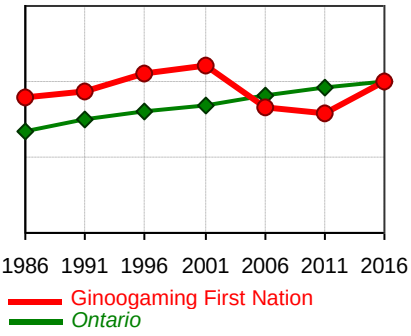
Avg Male Income:

Avg Female Income:

Distribution



Trend



Households 65

Avg Income:

rate of Low Income **0.0%**

avg persons/ household: **3.2**

Household Income

$000's	
over 100	0.0%
80 to 100	0.0%
60 to 80	0.0%
40 to 60	0.0%
20 to 40	0.0%
under 20	0.0%

Household Size



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 64

Avg Value:	**$0**
Avg Monthly Rent:	**$0**
Housing Affordability Index:	**0.00**

Tenure

owned	**25.0%**
rented	**0.0%**
band housing	**75.0%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**0.0%**
College:	**10.0%**
Trade:	**6.7%**
Secondary:	**13.3%**
Primary:	**70.0%**

Language

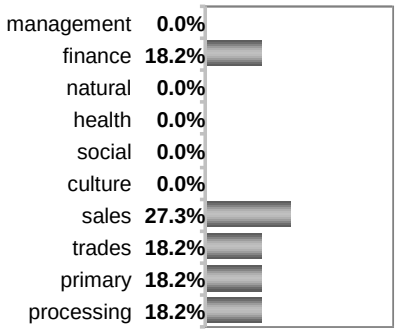
English:	**100.0%**
French:	**0.0%**
Both:	**0.0%**
Neither:	**0.0%**

Labour Force 65

Labour Force:

Male:	**58.3%**
Female:	**41.7%**
Participation Rate:	**44.8%**
Employment Rate:	**83.3%**
Wage and Salary:	**100.0%**
Self-Employed:	**0.0%**
Unpaid:	**0.0%**

Occupation



Community Diversity

Migration

1 year:	**non-movers**	**92.7%**
	movers	**7.3%**
from where	other country	0.0%
	other province	0.0%
	within province	0.0%
	locally	100.0%
5 year:	**non-movers**	**63.2%**
	movers	**36.8%**
from where	other country	0.0%
	other province	0.0%
	within province	35.7%
	locally	64.3%

Canadian Born	**0.0%**
Foreign Born	**0.0%**

When immigrated

prior to 1981	**0.0%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**0.0%**

Cdn citizen	**0.0%**
Aboriginal	**100.0**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016 Pic Mobert North

3558060

Ontario

Population 197

Male	**99**	50.0%
Female	**99**	50.0%

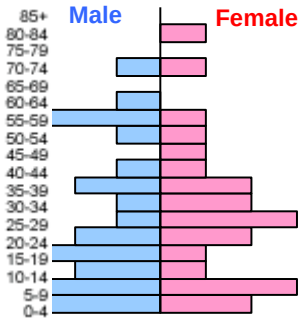
change in past 5 years **2.03%**

Avg Income:

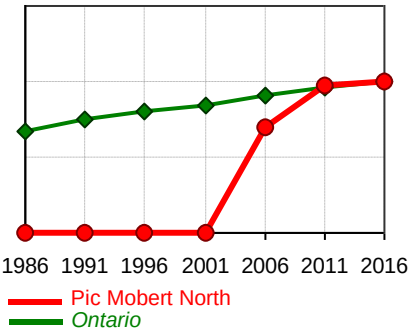
Avg Male Income:

Avg Female Income:

Distribution



Trend



Households 60

Avg Income:

rate of Low Income **0.0%**

avg persons/ household: **3.3**

Household Income

$000's	
over 100	0.0%
80 to 100	0.0%
60 to 80	0.0%
40 to 60	0.0%
20 to 40	0.0%
under 20	0.0%

Household Size



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 66

Avg Value:	**$0**
Avg Monthly Rent:	**$0**
Housing Affordability Index:	**0.00**

Tenure

owned	**28.6%**
rented	**14.3%**
band housing	**57.1%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**0.0%**
College:	**7.4%**
Trade:	**7.4%**
Secondary:	**18.5%**
Primary:	**66.7%**

Language

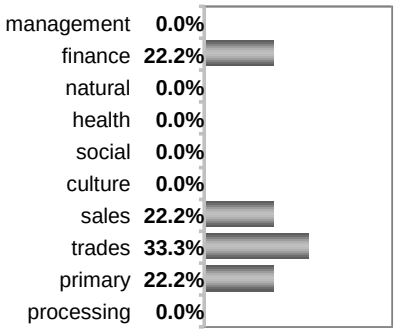
English:	**95.0%**
French:	**0.0%**
Both:	**5.0%**
Neither:	**0.0%**

Labour Force 70

Labour Force:

Male:	**53.3%**
Female:	**46.7%**
Participation Rate:	**53.8%**
Employment Rate:	**64.3%**
Wage and Salary:	**84.6%**
Self-Employed:	**0.0%**
Unpaid:	**15.4%**

Occupation



Community Diversity

Migration

1 year: **non-movers** **84.6%**
movers **15.4%**

from where

other country	0.0%
other province	0.0%
within province	33.3%
locally	66.7%

5 year: **non-movers** **64.7%**
movers **35.3%**

from where

other country	0.0%
other province	0.0%
within province	30.8%
locally	69.2%

Canadian Born	**0.0%**
Foreign Born	**0.0%**

When immigrated

prior to 1981	**0.0%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**0.0%**

Cdn citizen	**0.0%**
Aboriginal	**94.9**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

2016 Pic Mobert South

3558061

Ontario

Population 125

Male	**0**	0.0%
Female	**0**	0.0%

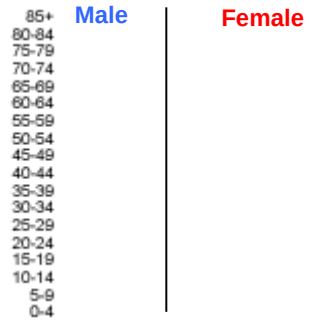
change in past 5 years **23.20%**

Avg Income:

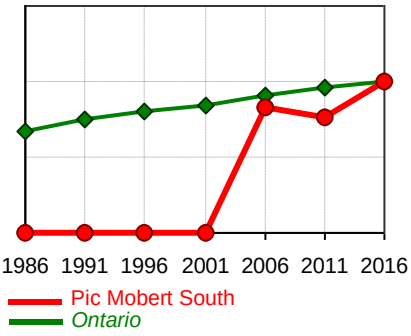
Avg Male Income:

Avg Female Income:

Distribution



Trend



Households 55

Avg Income:

rate of Low Income **0.0%**

avg persons/ household:

Household Income

$000's	
over 100	0.0%
80 to 100	0.0%
60 to 80	0.0%
40 to 60	0.0%
20 to 40	0.0%
under 20	0.0%

Household Size



1	0.0%
2	0.0%
3	0.0%
4	0.0%
5+	0.0%

Dwellings 53

Avg Value:	**$0**
Avg Monthly Rent:	**$0**
Housing Affordability Index:	**0.00**

Tenure

owned	**40.0%**
rented	**0.0%**
band housing	**60.0%**

When constructed

1961-1980	0.0%
1981-1990	0.0%
1991-2000	0.0%
2001-2005	0.0%
2006-2010	0.0%
2011-2016	0.0%

Education

Highest Level

University:	**0.0%**
College:	**23.5%**
Trade:	**0.0%**
Secondary:	**17.6%**
Primary:	**58.8%**

Language

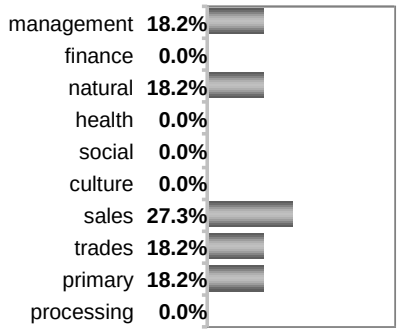
English:	**0.0%**
French:	**0.0%**
Both:	**0.0%**
Neither:	**0.0%**

Labour Force 50

Labour Force:

Male:	**54.5%**
Female:	**45.5%**
Participation Rate:	**50.0%**
Employment Rate:	**81.8%**
Wage and Salary:	**69.2%**
Self-Employed:	**15.4%**
Unpaid:	**15.4%**

Occupation



Community Diversity

Migration

1 year:	**non-movers**	**92.0%**
	movers	**8.0%**
from where	other country	0.0%
	other province	0.0%
	within province	0.0%
	locally	0.0%
5 year:	**non-movers**	**60.9%**
	movers	**39.1%**
from where	other country	0.0%
	other province	0.0%
	within province	55.6%
	locally	44.4%

Canadian Born	**0.0%**
Foreign Born	**0.0%**

When immigrated

prior to 1981	**0.0%**
1981 to 1990	**0.0%**
1991 to 2000	**0.0%**
2001 to 2011	**0.0%**
2011 to 2016	**0.0%**

Cdn citizen	**0.0%**
Aboriginal	**100.0**

Data Source

source: Statistics Canada. 2017. National Household Survey (NHS) 2016 . Statistics Canada Catalogue no. 98-316-X2016001. Version November 29, 2017. Ottawa.

(f) The Monitoring Programs for Exceptions

6.1 (f) The Monitoring Programs for Exceptions

There is no monitoring program for exceptions on the Nagagami Forest as there are no exceptions to prescriptions or conditions that differ from specific direction or recommendations in the applicable forest management guides (FMPM, 2017).

(g) The Monitoring Program for Roads

6.0 Roads and Water Crossing Monitoring Program

A program for monitoring those roads and water crossings that are the responsibility of the SFL has been developed to determine if there are environmental or public concerns. These findings will be used to assess the access conditions and update inventory information.

6.1 Frequency

The following schedule will be used by HPL for completing inspections of road beds and water crossing structures on assigned roads:

6.1.1 Crossings Inspections

1. Bridge - Frequent use (i.e. used during current AWS) - Annual
2. Bridge - Infrequent use - **3 years**
3. Road and culvert crossings - **5 years**
4. Hazards – Inspection and abatement as encountered (i.e. refer to Module 7)

6.1.2 Road Inspections

1. AWS Roads - Roads used/included to access allocations in AWS will be assigned to Shareholder(s). They remain responsible for verifying entire length of drivable road.
2. Transfer Roads at end of FMP - Full joint inspections of drivable roads in network expected to be transferred between the Crown and forest industry. This assessment will also be used to determine if there are any changes to the drivability attribute for the network.

6.2 Responsibility

6.2.1 Crossings

- HPL will maintain an inventory of 'as built' crossings as part of an *Access* database. This will include attributes of those that would be 'acceptable' or 'unacceptable' for transfer or has been identified as the responsibility of another user. GIS will be the sole source of crossing information.
- HPL will provide updated crossing list of the database attributes to MNRF at the end of each FMP phase in those cases where there has been a transfer of responsibility from the SFL.
- The following principles will be used to maintain the crossing inventory database:
    - HPL will not use FRWCI to maintain their assigned crossing inventory with the exception of the 'crossing id' and 'responsibility' fields in GIS.
    - HPL inventory will consist of hardcopy maps, measurements and photos which will be used for future transfer documentation. Primary crossing information such as culvert size, location and condition will be stored as an attribute in GIS and will form the basis of their inventory.
    - HPL will be responsible for assigning new FRWCI crossing numbers as they will generally be completing the greatest number of new installations.

6.2.2 Roads

- HPL will track location and drivability of new road construction carried out as part of regular operations and will maintain data as part of shared GIS road layer. Data source to determine road centerline location will vary but could include GPS line data or Supplemental Aerial Photography based information.

- MNRF will be responsible for updating roads in the LIO layer as required. For example:
  - Old roads found that were not in original transfer
  - Old roads brushed in and not drivable or degenerated to trail
  - Newly discovered roads information

6.2.3 Road Infrastructure Transfer Protocol

- In order to ensure that future transfer of responsibility occurs in a timely and efficient manner the following information will be collected/maintained by both HPL and MNRF.

  - New crossings:

    1. Watershed and culvert sizing report (i.e. In the case of forest industry *Appendix 1: Form for Submission of Information on a Proposed Crossing* for specific crossing).
    2. Field measurements of structure and site conditions required to document compliance with installation standards (i.e. In the case of forest industry results will be included under the *HPL Crossing Installation Report* section of the *Appendix 1: Form for Submission of Information on a Proposed Crossing* for specific crossing).
    3. Photographs of final condition including approaches, inlet, outlet and interior of structure.

  - Roads:

    1. Any identifiable or known hazardous condition to the road bed that could be encountered unexpectedly and has the potential for serious consequences (e.g. washouts or obstructions) should be remedied by the party responsible before transfer of responsibility occurs.
    2. The infrastructure is to be jointly inspected to confirm status before responsibility is transferred.

- HPL upgrades on MNRF crossings will be subject to the following transfer process:

  - Timing of transfer at the 1 yr, 5 yr, or 10yr point will be subject to the *Use Management Strategy* for the road network. These UMS's will designate those specific crossings in the road network for which responsibility has been assigned to the SFL.
  - Crossings that are the responsibility of MNRF will have inventory maintained by them as part of FRWCI. In those cases where MNRF is updating FRWCI on crossings they are maintaining (i.e. upgrading/removal), then the transfer of crossing information to the SFL will only occur when there is a formal transfer of responsibility during either the Phase 1 or Phase 2 periods of the FMP.

- Where industry has left infrastructure in good condition and responsibility has been properly transferred, it is reasonable to expect that industry will be entitled to re-assume responsibility in the future without unexpected restrictions or constraints that would interfere with forest management (e.g. a cottage association or snowmobile club assumes responsibility and is subsequently reluctant to accept a resumption of Forest Industry use at a later date). It is also recognized that if a road or water crossing is not used for industrial purposes for a prolonged period, its condition will gradually decline and it may require significant upgrading in order to re-establish safe operating conditions for industrial traffic. The Forest Industry would undertake this reconstruction at its expense in order to meet its needs.

- When Forest Industry is unable to wait for Crown to conduct required maintenance on failing infrastructure even though responsibility of the Crown, they will complete improvement work necessary in order to continue operations. Crown may offer to assist with remedial cost so that responsibility can be transferred to the Forest Industry. Remedial work preformed by the forest industry will satisfy relevant water crossing standards in SSG and the *Crown Land Bridge Management Guidelines*. Formal transfer of responsibility for these crossings will occur during either the Phase 1 or Phase 2 periods or in some cases as an amendment during the term of the FMP.

- It is expected that the road and crossing installation information will be used as the basis for future transfer of responsibility. Responsibility for the roads and/or crossings will remain with the appropriate party until the adequate information is made available to allow assignment of responsibility to occur.

6.3 Road Crossing Inspection Method

- For each network HPL will prepare a road checklist and summary list of crossings assigned to the SFL. The inspection will consist of a visual assessment of the road bed and crossings as detailed measurements will have been previously collected. Only identified hazards will require more formal documentation (i.e. photos measurements).

- Shareholder and HPL staffs will inspect the entire length of assigned drivable road networks.

- Entrance to road networks assigned in FMP will be posted with liability disclaimers as required.

- Failures arising from beaver caused failures of roads or crossings would be considered force majeure and would require necessary follow-up required to not place the public at danger (e.g. posting and/or berm). Refer to *Module 7 Procedure for Dealing with Identified Road and Water Crossing Hazards* for additional details.

(h) The Monitoring Program for Success of Silvicultural Activities

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Monitoring Program for the Assessment of Regeneration Success

A monitoring program has been in practice for over 20 years to assess how well silvicultural activities are meeting the standards contained in the Silvicultural Ground Rules (SGR). The program's objectives are to measure and confirm the degree of success achieved by the renewal efforts on the Nagagami Forest. This section will describe how silvicultural monitoring will take place on the Nagagami Forest including detailed methods of data collection, timing, recording, documentation and reporting and describe how this information will be used in the assessment of long-term effectiveness through trend analysis.

Survival Assessments
Survival or stocking assessments may be conducted where planting stock or seeding areas expected to vary from normal at the discretion of the forest manager. Where required, these assessments are usually done aerially and if needed followed up by a ground assessment.

Regeneration Assessments
Regeneration assessments are conducted to determine the status of the actual forest condition encountered, the degree of effectiveness of silvicultural treatments and the possible need for remedial action in the event that a silvicultural or regeneration success was not attained.

Assessments will be conducted as part of the annual operations and will be performed by HPL (SFL holder). Occasionally, the assessments will include members from both MNR and HPL to ensure that a uniform and consistent approach to the assessment is being implemented by both the auditor (MNR) and auditee (SFL holder).

Methodologies
Ground and aerial regeneration assessments will be conducted between 5 and 9 years following the final scheduled treatment as described in the regeneration standards for each individual SGR described in table FMP-4. However, there are two separate situations where assessments may vary from its SGR year of assessment. In circumstances where the geographical location of an assessment area makes the assessment economically inefficient (e.g. a relatively small assessment area found to be isolated from the other concentrated assessments areas), this area will be assigned to a future assessment year. When scheduling areas for regeneration assessments, establishment assessments will be delayed according to the species with the highest regeneration assessment timeline in FMP-4 (e.g. micro-site management of lowland black spruce in a large concentration of jack pine, or small concentrations of white pine and white spruce amongst a larger stand dominated with poplar). Finally, in those extraordinary circumstances where the forest practitioner determines that an area could meet the SGR standards, but has not done so within the prescribed establishment assessment age, this area can be rescheduled for assessment at half of the prescribed age of assessment detailed in the respective SGR. For example, for a stand with an SGR of PJ1-121-PJ1 with an establishment

assessment of 5 years, a maximum of 2.5-year delay in the regeneration assessment would be granted to assess and report on that area.

Assessments will be conducted using one single or a combination of aerial (extensive) and ground (intensive) survey methods. The SFL is currently evaluating the use of large-scale photography and satellite acquired imagery to conduct their establishment assessments. These evaluations will be shared and done with MNRF before being more frequently used and incorporated as part of the establishment assessments.

As a rule (and until the incorporation of large-scale photography and/or satellite acquired imagery), at the age of assessment selected stands will initially be surveyed aerially (extensive). In cases where the extensive assessment is not possible due to the forest condition (i.e. highly competitive sites, complex mixture of forest species composition, lower than expected densities, etc.) the area will be stratified and assigned to a ground survey.

There is no mandatory use of specific assessment methodologies for regeneration assessment. HPL will be conducting extensive surveys, aerially to assess to what degree regeneration standards were achieved. On those sites where an intensive survey is required, ground surveys will be conducted using the Free-Growing Regeneration Assessment (FGRA) method. Both assessment methodologies are consistent with the prescriptions, the regeneration standards and the tools to forecast stand development (yield tables), described in the FMP.

Data Compilation

The information collected in the field will be entered into the geospatial database that is used to maintain record and update regeneration assessment results. This information is also used to conduct analysis for the purpose of supporting or updating modeling inputs, supporting the development of annual reports, and trend analysis as well as the development of annual silviculture programs and associated budgets.

Reporting

Annually, as part of the FMPM annual reporting requirements, TFAI will report the following information products amongst other information associated with the assessments of regeneration success listed in the FMPM (2009) Part E, sec. 2.4.6;

a) Disturbance group (i.e. harvest, natural)
b) Year of disturbance
c) Year of origin
d) Depleted Forest Unit (FU)
e) the SGR for the area assessed
f) the target silviculture stratum (target FU)

g) the establishment (FTG) indicator (e.g. successfully regenerated, not successfully regenerated)
h) the assigned silvicultural stratum that was successfully established (Free to grow forest unit)
i) Species composition
j) Height
k) Stocking/density (as per the SGR)

To ensure that silvicultural treatments are applied to the most appropriate sites, the SGR code needs to be verified post-harvest. In some cases, the actual stand condition harvested, as represented by the forest unit (FU) designation, is different than that listed in the planning inventory. If the actual stand FU differs from the planning inventory, the SGR code is updated to reflect actual site conditions to allow the proper prescription to be applied.

Due to time requirements for areas harvested to regenerate to SGR standards, areas proposed for establishment assessment during this planning period will also include those that were regenerated in previous plan terms. Silvicultural and regeneration successes will be determined according to the regeneration standards for each of the SGRs in table FMP-4.

Each year, as part of the annual reporting process, HPL will highlight to the respective Local Citizen's Committee (LCC) the annual silvicultural activities that were completed during that year, including the assessment of regeneration success.

Analysis and Evaluation

Following data compilation and reporting, forest practitioners will analyze the available information over multiple years to establish long-term trends in the levels of renewal efforts. These analysis results are then used to determine if the desired forest composition objective identified as the desired future forest condition by the planning team was actually achieved. In addition, analysis results are also evaluated to confirm or update inputs and assumptions such as post-renewal stand development patterns, growth and yield rates and forest composition in forest modeling.

As part of plan production and upon request from the LCC, the SFL holder will share analysis results that will describe the post-renewal forest condition information that is being utilized for the benefit of plan production.

(i) Documentation of the Planning of Roads, and Roads in Areas of Concern - Road Use Management Strategies (RUMS)



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Introduction

This document has been organized by describing each operational road network and then presenting the forest management planning requirements for all types of roads nestled within each delineated zone. Land use direction and road use management strategies developed for each new primary, branch and operational road boundary have been defined.

Nagagami Operational Road Networks

Operational road planning on the Nagagami Forest has been organized into nine geographic zones separated by natural features, major roads, and rail lines. Crown land policy direction and moose emphasis areas were considered when establishing these road network areas and boundaries. Figure 1 below shows the operational road networks developed for the Nagagami Forest with their boundaries displayed in black. Highway 631 makes up the eastern boundary for the Kenogami Lumber, Hornepayne Creek and White Owl road networks, and the western boundary for the North Central and Beaton road networks.

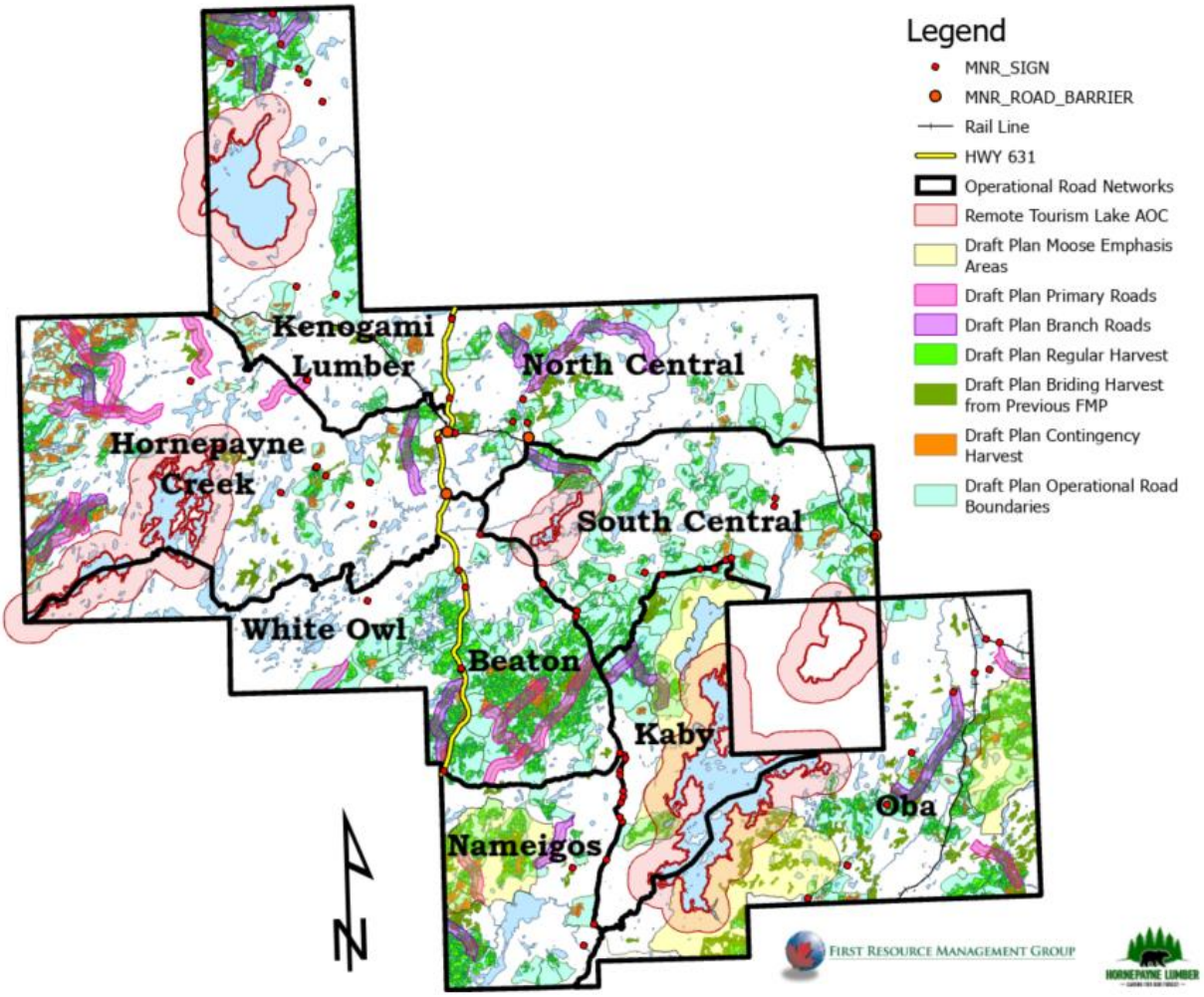


Figure 1 Nagagami Forest Operational Road Networks (boundary lines are outlined in black).

Existing operational roads make up 81% of forest roads on the Nagagami Forest. Figure 2 illustrates the high proportion of operational roads found within each road network as compared to existing primary and branch roads on the unit. Operational roads are normally not maintained after they are no longer required for forest management purposes and are often decommissioned in accordance with land use direction or direction for moose emphasis areas (MEAs). There are existing operational roads that have been identified from the previous plan where decommissioning efforts will take place during the onset of this ten-year forest management plan.

Operational Road Boundaries (ORBs) have been put into place to further define where new operational roads are to be contained. Roads are constructed to provide short term access for harvest, renewal and tending operations. ORBs have been identified and listed under their respective networks where specific road use management strategies have been presented.



	Beaton	Hornepayne Creek	Kaby	Kenogami Lumber	Nameigos	North Central	Oba	South Central	White Owl
Primary Roads	72.46339444	61.54745362	34.74244295	69.76697149	48.4807104	88.53630427	99.80048049	111.6475028	27.34187352
Branch Roads	34.1010408	112.820392	9.099164986	30.76902368	19.01821894	26.5300374	38.59542428	35.91826216	3.622074392
Operational Roads	331.3420234	928.5136232	224.2782642	479.8144321	204.0335603	490.5521646	712.735778	507.7117841	399.5565977

Figure 2 Kilometers of Primary, Branch and Operational Roads within Nagagami Forest Operational Road Networks.

Please know that the total sum for road class includes duplication where roads up boundaries for two or more operational road networks. For instance, Haken Lake Road shares a common boundary between the following networks: South Central and Beaton; 16 km was included in both networks, Beaton and Kaby; 6 km was included in both networks, Kaby and Nameigos; 18 km was included in both networks.

PRIMARY ROAD CORRIDORS

Primary roads provide principal access for the management unit, and are constructed, maintained, and used as the main road system on the management unit. Primary roads are normally permanent roads, although there may be significant periods of time when specific primary roads are not required for forest management purposes.

BRANCH ROAD CORRIDORS

Branch roads are roads, other than primary roads, that branch off existing or new primary or other branch roads, providing access to and through areas of operations on a management unit. Whenever a new road, other than a primary or operational road, is required to provide access to, through, or between, separate areas of operations, the road will be classified as a branch road.

OPERATIONAL ROAD BOUNDARIES

Operational roads are roads within operational road boundaries, other than primary or branch roads, that provide short-term access for harvest, renewal and tending operations. Operational roads are normally not maintained after they are no longer required for forest management purposes and are often decommissioned.

Forest landings within road corridors and operational road boundaries

Forest landings are areas of cut blocks where harvested trees are processed and stacked before they are loaded onto haul trucks. New landings will adhere to prescribed Area of Concern (AOC) prescriptions developed to protect values such as wetlands and streams. Table FMP-11 contains specific direction (like slope dependent buffers) for forest activities taking place in the vicinity of a value. If a landing is to be located near a water feature, additional erosion controls, like silt fencing, straw bales and/or geotextile fabrics are recommended to be put into place around the landing perimeter, as per Table FMP-11. The final size of the landing will ultimately depend on the location features and volume timber that is being removed from the area.

Landings should provide enough space for moving equipment, processing and stacking logs, and loading log trucks. The spacing of landings was discussed during operational planning task team meeting(s) because they do contribute to a loss in productive forest and the team would like to reduce the impact of landings on the forest. It was decided that landings should occur at a minimum of 500 meters apart, be no wider than 1 ½ tree lengths (average size wood) and no deeper than 2 tree lengths (average size wood).

Access Provisions and Restrictions

Access provisions and restrictions have been identified within each Road Network. Points where access control signage occurs within each network has been determined through a spatial exercise. Roads with access restrictions cross over multiple road networks and operational road boundaries. It is imperative that restriction measures are followed on the Nagagami Forest to protect land use intent.

NORTH CENTRAL ROAD NETWORK

NETWORK LOCATION

The North Central road network is situated in the northeast corner of the forest. The Nagagami Forest Management Unit (FMU) boundaries make up the north and east boundaries while most of the Canadian National Railway (CN) runs along the southern boundary with Highway 631 making up the western border of this zone.

LAND USE

Road planning will follow the direction provided in the Crown Land Use Policy Atlas for *West Multiple Resource Management General Use Area (G1798)*. The East and West Multiple Use Resource Management General Use Area were developed to promote and encourage multiple land use objectives while minimizing conflict between different uses. Special considerations have been made to further promote public access and recreational activities while maintaining strategies that protect the remote quality of designated remote tourism lakes and category A and B canoe routes. Existing public access and recreational uses will continue. Policies for the use of existing roads should maintain or enhance the recreation qualities in the area. Having regard for the land use intent, the most appropriate road system for both resource extraction and recreational uses will be developed. Road use will occur in accordance with the prescriptions listed. The control of road locations and their use will be managed to maintain acceptable levels of angling and hunting and other recreational uses.

Bruce Lake is a designated remote tourism lake that falls within this network where further restrictions on forestry activities do apply. However, there are no forestry activities planned within 1 km of Bruce Lake during this ten-year plan. Two new branch roads will be constructed within this road network: **Hart Lake Road** and **Haig Loop**. Existing primary and branch roads within this area are listed in Table 1:

Table 1. North Central Road Network Primary and Branch Roads

North Central Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**24**
Airport Road	1
Bruce Creek Road	1
Charlie Mays Road	4
Haig Loop	< 1
NC16-71	3
NC16-72	15
Primary Roads	**80**
Becker Road	9
McDuff Road	25
Norms Road	14
North Larkin Road	9
North Norm's Road	4
Oba Cutoff Road	17
Private Mill Rd	2
Grand Total	**104**

HAIG LOOP – Branch Rd

HART LAKE ROAD – Branch Rd

1) Proposed Corridors

a) Description:
Hart Lake Road (4.7 km) and Haig Loop (19 km) branch off Norms Road in Haig Township. This area is relatively close to the town of Hornepayne and is a short distance east of HWY 631.

b) Rationale:
These proposed branch road corridors will improve previously built operational roads to access 2021-2031 FMP allocations. These roads will also provide greater connectivity and opportunities for recreational activities for the community of Hornepayne.

c) Use Management Strategy:

Maintenance:
General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Monitoring:

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

2) Summary of Public Comments – No public comments provided during Stage 3.

NORTH CENTRAL OPERATIONAL ROAD BOUNDARIES

Listed in Table 2 are the Operational Road Boundaries (ORBs) that fall within the North Central Operational Road Network:

Table 2. Operational Road Boundaries within North Central Road Network

Operational Road Boundaries within North Central Road Network:	
Contingency Harvest	Farquhar 130
	Farquhar 171
	Farquhar 173
	Farquhar 174
	Farquhar 175
	Farquhar 176
	Haig 170
	Haig 171
	Haig 172
	Haig 173
Regular Harvest	Farquhar 120
	Farquhar 123
	Farquhar 124
	Farquhar 125
	Farquhar 126
	Farquhar 127
	Farquhar 128
	Farquhar 129
	Farquhar 131
	Farquhar 132
	Farquhar 133
	Haig 120
	Haig 121
	Haig 122
	Haig 123
	Haig 124
	Haig 125
	Haig 126
	Haig 127
	Haig 128
	Haig 129
	Haig 130
	Haig 131
	Wicksteed 123
	Wicksteed 124
	Wicksteed 125
	Wicksteed 126
	Wicksteed 127
	Wicksteed 128
	Wicksteed 130
	Wicksteed 131

1) Proposed Use Management Strategy for North Central Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme windstorms or precipitation).

Access Provision / Restrictions:

None planned.

Transfer / Future 1 Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the West Multiple Resource Management Area (G1798) General Use Area. Land-use direction requires that:

"*All roads built and maintained in this area will be subject to applicable legislation, policies and guidelines. Consideration for environmental, recreational and tourism values will be given, particularly in the vicinity of identified tourism lakes and ecological values. Operating guidelines for the protection of such values will be reflected in the CLUAH Management Guidelines document.*"

Roads will be decommissioned (where water crossings need to be removed); otherwise, roads will no longer be maintained.

2) Summary of Public Comments

No comments received.

3) Use Management Strategy for Operational Road Network

Same as proposed.

SOUTH CENTRAL ROAD NETWORK

NETWORK LOCATION

The South Central road network abuts to the North Central network using the rail line as the boundary between them. The eastern border follows the edge of the forest management unit boundary and the southern border runs along Lascelles Road and Shamrock Creek. Shamrock Creek also serves as a Crown Lane Use Policy (CLUPA) boundary. The western boundary is made up using Haken Lake Road, North Larkin Road and South Road.

LAND USE

Road planning will follow the direction provided in the Crown Land Use Policy Atlas for the *East Multiple Resource Management General Use Area (G1787)*. The East and West Multiple Use Resource Management General Use Area were developed to promote and encourage multiple land use objectives while minimizing conflict between different uses. Special considerations have been made to further promote public access and recreational activities while maintaining strategies that protect the remote quality of designated remote tourism lakes and category A and B canoe routes. Identified tourism lakes will be managed to protect their remote quality and in accordance with Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Public access to existing and newly developed primary roads will be permitted.

There are two designated remote tourism lakes within this network in which additional restrictions pertaining to forestry activities apply. Operations within 2 km of Larkin Lake or 1 km of Lascelles Lake will have to follow policy direction to maintain the remoteness of these lakes. New roads will be decommissioned upon completion of road lifespan unless otherwise specified under an approved Forest Management Plan or Road Use Management Strategy. A seasonal timing restriction applies from the beginning of the walleye sportfishing season to the end of the second week of gun moose hunt (refer to FMP Table 11 for Area of Concern details).

Jackfish Road is only new branch road to be constructed within the South Central road network. This sector contains the most kilometers of existing primary roads within its boundaries (see Table 3 for a list of existing primary and branch roads). This makes sense given the proximity of this zone to the town of Hornepayne and the mill.

Table 3. Existing Primary and Branch Road within South Central Network

South Central Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**31**
Kabi River Road	9
KR-2	2
LASC-2	< 1
Lascelles East Road	4
Lascelles West Road	13
LASCW-12	1
LASCW-7	1
North Shamrock Rd.	< 1
quarry	1
Primary Roads	**104**
Expansion Road	3
Haken Lake Road	16
Kabi Lake Road	< 1
Lascelles North Road	15
Lascelles Road	16
Lascelles-Woolrich Link Road	4
McDuff Road	12
Mead Road	< 1
Newago Road	10
North Larkin Road	6
Off License	< 1
Private Mill Rd	1
SC16-238	< 1
SC16-239	3
SC16-240	6
SC16-241	1
SC16-242	< 1
SC16-243	4
SC16-244	2
South Larkin Road	5
Grand Total	**135**

JACKFISH ROAD – Branch Rd

1) Proposed Corridor

a) Description:
Jackfish Road is a 6.6 km route north of Larkin Lake (identified as a remote tourism lake) that crosses through the northeast and northwest corners of Larkin and Lascelles Townships.

b) Rationale:
To access 2021-2031 harvest allocations east of the Jackfish River and north of Larkin Lake.

c) Use Management Strategy:

Maintenance:
General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

2) Summary of Public Comments - No public comments provided during Stage 3.

SOUTH CENTRAL OPERATIONAL ROAD BOUNDARIES

All Operational Road Boundaries (ORBs) that fall within the South Central Operational Road Network are listed in Table 4. It is noted that there are a few ORBs that do overlap with adjacent Road Networks. Operational road boundaries will be clipped to align with Network boundaries to eliminate these overlapping ORBs for final plan submission.

Table 4. Operational Road Boundaries within South Central Road Network

Operational Road Boundaries within South Central Road Network:	
Contingency Harvest	Lascelles 170
	Woolrich 170
	Woolrich 172
	Woolrich 173
	Woolrich 174
	Woolrich 175
	Woolrich 176
Regular Harvest	Farquhar 121
	Farquhar 122
	Larkin 120
	Larkin 121
	Larkin 128
	Larkin 130
	Larkin 131
	Lascelles 120
	Lascelles 121
	Lascelles 122
	Lascelles 123
	Lascelles 124
	Lascelles 125
	Lascelles 126
	Lascelles 127
	Lascelles 128
	Lascelles 129
	Lascelles 130
	Lascelles 131
	Lascelles 132
	Lascelles 133
	Lascelles 134
	Lascelles 135
	Lascelles 136
	Lascelles 139
	Lascelles 140
	Lascelles 141
	Lascelles 142
	Lascelles 143
	Lipton 122
	Lipton 126
	Woolrich 121
	Woolrich 122
	Woolrich 123
	Woolrich 124
	Woolrich 125
	Woolrich 126
	Woolrich 127
	Woolrich 128
	Woolrich 129
	Woolrich 130
	Woolrich 131
	Woolrich 132
	Woolrich 133
	Woolrich 134
	Woolrich 135
ORBs that overlap with South Central/Kaby Road Networks:	
Contingency Harvest	Woolrich 171
Regular Harvest	Lascelles 137
	Lascelles 138
	Lipton 129
	Woolrich 120

1) Proposed Use Management Strategy for South Central Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme windstorms or precipitation).

Access Provision / Restrictions:

Table 5 lists all the operational road boundaries (ORBs) within the South Central Network that may directly or indirectly impact land use intent. ORBs where signage is posted have been identified as well as ORB's that are adjacent or could potentially provide access to the specific land use restriction. A description of the restriction sign has been provided in Table 6.

Table 5. South Central Operational Road Network Access Restrictions

SOUTH CENTRAL OPERATIONAL ROAD NETWORK ACCESS RESTRICTION SIGNAGE										
ORB Identifier:	**NAG-015**	**NAG-016**	**NAG-017**	**NAG-018**	**NAG-019**	**NAG-020**	**NAG-021**	**NAG-022**	**NAG-047**	**NAG-048**
Beaton 139							✓	✓		
Beaton 140										
Beaton 141										
Farquhar 121										
Farquhar 122										
Farquhar 124										
Larkin 120										
Larkin 125										
Larkin 126										
Larkin 128										
Larkin 130										
Larkin 131										
Lascelles 120						✓	✓	✓		
Lascelles 121						✓	✓	✓		
Lascelles 122						✓	✓	✓		
Lascelles 123										
Lascelles 124										
Lascelles 125										
Lascelles 126										
Lascelles 127										
Lascelles 128					✓	✓	✓	✓		
Lascelles 129				✓	✓	✓	✓	✓		
Lascelles 130						✓				
Lascelles 131										
Lascelles 132										
Lascelles 133										
Lascelles 134										
Lascelles 135										
Lascelles 136										
Lascelles 137			✓	✓	✓	✓				
Lascelles 138					✓	✓				
Lascelles 139										
Lascelles 140										
Lascelles 141					✓	✓				
Lascelles 142										
Lascelles 143										
Lascelles 170										
Lipton 126										
Lipton 127										
Wicksteed 130										
Woolrich 120					✓	✓			✓	✓
Woolrich 121										
Woolrich 122										
Woolrich 123										
Woolrich 124										
Woolrich 125										
Woolrich 126										
Woolrich 127										
Woolrich 128										
Woolrich 129										
Woolrich 130										
Woolrich 131										
Woolrich 132										
Woolrich 133										
Woolrich 134										
Woolrich 135										
Woolrich 170	✓	✓			✓	✓			✓	✓
Woolrich 171	✓	✓			✓	✓			✓	✓
Woolrich 172	✓	✓			✓	✓			✓	✓
Woolrich 173										
Woolrich 174										
Woolrich 175										
Woolrich 176										

Table 6. Description of Access Control Signage within the South Central Operational Road Network.

Description of Access Control Signage within the South Central Operational Road Network:	
NAG-015	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-016	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-017	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-018	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-019	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-020	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-021	Unauthorized use of this road to access the following lakes is prohibited: Kabinakagamisis. Lascellas, Larkin.
NAG-022	Unauthorized use of this road to access the following lakes is prohibited: Bruce, Nameigos, East Nameigos, Kabinakagamisis, Breckenridge, Kabinakagami.
NAG-047	Unauthorized use of this road to access the following lakes is prohibited: Larkin, Lascelles, and Kabinakagamisis.
NAG-048	Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami and Kabinakagamisis.

Transfer / Future 1 Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the West Multiple Resource Management Area (G1798) General Use Area. Land-use direction requires that:

"*All roads built and maintained in this area will be subject to applicable legislation, policies and guidelines. Consideration for environmental, recreational and tourism values will be given, particularly in the vicinity of identified tourism lakes and ecological values. Operating guidelines for the protection of such values will be reflected in the CLUAH Management Guidelines document.*"

Roads will be decommissioned (where water crossings need to be removed); otherwise, roads will no longer be maintained.

2) Summary of Public Comments

No comments received to date.

3) Use Management Strategy for Operational Road Network

Same as proposed.

Transfer / Future Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the East Multiple Resource Management Area (G1787) General Use Area. Land-use direction requires that:

"*All roads built and maintained in this area will be subject to applicable legislation, policies and guidelines. Consideration for environmental, recreational and tourism values will be given, particularly in the vicinity of identified tourism lakes and ecological values. Operating guidelines for the protection of such values will be reflected in the CLUAH Management Guidelines document.*"

Operational Road Boundaries (ORBs) referred to as **Larkin 121** and **Lascelles 125** do breach into the Designated Remote Tourism Lake AOC for Larkin Lake. Likewise, **Woolrich 121** also projects into a Designated Remote Tourism Lake AOC to an unknown lake that falls completely within a private township, while **Lascelles 124, Lascelles 125, Lascelles 126, Lascelles 132,** and **Lascelles 133** ORBs enter the Lascelles Lake AOC. All new operational roads will be effectively decommissioned immediately after the completion of forestry activities (in individual harvest blocks / areas). Roads will be built to the lowest possible standard and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation. Refer to Supplementary Documentation 6.1 (q) – Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations for more information on road decommissioning.

2) Summary of Public Comments

No comments received.

3) Use Management Strategy for Operational Road Network

Same as proposed.

KENOGAMI LUMBER ROAD NETWORK

NETWORK LOCATION

The Kenogami Lumber road network lies within the most northern tip of the management unit. Nagagami Lake is situated right in the middle of this zone. For the most part this road network shares its northern boundaries with the Nagagami Forest boundaries. The southern boundary skips through a series of watercourses with Highway 631 making up the eastern border that is adjacent to the North Central road network.

LAND USE

Road planning will follow the direction provided in the Crown Land Use Policy Atlas for West Multiple Resource Management General Use Area (G1798). The East and West Multiple Use Resource Management General Use Area were developed to promote and encourage multiple land use objectives while minimizing conflict between different uses. Special considerations have been made to further promote public access and recreational activities while maintaining strategies that

protect the remote quality of designated remote tourism lakes and category A and B canoe routes. Existing public access and recreational uses will continue. Policies for the use of existing roads should maintain or enhance the recreation qualities in the area. Having regard for the land use intent, the most appropriate road system for both resource extraction and recreational uses will be developed. Road use will occur in accordance with the prescriptions listed. The control of road locations and their use will be managed to maintain acceptable levels of angling and hunting and other recreational uses. Nagagami Lake and Fraser Lake will be managed to protect their remote quality and in accordance with Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines.

There are three designated remote tourism lakes within this road network; Nagagami Lake, Ahmabel Lake and Fraser Lake. Restrictions on forestry operations do apply within 1 km of these lakes, including seasonal timing restrictions from the beginning of the walleye sportfishing season to the end of the second week of moose gun hunt, and specific plans for road decommissioning.

One new primary road, referred to as **Bobcat Road** is to be constructed with most of the road being established in the Hornepayne Creek network. The road use management strategy for Bobcat Road can be found under the Hornepayne Creek operational network section of this document. There are also five new branch roads that are to be constructed: **Pody Road**, **Hiawatha West Road**, **Nagagami Road**, **Hiawatha East Road** and **Little Fraser Road**. Bobcat Road also crosses over into the Hornepayne Creek road network. There are few primary roads within this road network. Nagagami Road and Kenogami Lake Lumber Road are the main existing primary roads that access this zone (see Table 7 for complete listing of Primary and Branch Roads).

Table 7. Existing Primary and Branch Roads within the Kenogami Lumber Road Network

Kenogami Lumber Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**23**
Abandoned-Secondary Road	4
Hiawatha Cutoff Road	9
Landing Road	6
Private Road	1
Shadrock Lake Road	2
Wickstead Lake South Rd.	1
Primary Roads	**50**
Kenogami Lake Lumber Road	14
Menzie Creek Road	3
Nagagami Road	33
Grand Total	**73**

PODY ROAD – Branch Rd

HIAWATHA WEST ROAD – Branch Rd

HIAWATHA EAST ROAD – Branch Rd

1) Proposed Corridors

a) Description:

Pody Road (3 km), Hiawatha West Road (3.5 km), Nagagami Road (7 km) and Hiawatha East Road (2.3 km) all are located within the north west corner of Hiawatha Township. All the roads branch off the Hiawatha Cut-off Road (primary road) except for Nagagami Road that branches directly off the Nagagami Road, which is also a primary forest access road.

b) Rationale:

To access the wood basket (2021-2031 FMP harvest allocations) in the northwest corner of Hiawatha Township (west of Fraser Lake and north of Nagagami Lake).

c) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

Access:

Pody Road Hiawatha West Road, and Hiawatha East Road will be governed by the following access control signage:

- NAG 051, NAG 009, NAG 010, NAG 008 all indicating that the roads are closed to public vehicular travel from October to October_ (current year).
- NAG 062 indicates unauthorized use of this road to access the following lakes is prohibited: Ahmabel, Frazer, and Nagagmi Lakes.
- NAG 007 indicates unauthorized use of this road to access the following lakes is prohibited: Ahmabel, Frazer, Nagagmi and Pody Lakes.

2) Summary of Public Comments – TBD

NAGAGAMI ROAD – Branch Rd

LITTLE FRASER ROAD – Branch Rd

1) Proposed Corridors

a) Description:
Nagagami Road (4 km) branches off the Nagagami Road in Hiawatha Township west of Fraser Lake and a smaller unnamed lake to the north of Fraser Lake (both identified as remote tourism lakes). Little Fraser road also branches off the Nagagmi road and heads northeast towards Little Fraser River, Fraser Lake and West of Ahmabel Lake.

b) Rationale:
The proposed routes accesses 2021-2031 FMP harvest allocations situated west of Fraser Lake and east of the Little Fraser River.

c) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

Access:

Nagagami and Little Fraser Roads will be governed by the following access control signage:

- NAG 051, NAG 009, NAG 010, NAG 008 all indicating that the roads are closed to public vehicular travel from October to October_ (current year).
- NAG 062 indicates unauthorized use of this road to access the following lakes is prohibited: Ahmabel, Frazer, and Nagagmi Lakes.
- NAG 007 indicates unauthorized use of this road to access the following lakes is prohibited: Ahmabel, Frazer, Nagagmi and Pody Lakes.

2) Summary of Public Comments – TBD

KENOGAMI LUMBER OPERATIONAL ROAD BOUNDARIES

All Operational Road Boundaries (ORBs) that fall within the Kenogami Lumber Operational Road Network are listed in Table 8.

Table 8. Operational Road Boundaries within Kenogami Lumber Network

Operational Road Boundaries within Kenogami Lumber Road Network:	
Contingency Harvest	Lessard 170
	Lessard 171
	Lessard 174
	Lessard 176
	Lessard 178
	Nagagami 170
	Nagagami 171
	Wicksteed 170
Regular Harvest	Hiawatha 120
	Hiawatha 121
	Hiawatha 122
	Hiawatha 123
	Hiawatha 124
	Hiawatha 125
	Hiawatha 126
	Nagagami 120
	Wicksteed 120
	Wicksteed 121
	Wicksteed 129
	Wicksteed 132

1) Proposed Use Management Strategy for Kenogami Lumber Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water

crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme windstorms or precipitation).

Access Provision / Restrictions:

Table 99 lists all the operational road boundaries (ORBs) within the Kenogami Lumber Road Network and the associated access restrictions within each ORB. A description of the signage has been provided in Table 1010.

Table 9. Kenogami Lumber Network Access Restrictions

KENOGAMI LUMBER OPERATIONAL ROAD NETWORK ACCESS RESTRICTION SIGNAGE											
ORB Identifier:	**NAG-005**	**NAG-006**	**NAG-007**	**NAG-008**	**NAG-009**	**NAG-010**	**NAG-012**	**NAG-013A**	**NAG-013B**	**NAG-051**	**NAG-062**
Hiawatha 120	✓		✓	✓	✓						
Hiawatha 121	✓		✓	✓	✓						
Hiawatha 122	✓		✓	✓	✓						
Hiawatha 123	✓		✓	✓	✓					✓	
Hiawatha 124	✓		✓	✓	✓					✓	
Hiawatha 125	✓		✓	✓	✓	✓					
Hiawatha 126	✓		✓	✓	✓	✓					
Lessard 171											
Lessard 174											
Lessard 176							✓				
Lessard 178											
Lessard 179											
Nagagami 120	✓	✓									
Nagagami 170							✓				
Nagagami 171							✓				
Wicksteed 120											
Wicksteed 121											
Wicksteed 122											
Wicksteed 129											
Wicksteed 132											
Wicksteed 170											

Table 10. Description of each Access Restriction Sign Identifier within the Kenogami Lumber Road Network

Description of Access Control Signage within the Kenogami Lumber Operational Road Network:	
NAG-005	Use of this road to access the following lakes is prohibited from May 1st to October 21st: Nagagami, Ahmabel, Pody.
NAG-006	Access to Remote Tourism Lake (Nagagami) is prohibited all year.
NAG-007	Unauthorized use of this road to access the following lakes is prohibited: Nagagmi, Fraser, Ahmabel, Pody.
NAG-008	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-009	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-010	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-012	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-013A	Unauthorized use of this road to access the following lakes is prohibited: Bayfield, White Owl, McCoy, Buffalo Island, Granitehill, Obakamiga, Shekak.
NAG-013B	Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lessard, Linbarr.
NAG-051	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-062	Unauthorized use of this road to access the following lakes is prohibited: Bayfield, McCoy, Obakamiga, Shekak, Granitehill, White Owl.

Transfer / Future Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the West Multiple Resource Management Area (G1798) General Use Area. Land-use direction requires that:

"*All roads built and maintained in this area will be subject to applicable legislation, policies and guidelines. Consideration for environmental, recreational and tourism values will be given, particularly in the vicinity of identified tourism lakes and ecological values. Operating guidelines for the protection of such values will be reflected in the CLUAH Management Guidelines document.*"

The Operational Road Boundary referred to as **Hiawatha 121** also ever so slightly falls within the boundaries of the Designated Remote Tourism Lake AOC for Fraser Lake. Likewise, **Hiawatha 126** falls within the same AOC type for Ahmabel Lake. All new operational roads will be effectively decommissioned immediately after the completion of forestry activities (in individual harvest blocks / areas). Roads will be built to the lowest possible standard and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation. Refer to Supplementary Documentation 6.1 (q) – Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations for more information on road decommissioning.

2) Summary of Public Comments

No comments received.

3) Use Management Strategy for Operational Road Network

Same as proposed.

HORNEPAYNE CREEK ROAD NETWORK

NETWORK LOCATION

The Hornepayne Creek road network makes up the north eastern corner of the forest, following the management unit boundaries. It abuts to the Kenogami Lumber boundary, the White Owl network boundary to the south and HWY 631 to the east.

LAND USE

Primary road planning will follow the direction provided in the Crown Land Use Policy Atlas for West Multiple Resource Management General Use Area (G1798). The East and West Multiple Use Resource Management General Use Area were developed to promote and encourage multiple land use objectives while minimizing conflict between different uses. Special considerations have been made to further promote public access and recreational activities while maintaining strategies that protect the remote quality of designated remote tourism lakes and category A and B canoe routes. Existing public access and recreational uses will continue. Policies for the use of existing roads should maintain or enhance the recreation qualities in the area. Having regard for the land use intent, the most appropriate road system for both resource extraction and recreational uses will be developed. Road use will occur in accordance with the prescriptions listed. The control of road locations and their use will be managed to maintain acceptable levels of angling and hunting and other recreational uses. Identified tourism lakes will be managed to protect their remote quality and in accordance with Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Public access to existing and newly developed primary roads will be permitted.

The Hornepayne Creek road network contains the most kilometers of existing branch and operational roads within its boundaries (see Table 11). Many roads will be upgraded or extended as primary roads; North Foch Road, Hornepayne Creek Road, Mileage 17 Creek Road, Bobcat Road and Foch Road. Four new branch roads are also planned to be constructed within this network: Mask Road, Miriam Lake Road, Rangifer Road and Wicksteed Road.

Table 11. Existing Primary and Branch Roads within the Hornepayne Creek Road Network

Hornepayne Creek Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**88**
Adik Lake Road	5
Bay Lake Road	1
Bobcat Lake loop road	10
Buffalo Island Road	10
East Buffalo Island Lake Road	9
Foch Road	10
Government Road	7
HCR16-4	1
HCR16-5	1
Jay Lake Road	21
McCoy Lake Road	< 1
Mileage 17 Creek Road	5
North Foch Road	5
Vision Creek Road	3
Primary Roads	**52**
Becker Road	< 1
Gum Lake Road	4
HC-5	2
Hornepayne Creek Road	46
North Larkin Road	< 1
Grand Total	**140**

HORNEPAYNE CREEK – Primary Rd

1. Alternative corridors

This primary access route is intended to access eligible harvest area north of Granitehill Lake for the 2021-2031 planning period and beyond. This corridor was already planned for, reviewed, and approved as a primary road corridor in the 2006-2011 FMP. It was adjusted and reaffirmed for the 2011-2021 FMP and is now intended for reimplementation in the 2021-2031 FMP with no further alterations.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Hornepayne Creek – Alternative 1 of 1

The original proposed 11.5 km road extension originates from the existing Hornepayne Creek Road (at the extreme south end of the already constructed road) and proceeds southeast along a decommissioned operational road for 2 km. It then bends south and east for approximately 2.5 km, and finally southwest for 7.0 km. Two water crossings are present on the proposed road corridor (refer to OBM 62544). This version of the road corridor was approved for construction in the 2006-2011 FMP, however, no construction occurred during this period.

An 8.9 km extension of the Hornepayne Creek Road was approved in the 2011-2021 Phase 1 FMP. A total of 2.7 kilometres of primary road was partially constructed occurred during Phase 1 extending the road across a creek via water crossing #1253. During the planning of the 2011-2021 Phase 2 FMP, the road corridor was revised and moved north and west of a small lake avoiding water crossing #1252. The length was also shortened from 8.9 to 6.5 kilometres so that it would not join up with the proposed alternative (1 of 2) of the Miriam Lake Road. These changes were made to accommodate remote tourism values around Granitehill Lake and to shift the road north, further from Granitehill Lake.

b) Environmental Analysis:

i) Advantages and Disadvantages

Access for harvest, renewal and tending:
This road is planned to provide access for harvesting, hauling, and renewal operations in the north portion of Drew Township for the 2011-2021 planning period and beyond. This route takes full advantage of more favourable terrain and topography. Terrain conditions and drainage patterns that are in the vicinity of Miriam Lake Road make it impossible to access the area with a single road.

Potential effects on non-timber values:
This road has the potential to provide unauthorized access to resource-based tourism lakes within the area. There is a potential for the road to cause a loss of the perception of remoteness to the area north of Granitehill Lake and west of Obakamiga Lake.

Potential access to remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access Provision / Restrictions:

Hornepayne Creek Road will be governed by the following signage:

- Type 1 signage: Use of this road to access the following lakes is prohibited: Shekak, Buffalo island, Obakamiga, Granitehill, Bayfield, White Owl (sign NAG 030).
- Type 3 signage: 'Use of this road to access the following lakes is prohibited from May 1st and October 21st – Lessard and Linbarr (sign NAG 030).
- Type 4 signage: 'Road closed to public vehicular traffic from October ## to October ##, 20## inclusive', (sign identifier to be assigned at time of installation). As per the 2001-2006 FMP, the location of the sign is to be where Miriam Lake Road intersects the south boundary of block 559.

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs.

Maintenance:
General road maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually. Road monitoring will be ongoing during active operations.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 6.5 km long road is $690,000. This cost estimate is based upon conditions along the road corridor that were witnessed by Jackfish River Management Ltd through aerial assessments done during the spring of 2010. Terrain and topography conditions exhibited moderate to difficult conditions. Two water crossings were observed along the proposed extension. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed & Selected Corridor

a) Hornepayne Creek Road – Alt. 1 (see above description)
b) Rationale - This road has been planned reviewed and approved as a primary road corridor in the 2006-11 FMP. The Company intends to reimplement this corridor into the 2021-31 FMP with no alterations.
c) Use Management Strategy – Same as above.

5. Summary of Public Comments

TBD

6. Selected Corridor

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

BOBCAT ROAD – Primary Rd

1. Alternative corridors

The following proposed primary access routes are intended to provide a connection between Hornepayne Creek Road and Kenogami Lake Lumber Road. The alternatives for this connection will make use of existing branch road infrastructure on the Bobcat Lake Loop, where possible. These access routes are intended to provide an efficient connection between the Hornepayne Creek and Kenogami Lake Lumber road networks during the 2021-31 FMP and beyond.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Bobcat Road – Alt. 1 of 2

The Proposed road corridor would connect Kenogami Lake Lumber Road to Hornepayne Creek Road. The proposed area of construction will be 6.3 km in length and will involve upgrading 5.1 km of the Bobcat Lake Loop branch road to primary status. The remainder of the corridor will follow operational road infrastructure (where possible) until it meets Kenogami Lake Lumber Road.

b) Environmental Analysis

i) Advantages and disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road corridor will provide access for harvest, hauling, and renewal for areas between Kenogami Lake Lumber Road and Hornepayne Creek Road in Lessard township. It will also create a more efficient link between the Kenogami lake and Hornepayne creek road networks.

Potential effects on non timber values:
No anticipated affects on non timber values.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of Hornepayne Creek Road and Kenogami Lake Lumber road.

Kenogami Lake Lumber road:

- Kenogami Lake Lumber Road is not restricted. Sign in Lessard Twp, OBM 64545, protects the integrity of designated remote tourism lakes from unauthorized access by way of the Kenogami Lake Lumber Road System. Sign NAG 013.

Hornepayne creek Road:

- Hornepayne Creek Road restricted with sign type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Shekak, Buffalo Island, Obakamiga, Granitehill, Bayfield, White Owl. Sign NAG 030.
- Hornepayne Creek Road restricted with sign type 3 signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st – Lessard and Linbarr. Sign NAG 030.

These Road Use Management Strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on.

Maintenance:
General road maintenance on primary road infrastructure, including grading, ditching, brushing, surface treatment/dust control, gravelling / resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc. may be implemented.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 6.3 km long road is $276,500. This cost estimate is based on the kilometers of road upgrade and new road construction that will be required. This road corridor does not require any crossings. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

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a) Alternative corridor: Bobcat Road Alt. – Alt. 2 of 2

The alternative road corridor is 7.5 km in length and will involve upgrading 5.6 km of the Bobcat Lake Loop branch road to primary status and make use of an existing crossing that traverses Bobcat Creek. The final 1.5 kilometers before the corridor meets Kenogami lake lumber will follow the same as the preferred option.

Environmental Analysis

i) Advantages and Disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road corridor will provide access for harvest, hauling, and renewal for areas between Kenogami Lake Lumber Road and Hornepayne Creek Road in Lessard township. It will also create a more efficient link between the Kenogami Lake and Hornepayne Creek road networks.

Potential effects on non timber values:
Operational and branch roads in this area have been utilized as part of the Hornepayne Snowbears Snowmobile Club trail network for many years. It is imperative that the SFL works with the local Snowmobile Club to provide area for the snowmobilers to use adjacent to the road were road uses overlap.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of Hornepayne Creek Road and Kenogami Lake Lumber road.

Kenogami Lake Lumber road:
Kenogami Lake Lumber Road not restricted. Sign in Lessard Twp., OBM 64545, protects the integrity of designated remote tourism lakes from unauthorized access by way of the Kenogami Lake Lumber Road System (Sign NAG013).

Hornepayne Creek Road:
Hornepayne Creek Road restricted with sign type 1 signage: Unauthorized use of this road to access the following lakes is prohibited – Shekak, Buffalo Island, Obakamiga, Granitehill, Bayfield, White Owl. Sign NAG030.

Haken Lake Road:
Haken Lake Road restricted with sign type 3 signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st – Lessard and Linbarr. Sign NAG030.

These road use management strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on.

Maintenance:
Level 1: Maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 7.5 km long road is $337,500. This cost estimate is based on the number of kilometers of road upgrade and new construction that will be required. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Proposed Corridor

a) Bobcat Road (Alt. 1 of 2)
b) Rationale - This corridor is being proposed as the preferred alternative as it requires the least amount of new road construction and avoids the large water crossing associated with Alternative 2 of 2.

c) Use Management Strategy - Refer to the Use Management Strategy for Alt. Corridor 1 of 2 (Section 2 b) ii)).

4. Summary of Public Comments

Public comment was received during Stage-2 noting that the proposed road link is centered on operational/branch roads that have been utilized as part of the Hornepayne Snowbears Snowmobile Club trail network for many years. This is not noted in the analysis package, possibly due to the trail not being included in LIO. However, this trail has been brought to the attention of the lumber company and MNRF in December 2018. It follows Kenogami Road to Hornepayne Creek Road along the route indicated as the alternate route. If the Primary route is chosen there is approximately 1.5 km of overlap. Additionally, this will mean that approximately 7 km of trail to the North East of the proposed link will be plowed and utilized by the lumber company more regularly. This would create a significant barrier to this trail. The Hornepayne Snowbears Snowmobile Club is in favor of working with the SFL to create a trail on the side of the road.

5. Selected Corridor

TBD

6. Changes to a confirmed Primary Road Corridor Use Management Strategy

MILEAGE 17 CREEK ROAD – Primary Rd

1. Alternative corridors

This primary access route is intended to connect to the road network on the Big Pic Forest allowing forest products to flow the most efficient route to the receiving mill. It will also provide access to eligible harvest area in the north eastern portion of Foch township for the 2021-31 planning period and beyond.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Mileage 17 Creek Road - Alt. 1 of 1

The proposed road corridor will upgrade the branch road portion of Mileage 17 Creek Road and the operational road to the Big Pic Forest to primary. The location where Mileage 17 Creek Road starts will be moved 1.8 kilometres east of the current location off the Hornepayne Creek Road. The completed length will be 7.9 km and has 4 water crossing: 728, 729, 731 and 737. OBMs 63545 and 63546. This road corridor will connect to the road network on the Big Pic Forest allowing forest products to flow the most efficient route to the receiving mill.

b) Environmental Analysis:

i) Advantages and Disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road is planned to provide access for harvesting, hauling, and renewal operations in the northeastern portion of Foch Township for the 2021-2031 planning period and beyond. The road will connect to the Big Pic Forest creating the most efficient route to the receiving mill.

Potential effects on non timber values:
This road has the potential to provide unauthorized access to resource-based tourism lakes in the area. There is a potential for the road to cause a loss of the perception of remoteness to the area north of Linbarr Lake and Lessard Lake.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
Mileage 17 Creek Road is governed by the following signage:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Shekak, Buffalo Island, Obakamiga, Granitehill, Bayfield and White Owl (sign NAG 011A).
- Type 3 signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lessard and Linbarr (Sign NAG 011B).

These road use management strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on.

Maintenance:
General road maintenance to occur on primary road infrastructure, which includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 7.9 km long road is $510,000. This cost estimate is based upon conditions along the road corridor that were witnessed by Hornepayne Lumber through aerial assessments done during the summer of 2018. Terrain and topography conditions exhibited low to moderate difficulty; four water crossings with spans of less than 3 m could be established along the road corridor using corrugated steel pipe. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time,

it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

a) Mileage 17 Creek Road (Alt. 1 of 1)
b) Rationale - This road has been planned reviewed and approved as a primary road corridor in the 2011-2021 FMP. We intend to reimplement this corridor into the 2021-31 FMP with no alterations.
c) Use Management Strategy – Same as above

5. Summary of Public Comments

TBD

6. Selected Corridor

TBD

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

NORTH FOCH ROAD – Primary Rd

1. Alternative corridors

The proposed corridor is intended to access eligible harvest area in the northern portion of Foch township, northeast of the main channel of the Foch River.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: North Foch Road - Alt 1 of 1

The proposed corridor originates at the end of the North Foch Road (at approximately 630327E 5460601N) and extends north for 0.8 km, before heading west for 2.0 km. It crosses a stream and then heads northwest for 3.8 km. The estimated total completed length of this corridor is 6.6 km.

b) Environmental Analysis of Alternative Corridors

i) Advantages and disadvantages

<u>Provides access to areas eligible for harvest, renewal and tending operations</u>:
This road corridor will provide access for harvest, hauling, and renewal for areas in the north portion of Foch township, northeast of the Foch River.

Potential effects on non timber values:
The proposed corridor occurs within the discontinuous caribou travel corridor, which may compromise the habitat features which enable temporary occupancy of caribou (i.e. add extra sight lines for predators and fragment contiguous patches of forest).

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of the North Foch Road.

North Foch Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Shekak, Buffalo Island, Obakamiga, Granitehill, Bayfield, White Owl (sign NAG 030).
- Type 3 signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lessard and Linbarr (sign NAG 030).

These road use management strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on.

Maintenance:
General road maintenance on primary road infrastructure may occur which includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of construction of the 6.6 km long road is $342,000. This cost estimate is based on the number of water crossings and kilometers of new road construction that will be required. This road corridor requires a single water crossing that spans less than three meters. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

a) North Foch Road – Alt. 1
b) Rationale – Avoids difficult terrain (this was the only feasible route)
c) Use Management Strategy – Same as above

5. Summary of Public Comments

TBD

6. Selected Corridor

TBD

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

WICKSTEED ROAD – Branch Rd

1) Proposed Corridor

a) Description:
Wicksteed Road is approximately a 9 km route that will be constructed to branch north off Hornepayne Creek Road and through harvest allocations to the west of the community of Hornepayne.

b) Rationale:
To access harvest allocations southwest and northwest of the town of Hornepayne. This proposed route will divert log haul traffic from going through the town of Hornepayne or using Government Lake Road.

c) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

2) Summary of Public Comments

Many comments were received during Stage 3 public consultation regarding proposed forest operations that overlapped with the Buttercup Trails, a highly used recreational trail system by Hornepayne residents. The Planning Team has recognized this value for inclusion in the appropriate databases and to be represented on the values maps. Modifications have been made to the proposed harvest allocation and branch road corridor in the direct vicinity of the Buttercup Trail network. The Planning Team would like to use this time, during the implementation of this 10-year plan, to work with the community in developing a suitable area of concern prescription to protect this trail network in future forest management plans. Concerns have also been raised regarding log haul traffic using Government Lake Road. There is one instance where the planned route does cross over Government Lake Road, however this route was carefully planned to avoid haul truck travel directly through the community.

RANGIFER ROAD – Branch Road

1) Proposed Corridor

a) Description:
Rangifer Road (4.4 km) branches north off the Hornepayne Creek Road in Foch Township.

b) Rationale:
This route will utilize and upgrade existing roadbed from previously built operational roads to access harvest allocations west of a substantial drainage system and east of the Foch River.

c) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

Access:

Rangifer Road will be governed by the following signage:

- Type 1 signage: Use of this road to access the following lakes is prohibited: Shekak, Buffalo island, Obakamiga, Granitehill, Bayfield, White Owl (sign NAG 030).

- Type 3 signage: 'Use of this road to access the following lakes is prohibited from May 1st and October 21st – Lessard and Linbarr (sign NAG 030).
- Type 4 signage: 'Road closed to public vehicular traffic from October ## to October ##, 20## inclusive', (sign identifier to be assigned at time of installation). As per the 2001-2006 FMP, the location of the sign is to be where Miriam Lake Road intersects the south boundary of block 559.

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs.

2) Summary of Public Comments – TBD

MIRIAM LAKE ROAD – Branch Rd

MASK ROAD – Branch Rd

3) Proposed Corridors

d) Description:
Miriam Lake Road (4.1 km) and Mask Road (5.6 km) both branch off the Hornepayne Creek Road primary corridor in Foch Township west of Obakamiga Lake and north of Granitehill Lake (both identified as remote tourism lakes).

e) Rationale:
The proposed routes accesses 2021-2031 FMP harvest allocations situated north of Granitehill Lake in Foch Township.

f) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

Access:

Miriam Road and Mask Road will be governed by the following signage:

- Type 1 signage: Use of this road to access the following lakes is prohibited: Shekak, Buffalo island, Obakamiga, Granitehill, Bayfield, White Owl (sign NAG 030).

- Type 3 signage: 'Use of this road to access the following lakes is prohibited from May 1st and October 21st – Lessard and Linbarr (sign NAG 030).
- Type 4 signage: 'Road closed to public vehicular traffic from October ## to October ##, 20## inclusive', (sign identifier to be assigned at time of installation). As per the 2001-2006 FMP, the location of the sign is to be where Miriam Lake Road intersects the south boundary of block 559.

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs.

4) Summary of Public Comments - TBD

HORNEPAYNE CREEK OPERATIONAL ROAD BOUNDARIES (ORB)

All Operational Road Boundaries (ORBs) that fall within the Hornepayne Creek Operational Road Network are listed in Table 12.

Table 12. Operational Boundaries within Hornepayne Creek Network

Operational Road Boundaries within Hornepayne Creek Road Network:	
Contingency Harvest	Chelsea 170
	Drew 170
	Drew 171
	Drew 172
	Drew 173
	Drew 174
	Drew 175
	Drew 176
	Drew 177
	Drew 178
	Drew 179
	Drew 180
	Drew 181
	Drew 182
	Foch 170
	Foch 171
	Foch 172
	Foch 173
	Foch 174
	Foch 175
	Foch 176
	Foch 177
	Foch 178
	Foch 179
	Foch 180
	Foch 181
	Foch 182
	Foch 183
	Foch 184
	Foch 185
	Foch 186
	Foch 188
	Foch 189
	Foch 191
	Foch 192
	Foch 193
	Foch 194
	Foch 195
	Foch 196
	Foch 198
	Foch 199
	Foch 200
	Foch 201
	Foch 202
	Foch 203
	Lessard 172
	Lessard 173
	Lessard 179
	Wicksteed 172
Regular Harvest	Chelsea 120
	Chelsea 121
	Chelsea 122
	Chelsea 123
	Chelsea 124
	Chelsea 125
	Drew 120
	Drew 121
	Drew 122
	Drew 123
	Foch 120
	Foch 121
	Foch 122
	Foch 123
	Foch 124
	Foch 125
	Foch 126
	Lessard 120
	Wicksteed 122
	Wicksteed 171

1) Proposed Use Management Strategy for Hornepayne Creek Network Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme windstorms or precipitation).

Access Provision / Restrictions:

Table 133 lists operational road boundaries (ORBs) within the Hornepayne Creek Road Network that have an impact on access restrictions. The sign codes are described in Table 144.

Table 13. Access Restrictions for Operational Roads within the Hornepayne Creek Network

HORNEPAYNE CREEK OPERATIONAL ROAD NETWORK ACCESS RESTRICTION SIGNAGE										
ORB Identifier:	**NAG-011A**	**NAG-011B**	**NAG-026A**	**NAG-026B**	**NAG-028A**	**NAG-028B**	**NAG-030A**	**NAG-030B**	**NAG-031A**	**NAG-031B**
Chelsea 120					✓	✓	✓	✓	✓	✓
Chelsea 121					✓	✓	✓	✓	✓	✓
Chelsea 122					✓	✓	✓	✓	✓	✓
Chelsea 123					✓	✓	✓	✓	✓	✓
Chelsea 124			✓	✓	✓	✓	✓	✓	✓	✓
Chelsea 125					✓	✓				
Chelsea 170					✓	✓	✓	✓	✓	✓
Drew 172	✓	✓								
Drew 173	✓	✓								
Drew 174	✓	✓								
Drew 176										
Drew 179	✓	✓								
Drew 182										
Foch 124	✓	✓								

Table 14. Description of each Access Restriction Sign Identifier within the Hornepayne Creek Road Network

Description of Access Control Signage within the Hornepayne Creek Operational Road Network:	
NAG-011A	Unauthorized use of this road to access the following lakes is prohibited: Shekak, Bayfield, White Owl, Granitehill, Obakamiga, Buffalo Island.
NAG-011B	Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Linbarr, Lascelles.
NAG-026A	Unauthorized use of this road to access the following lakes is prohibited: Shekak, McCoy, White Owl, Bayfield.
NAG-026B	Closed to unauthorized vehicular traffic from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-028A	Unauthorized use of this road to access the following lakes is prohibited: Shekak, McCoy, White Owl, Bayfield.
NAG-028B	Closed to unauthorized vehicular traffic from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-030A	Use of this road to access the following lakes is prohibited: Granitehill, Obakamiga, Bayfield, Buffalo Island, White Owl, Shekak, McCoy.
NAG-030B	Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Linbarr, Lessard.
NAG-031A	Unauthorized use of this road to access the following lakes is prohibited: Buffalo Island, Granitehill, Obakamiga, McCoy, Shekak.
NAG-031B	Closed to unauthorized vehicular traffic from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).

Transfer / Future 1 Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the West Multiple Resource Management Area (G1798) General Use Area. Land-use direction requires that:

"*All roads built and maintained in this area will be subject to applicable legislation, policies and guidelines. Consideration for environmental, recreational and tourism values will be given, particularly in the vicinity of identified tourism lakes and ecological values. Operating guidelines for the protection of such values will be reflected in the CLUAH Management Guidelines document.*"

Operational Road Boundary referred to as **Lessard 172** for contingency harvest breaches the AOC barrier for Lessard Lake. If this area is required for harvest during this ten-year FMP, all new operational roads will be effectively decommissioned immediately after the completion of forestry activities (in individual harvest blocks / areas). Roads will be built to the lowest possible standard and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation. Refer to Supplementary Documentation 6.1 (q) – Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations for more information on road decommissioning.

2) Summary of Public Comments

No comments received to date.

3) Use Management Strategy for Operational Road Network

Same as proposed.

WHITE OWL ROAD NETWORK

NETWORK LOCATION

The White Owl road network is a smaller area with few existing primary and branch roads. It shares the same boundary as the Hornepayne Creek road network to the north, the forest management unit boundary to the south and uses Highway 631 as its boundary to the east. This network surrounds White Owl Lake and Bayfield Lakes.

LAND USE

Primary road planning will follow the direction provided in the Crown Land Use Policy Atlas for the Northeast Superior Recreation Access Area - E1771r. Recreation Enhanced Management Areas have been established to recognize the high potential of recreational values and activities within the area. Special considerations will be given to both promoting additional recreational access and protection of remote tourism values in the area as per Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Primary road development will be conducted in a strategic manner, with special considerations being given to promote recreational opportunities. Road management will occur in accordance with Area of Concern (AOC) prescriptions. Examples include but are not limited to tourism and recreation values such as Designated Tourism Lakes, Canoe Routes and Portages. Public access to existing and newly developed primary roads will be permitted.

Road 300 is a new primary road planned for construction and **Loon Lake Road** is a new branch road planned for construction. South Bayfield Lake Road is the main existing primary road in this network area (see Table 15).

Table 15. Existing Primary and Branch Roads within the White Owl Road Network

White Owl Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**4**
Beaton West Road	4
Primary Roads	**18**
Black Beaver Road	< 1
Breckenridge Road	< 1
South Bayfield Lake Road	11
White Owl Lake Road	7
Grand Total	**22**

ROAD 300 – Primary Rd

1. Alternative corridors

This road finishes a connection, via new construction on the White River Forest, of an off-highway route between the White River Sawmill and the Sawmill in Hornepayne. Once complete, the entire the portion of the route from Hwy 631 to Road 100 on the White River Forest will be renamed Road 300. This Corridor was planned reviewed and approved during the 2011-21 FMP planning period and is intended for reimplementation in the 2021-31 FMP with no alternations.

2. Environmental Analysis of Alternative Corridors

(a) Alternative corridor: 300 Road – Alternative 1 of 1

The proposed 17.9 km primary corridor includes existing portions of White Owl Lake Road and South Bay Field Lake Road (OBMs 64542, 65542 and 65543). There will be 1.9 km of operational road upgrade and 1.9 km of new road construction, which will head southeast from South Bayfield Road (at approximately 652081E 5431072N). The total completed length will be 21.7 km.

(b) Environmental Analysis:

(i) Advantages and disadvantages

<u>Provides access to areas eligible for harvest, renewal and tending operations:</u>
This road is planned to provide access for harvesting, hauling, and renewal operations in the southern portion of Bayfield Township for the 2021-2031 planning period and beyond. The road finishes a connection, via new construction on the White River Forest, of an off-HWY route between the White River sawmill and the sawmill in Hornepayne.

<u>Potential effects on non timber values:</u>
This road has the potential to provide unauthorized access to resource-based tourism lakes in the area. There is a potential for the road to cause a loss of the perception of remoteness to the area southeast of Bayfield Lake, Shekak Lake and White Owl Lake.
<u>Potential access to any remote Aboriginal communities which were previously inaccessible by road:</u>

Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:

Access signs will be placed at locations to ensure protection is achieved while the impact to legitimate public recreational opportunities is minimized. 300 Road will be posted with sign type 2 signage indicating that unauthorized use of this road to access the following lakes is prohibited: Bayfield, McCoy, Obakamiga, Shekak, Granitehill, White Owl (sign NAG025A). 300 Road will be closed to unauthorized public vehicular traffic from October ## to October ##, 20## inclusive (Sign NAG025B).

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs.

The number of new operational roads built off 300 Road and South Bayfield Lake Road will be kept to a minim and their construction will be to the lowest possible standard while still providing the Company with an efficient road network for forest management activities. Roads will be decommissioned using slash, boulder(s), berms, or a combination of techniques to make the road impassible by vehicular 4x4 traffic at or near the point of origin within one year of harvest, or within a timeframe otherwise approved by Wawa District MNRF. Roads no longer required for current forest operations that enter designated Remote Tourism lake AOCs will be decommissioned. The Company plans to renew areas harvested within the vicinity of Road 300 within one year of harvest through natural and artificial regeneration. At the same time operational roads will have water crossings removed. Artificial regeneration will be completed within 2 years of the completion of harvest.

Maintenance:

Level 1: Maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:

Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:

Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

Estimate Cost of Construction and Use Management:

The estimated cost of the construction of the 3.8 km long road is $150,000. This cost estimate is based upon conditions along the road corridor that were witnessed by Hornepayne Lumber through aerial assessments done during the summer of 2018. Terrain and topography conditions exhibited low to moderate difficulty; no water crossings are required. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future 1 phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

ROAD 300 (Alternative corridor 1 of 1)

a) Description: Refer to the above description of Alternative Corridor 1 of 1 (Section 2(b)). The proposed corridor is labelled as "300" on the summary map for proposed corridors for new primary and branch roads.
b) Use Management Strategy: This road has been planned reviewed and approved as a primary road corridor in the 2011-21 FMP. The Company intends to reimplement this corridor into the 2021-31 FMP with no alterations.
c) Rationale: This road has been planned reviewed and approved as a primary road corridor in the 2011-21 FMP. The Company intends to reimplement this corridor into the 2021-31 FMP with no alterations.

5. Summary of Public Comments

TBD

6. Selected Corridor

TBD

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

LOON LAKE ROAD – Branch Rd

1) Proposed Corridor

a) Description:
Loon Lake Road (10 km) is located on western boarder of Beaton Township and which is also the western border of the Nagagami Forest. It branches off HWY 631 and goes through the area east of Loon Lake.

b) Rationale:
To access 2021-2031 harvest allocations west of HWY 631 along the western border of the forest management unit.

c) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,

- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

2) Summary of Public Comments - TBD

WHITE OWL OPERATIONAL ROAD BOUNDARIES (ORB)

All Operational Road Boundaries (ORBs) that fall within the White Owl Road Network are listed in Table 16. It is noted that there are a few ORBs that do overlap with adjacent road Networks. Operational road boundaries will be clipped to align with Network boundaries to eliminate this overlap for final plan submission.

Table 16. Operational Road Boundaries within the White Owl Road Network

Operational Road Boundaries within White Owl Road Network:	
Contingency Harvest	Bayfield 170
	Beaton 170
	Beaton 171
	Beaton 178
Regular Harvest	Bayfield 120
	Bayfield 121
	Bayfield 122
	Bayfield 123
	Bayfield 124
	Bayfield 125
	Beaton 120
	Beaton 121
	Beaton 122
	Beaton 135
	Beaton 136
	Beaton 137
	Beaton 146
	Beaton 150
	Larkin 122
	Larkin 123
	Larkin 127
ORBs that overlap with Beaton/White Owl Road Networks:	
Regular Harvest	Beaton 123
	Beaton 125
	Beaton 133

1) Proposed Use Management Strategy for the White Owl Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme wind storms or precipitation).

Access Provision / Restrictions:

Table 137 lists operational road boundaries (ORBs) within the White Owl Road Network that contain or could potentially impact access restrictions. A description of the signage codes can be found in Table 188.

Table 17. Access Restrictions for Operational Roads within the White Owl Road Network

WHITE OWL OPERATIONAL ROAD NETWORK ACCESS RESTRICTION SIGNAGE						
ORB Identifier:	**NAG-002A**	**NAG-002B**	**NAG-003A**	**NAG-003B**	**NAG-025A**	**NAG-025B**
Bayfield 120					✓	✓
Bayfield 121					✓	✓
Bayfield 122					✓	✓
Bayfield 123						
Bayfield 124					✓	✓
Bayfield 125						
Bayfield 170					✓	✓
Beaton 120						
Beaton 121						
Beaton 122						
Beaton 123			✓	✓	✓	✓
Beaton 125						
Beaton 133						
Beaton 135						
Beaton 137						
Beaton 138	✓	✓				
Beaton 150						
Beaton 171						
Larkin 122						
Larkin 123						
Larkin 124						
Larkin 127						

Table 18. Description of each Access Restriction Sign Identifier within the White Owl Road Network

Description of Access Control Signage within the White Owl Operational Road Network:	
NAG-002A	Use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, Larkin, Bruce, East Nameigos.
NAG-002B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-003A	Unauthorized use of this road to access the following lakes is prohibited: Shekak, Obakamiga, Bayfield, McCoy, White Owl, Granitehill
NAG-003B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-025A	Unauthorized use of this road to access the following lakes is prohibited: Bayfield, McCoy, Obakamiga, Shekak, Granitehill, White Owl.
NAG-025B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).

Transfer / Future Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the Northeast Superior Recreation Access Area (E1771r) Enhanced Management Area. Land-use direction requires that resource management activities will be compatible with enhancing and maintaining the natural and recreational values of the area. The land use intent of this area is to promote and enhance opportunities for a diverse set of recreational activities for the benefit of communities located in the Wawa District. Priority will be given to activities that promote well planned access for enhanced recreational activities, community connectivity and improved resource use in the area. Promotion of a variety of recreational activities should be encouraged and enhanced. Roads, although discouraged, may be permitted for the purpose of access to natural resources through or between areas of operations on a forest management unit where

determined by the MNRF that there are no reasonable alternatives. Under these circumstances, the MNRF must be satisfied that the following conditions are met:

- The road built to the lowest possible standard.
- Lowest cost is not the sole or overriding justification.
- Tourism values have been considered and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation.

"*Policies for the use of new roads should maintain or enhance the recreation qualities. Having regard for the land use intent, the most appropriate road system for both resource extraction and recreational uses will be developed. Operating guidelines for the protection of recreational values will be reflected in the CLUAH Management Guidelines document.*"

2) Summary of Public Comments

No comments received.

3) Use Management Strategy for Operational Road Network

Same as proposed.

BEATON ROAD NETWORK

NETWORK LOCATION

The Beaton Road Network and the Kaby Road Network both use Haken Lake Road as their boundary. Highway 631 makes up the western border that is also shared with the White Owl network. The Breckenridge Road makes up the southern border

LAND USE

Primary road planning will follow the direction provided in the Crown Land Use Policy Atlas for the Northeast Superior Recreation Access Area - E1771r. Recreation Enhanced Management Areas have been established to recognize the high potential of recreational values and activities within the area. Special considerations will be given to both promoting additional recreational access and protection of remote tourism values in the area as per Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Primary road development will be conducted in a strategic manner, with special considerations being given to promote recreational opportunities. Road management will occur in accordance with Area of Concern (AOC) prescriptions. Examples include but are not limited to tourism and recreation values such as Designated Tourism Lakes, Canoe Routes and Portages. Public access to existing and newly developed primary roads will be permitted.

The Beaton area will be the hub of forest activity in this ten-year plan. There are three new primary roads planned within this network: **Lynx Road**, **Franx Road** and **Manx Road**. No new branch roads have been planned for within this network. Currently there's 32 km of branch roads within this network. Main existing primary roads include Haken Lake Road, Breckenridge Road, Black Beaver Road and South Larkin Road. See Table 19 for a complete list of primary and branch roads within the Beaton Road network.

Table 19. Existing Primary and Branch Roads within the Beaton Road Network

Beaton Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**32**
Baby Beaver Road	4
Lynx Road	15
Marten Road	10
West Lipton Road	3
Primary Roads	**68**
Black Beaver Road	13
Breckenridge Road	20
Breckenridge South Road	< 1
Haken Lake Road	22
North Larkin Road	3
South Larkin Road	10
White Owl Lake Road	< 1
Grand Total	**100**

LYNX ROAD – Primary Rd

1. Alternative corridors

The proposed road corridor is intended to provide a connection between the southernmost constructed portion of the Lynx Road and Breckenridge Road. This will provide more efficient access to the hub of forestry activity occurring in the Beaton Road Network and provide greater connectivity to the South Central zone where the mill is located for this ten-year plan and into the future.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Lynx Road – Alt. 1 of 2

The proposed road corridor will connect the constructed portion of the Lynx Road to Breckenridge Road, forming a 4-way intersection with the Breckenridge south road. The proposed area of construction will be 5.9 km in length and will follow existing operational road infrastructure where possible. The corridor will cross two water crossings. This preferred alternative is labelled as “Lynx Road” on the attached map.

b) Environmental Analysis:

i) Advantages and disadvantages

<u>Provides access to areas eligible for harvest, renewal and tending operations</u>:
This road corridor will provide access for harvest, hauling and renewal for areas between the southernmost point of the Lynx Road and Breckenridge Road. It will also provide a more efficient hauling route between the Beaton and South Central Networks.

<u>Potential effects on non timber values</u>:
No anticipated affects on non timber values.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The public access provisions and restrictions applied to the Lynx Road corridor will be consistent with those of Breckenridge Road and the portion of Lynx Road that is already built.

Lynx Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami, Kabinakagamisis, Breckenridge, Nameigos, East Nameigos, Bruce (signs: NAG 022 and NAG 002).
- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami. Road closed to unauthorized public vehicular traffic from October ## to October ##, 20## inclusive. (signs: NAG 034 and NAG 035). These roads do not affect travel on the Haken Lake Road, rather the restrictions are on tertiary roads that head east from the Haken Lake Road.
- Type 3 signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lascelles and Larkin Lake (signs: NAG 024 and NAG 023).
- Type 4 signage: Road closed to unauthorized public vehicular traffic from October ## to October ##, 20## inclusive (sign NAG 038). This is only sign of type 4 that, applies to the Haken Lake Road. The following Type 4 signs do not affect travel on the Haken Lake road, rather, the restrictions are on the tertiary roads that head east from the Haken Lake Road: NAG 037, NAG 052, NAG 053, NAG 054, NAG 055, NAG 056, NAG 057, NAG 058, NAG 059, NAG 060.

Breckenridge Road:

- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, Larkin, Bruce, East Nameigos. Road closed to unauthorized public vehicular traffic from October xx to October xx, 20xx, inclusive (sign NAG002).
- Other type 2 signage: Unauthorized use of this road to access the following lake is prohibited: Breckenridge, Nameigos, East Nameigos, Bruce. NAG033.

These road use management strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs. The status of traditional local winter fishery and hunting opportunities will continue.

Maintenance:
General road maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling / resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimated Costs of Construction and Use Management

The estimated cost of the construction of the 5.9 km long road is $206,000. This cost estimate is based on the number of water crossings and kilometers of new road construction that will be required. This road corridor will require two water crossings, neither of which will require a bridge installation. The corridor will take advantage of 3.5 km of existing operational road infrastructure. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

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a) Alternative Corridor: Lynx Road Alt – Alt. 2 of 2

The alternate corridor will proceed north from Breckenridge road to connect constructed portion of the Lynx Road, with a total completed length of 3.8 km. The corridor crosses a single water crossing.

b) Environmental Analysis:

i) Advantages and disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road corridor will provide access for harvest, hauling and renewal for areas between the southernmost point of the Lynx Road and Breckenridge Road. It will also provide a more efficient hauling route between the northern and southern portions of the South-Central Road Network.

Potential effects on non timber values:
No anticipated Affects on Non timber values

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The public access provisions and restrictions applied to the Lynx Road corridor will be consistent with those of Breckenridge Road and the Lynx Road.
Lynx Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami, Kabinakagamisis, Breckenridge, Nameigos, East Nameigos, Bruce (signs: NAG 022 and NAG 002).
- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami. Road closed to unauthorized public vehicular traffic from October ## to October ##, 20## inclusive. (signs: NAG 034 and NAG 035). These roads do not affect travel on the Haken

Lake Road, rather the restrictions are on tertiary roads that head east from the Haken Lake Road.

- Type 3 signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lascelles and Larkin Lake (signs: NAG 024 and NAG 023).
- Type 4 signage: Road closed to unauthorized public vehicular traffic from October ## to October ##, 20## inclusive (sign NAG 038). This type 4 sign applies only to Haken Lake Road. The following Type 4 signs do not affect travel on the Haken Lake road, rather the restrictions are on the tertiary roads that head east from the Haken Lake Road: NAG 037, NAG 052, NAG 053, NAG 054, NAG 055, NAG 056, NAG 057, NAG 058, NAG 059, NAG 060.

Breckenridge Road:

- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, Larkin, Bruce, East Nameigos. Road closed to unauthorized public vehicular traffic from October xx to October xx, 20xx, inclusive (sign NAG002).
- Other type 2 signage: Unauthorized use of this road to access the following lake is prohibited: Breckenridge, Nameigos, East Nameigos, Bruce (sign NAG033).

These road use management strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs. The status of traditional local winter fishery and hunting opportunities will continue.

Maintenance:
Level 1: Maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 3.8 km long road is $371,000. This cost estimate is based on the number of water crossings and kilometers of new road construction that will be required. This road corridor includes a single water crossing (XXXX) which will likely require a bridge installation. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

a) Lynx Road – Alt. 1
b) Rationale - This route is physically longer than Alt. 2, but it is the more economic option as it does not require the installation of a crossing that spans more than 3 meters. It also forms a 4-way intersection with the Breckenridge road and Breckenridge south road, which would be ideal as it creates an efficient connection between these roads and the Lynx Road.
c) Use Management Strategy - Refer to the Use Management Strategy for Alternative Corridor 1 of 2 (Section 2(c)).

5. Summary of Public Comments

TBD

6. Selected Corridor

TBD

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

Manx Road – Primary Rd

1. Alternative corridors

This primary access route is intended to link Haken Lake Road to Marten Road by upgrading and adding to the currently constructed portion of the Lynx Road, providing an efficient hauling route between these two roads. This corridor road was planned, reviewed, and implemented as a branch road in the 2006 FMP and was reaffirmed for the 2011-2021 FMP. 14.8 km this road was built during the 2006-2011 and 2011-2021 FMPs.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Lynx-Marten Link Road - Alt. 1 of 1

The proposed corridor involves upgrading portions of the Lynx Road from branch road to primary and altering the original layout. Specifically, the new layout will follow the same path as the old corridor but will stop short of the final stream crossing and will not cross water crossing #1249. The road will feature a 'T-junction' at approximately 17.6 km, which will be used to connect to the Marten Road. This connection will make use of existing operational road infrastructure where possible and will require 2 new water crossings. The road will continue northeast for 5.2 km beyond this 'T' junction to access eligible harvest area south of the Beaton river. In total, this road corridor will require approximately 10.6 km of road construction to complete the corridor as mapped.

b) Environmental Analysis:

i) Advantages and disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:

This road corridor will provide access for harvest, hauling, and renewal for areas in the southeast portion of Beaton township.

Potential effects on non timber values:
No anticipated affects on non timber values.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The public access provisions and restrictions applied to the Lynx-Marten Link Road will be consistent with those of Haken Lake Road.

Haken Lake Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, East Nameigos, Larkin, and Bruce (signs: NAG002A and NAG022).

3. Summary of Public Consultation

TBD

4. Proposed Corridor

a) Lynx-Marten Link Road - Alt. 1 of 1
b) Rationale – This road corridor will provide access for harvest, hauling, and renewal for areas in the southeast portion of Beaton township and will make use of existing operational road infrastructure where possible.
c) Use Management Strategy – Same as above.

5. Summary of Public Comments

TBD

6. Selected Corridor

TBD

7. Changes to a Confirmed Primary Road Use Management Strategy

Franx Road – Primary Rd

1. Alternative corridors

This primary access route is intended to access merchantable timber in the heart of the Beaton Road Network. Franx Road is a route that runs approximately 5 km northeast from Manx Road, also a primary road to be constructed during the implementation of this 10-year plan.

2. Environmental Analysis of Alternative Corridors

c) Alternative corridor: Franx Road - Alt. 1 of 1

No new water crossings are required. This road corridor runs adjacent to Beaton River that flows approximately 300 meters from the outer edges of this 1 km road corridor.

d) Environmental Analysis:

iii) Advantages and disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road corridor will provide access for harvest, hauling, and renewal for areas in the centre of the Beaton Network.

Potential effects on non timber values:
No anticipated affects on non timber values.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

iv) Use Management Strategy

Access:
The public access provisions and restrictions applied to the Franx Road will be consistent with those of Haken Lake Road.

Haken Lake Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, East Nameigos, Larkin, and Bruce (signs: NAG 002A and NAG 022).

3. Summary of Public Consultation

No comments received to date.

4. Proposed Corridor

d) Franx Road - Alt. 1 of 1
e) Rationale – This road corridor will provide access for harvest, hauling, and renewal for areas in the southeast portion of Beaton township and will make use of existing operational road infrastructure where possible.

f) Use Management Strategy – Same as above.

5. Summary of Public Comments

No comments received to date.

6. Selected Corridor

TBD

7. Changes to a Confirmed Primary Road Use Management Strategy

BEATON OPERATIONAL ROAD BOUNDARIES (ORB)

All Operational Road Boundaries (ORBs) that fall within the Beaton Operational Road Network are listed in Table 20. It is noted that there are a few ORBs that do overlap with adjacent Road Networks. Operational road boundaries will be clipped to align with Network boundaries to eliminate these overlapping ORBs for final plan submission.

Table 20. Operational Road Boundaries within the Beaton Road Network

Operational Road Boundaries within Beaton Road Network:	
Contingency Harvest	Beaton 174
	Beaton 175
	Beaton 176
	Beaton 177
Regular Harvest	Beaton 124
	Beaton 126
	Beaton 127
	Beaton 128
	Beaton 129
	Beaton 130
	Beaton 131
	Beaton 132
	Beaton 134
	Beaton 139
	Beaton 140
	Beaton 141
	Beaton 142
	Beaton 143
	Beaton 144
	Beaton 145
	Beaton 147
	Beaton 148
	Beaton 149
	Beaton 172
	Beaton 173
	Breckenridge 121
	Breckenridge 129
	Larkin 124
	Larkin 125
	Larkin 126
	Larkin 129
	Lipton 120
	Lipton 121
	Lipton 127
	Lipton 128
	Lipton 130
ORBs that overlap with Beaton/Nameigos Road Networks:	
Regular Harvest	Beaton 138
	Breckenridge 120
ORBs that overlap with Beaton/White Owl Road Networks:	
Regular Harvest	Beaton 123
	Beaton 125
	Beaton 133

1) Proposed Use Management Strategy for the Beaton Road Network Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme wind storms or precipitation).

Access Provision / Restrictions:

Access restrictions that appear to effect operational road boundaries (ORBs) within the Beaton Road Network are identified in Table 21. A description of the signage has been provided in Table 222.

Table 21. Access Restrictions for Operational Road Boundaries within the Beaton Network

BEATON OPERATIONAL ROAD NETWORK ACCESS RESTRICTION SIGNAGE				
ORB Identifier:	**NAG-033A**	**NAG-033B**	**NAG-024**	**NAG-023**
Beaton 126				✓
Beaton 129				✓
Larkin 126				✓
Larkin 128				
Larkin 129			✓	
Lipton 121	✓	✓		

Table 22. Description of Access Control Signage within the Beaton Operational Road Network.

Description of Access Control Signage within the Beaton Operational Road Network:	
NAG-023	Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Larkin, Lascelles.
NAG-024	Use of this road to access the following lakes is prohibited from May 1st to October 21st: Larkin, Lascelles.
NAG-033A	Use of this road to access the following lakes is prohibited: Breckenridge.
NAG-033B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).

Transfer / Future Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the Northeast Superior Recreation Access Area (E1771r) Enhanced Management Area. Land-use direction requires that resource management activities will be compatible with enhancing and maintaining the natural and recreational values of the area. The land use intent of this area is to promote and enhance opportunities for a diverse set of recreational activities for the benefit of communities located in the Wawa District. Priority will be given to activities that promote well planned access for enhanced recreational activities, community connectivity and improved resource use in the area. Promotion of a variety of recreational activities should be encouraged and enhanced. Roads, although discouraged, may be permitted for the purpose of access to natural resources through or between areas of operations on a forest management unit where determined by the MNRF that there are no reasonable alternatives. Under these circumstances, the MNRF must be satisfied that the following conditions are met:

- The road built to the lowest possible standard.
- Lowest cost is not the sole or overriding justification.
- Tourism values have been considered and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation.

"*Policies for the use of new roads should maintain or enhance the recreation qualities. Having regard for the land use intent, the most appropriate road system for both resource extraction and recreational uses will be developed. Operating guidelines for the protection of recreational values will be reflected in the CLUAH Management Guidelines document.*"

The operational road boundaries for **Larkin 121**, **Larkin 125** and **Larkin 130** all breach into the border of the Designated Remote Tourism Lake AOC for Larkin Lake where all new operational roads will be effectively decommissioned immediately after the completion of forestry activities (in individual harvest blocks / areas). Roads will be built to the lowest possible standard and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation. Refer to Supplementary Documentation 6.1 (q) – Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations for more information on road decommissioning.

2) Summary of Public Comments

No comments received.

3) Use Management Strategy for Operational Road Network

Same as proposed.

KABY ROAD NETWORK

NETWORK LOCATION

The Haken Lake Road makes up the western border of the Kaby Road network and Kabinakagami Lake makes up the eastern boundary. It buts up to the South Central network that is north of Kabinakagamisis Lake.

LAND USE

Primary road planning will follow the direction provided in the Crown Land Use Policy Atlas for the East Multiple Resource Management General Use Area (G1787). The East and West Multiple Use Resource Management General Use Area were developed to promote and encourage multiple land use objectives while minimizing conflict between different uses. Special considerations have been made to further promote public access and recreational activities while maintaining strategies that protect the remote quality of designated remote tourism lakes and category A and B canoe routes. Primary activities and uses include Crown land recreation, forest management, mineral exploration and extraction, commercial power development, hunting, fishing, camping, tourism, and various other commercial and recreational activities. The renewable resources in this area will continue to be managed on a sustained yield basis. Identified tourism lakes will be managed to protect their remote quality and in accordance to Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Public access to existing and newly developed primary roads will be permitted.

Kabinakagamisis Lake and Kabinakagami (Kaby) Lake are Designated Remote Tourism Lakes within this network in which MNRF has a mandate to develop prescriptions. Visual and auditory evidence of *Forestry* and *Industrial* activities within the *viewshed* of these lakes will be minimized. Currently during the first two weeks of the moose gun hunt public motorized access is restricted on several roads near *Designated Remote Tourism Lakes*. Specific plans for road decommissioning will be established in conjunction with the MNRF within 2 km of Kabinakagami Lake and within 1 km of Kabinakagamisis Lake.

Moose Emphasis Areas (MEAs)

Moose Emphasis Area number one, an area of approximately 10, 432 hectares, is contained within this road network and for the most part overlaps with the Designated Remote Tourism Area of Concern (AOC) Prescriptions (please refer to Table FMP-11 for details). However, it is realized that in some instances the MEA does extend beyond the AOC prescription and specific road use management strategies will be applied. This MEA also almost fully encompasses Kabinakagamisis Lake except for a small bay in the northwest corner of the lake. Access control measures for operational roads falling within this area will be applied through road decommissioning strategies. Strategies such as ditching, berming, slash piling and water crossing removals will be implemented to limit future use of the road by 4X4 trucks.

Shamrock North Road and **Soup Road** are two new branch roads to be constructed northwest of Kabinakagami Lake. The main existing primary road is the Haken Lake Road that makes up the western boundary to this network (see Table 233 for complete listing of existing primary and branch roads).

Table 23. Existing Primary and Branch Roads within the Kaby Road Network

Kaby Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**7**
East Lipton Road	3
Shamrock North Road	4
Primary Roads	**30**
Haken Lake Road	23
Lascelles Road	5
Mosambik Road	1
SC16-239	1
Grand Total	**37**

SHAMROCK NORTH ROAD – Branch Rd

1. Alternative corridors

This primary access route is intended to provide access to eligible harvest area in Lipton Township for the 2021-31 planning period and beyond. This corridor was planned reviewed and approved as a branch road corridor in the 2011-21 FMP and is intended for reimplementation in the 2021-31 FMP with some alterations (detailed below).

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Shamrock North Road – Alt. 1 of 1

The corridor proceeds Northeast from the junction of the Haken Lake Road for approximately 4 km before heading north. The original corridor crossed water crossing 1132 and was planned to cross the Shamrock creek at crossing 1249, however the upgraded version will be shortened to 5.0 km from its original length of 7.9 km, so this crossing will no longer be required. 4.2 km of this corridor has been constructed in previous planning periods. This road corridor is currently classified as a branch road in the 2011-21 FMP and will be upgraded to a primary road for the 2021-31 FMP.

b) Environmental Analysis:

i) Advantages and disadvantages

<u>Provides access to areas eligible for harvest, renewal and tending operations</u>:
This road is planned to provide access for harvesting, hauling, and renewal operations in Lipton Township. The original version of this road provided access to area north of the Shamrock river in the Northwest part of Lipton Township, however this has been removed to avoid crossing the same stream system multiple times.

<u>Potential effects on non timber values</u>:
No anticipated affects on non-timber values.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of Haken Lake Road.

Haken Lake Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, East Nameigos, Larkin, and Bruce (signs: NAG 002A and NAG 022).
- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami. Road closed to unauthorized public vehicular traffic from October ## to October ## inclusive' (signs: NAG 034 and NAG 035). These signs do not affect the travel on the Haken Lake Road, rather the restrictions are on the tertiary roads that head east from the Haken lake Road.
- Type 3 Signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lascelles and Larkin Lakes' (signs: NAG 023 and NAG 024).
- Type 4 Signage: Road closed to unauthorized public vehicular traffic from October ## to October ##, inclusive' (sign NAG 038). This is the only sign of type 4 that applies to the Haken Lake Road. The following type 4 signs do not affect travel on the Haken Lake Road, rather, the restrictions apply to the tertiary roads that head east from the Haken Lake Road: NAG 052, NAG 053, NAG 054, NAG 055, NAG 056, NAG 057, NAG 058, NAG 059, NAG 060.

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs. The status of traditional local winter fishery and hunting opportunities will continue.

Maintenance:
General maintenance on primary road infrastructure may occur which includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 5.0 km long road is $119,750. This cost estimate is based on the number of kilometers of road upgrade and new road construction that will be required. Water

crossing 1132, has already been constructed. No additional crossings will be required. Road maintenance costs are anticipated to be reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

a) Shamrock North Road – Alt. 1
b) Rationale - This road has been planned reviewed and approved as a branch road corridor in the 2011-21 FMP. The company intends to upgrade this road to primary status, and reimplement it into the 2021-31 FMP with the alterations described above.
c) Use Management Strategy – Same as above.

5. Summary of Public Comments

No comments received to date.

6. Selected Corridor

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

SOUP ROAD – Branch Road

1) Proposed Corridor

a) Description:
Soup Road (6.6 km) branches southeast off the Shamrock North Road (listed in the primary road corridors).

b) Rationale:
The proposed route accesses 2021-2031 FMP harvest allocations situated in the area west of Kabinakagami and Kabinakagamisis Lakes which have been identified as remote tourism lakes.

c) Use Management Strategy:
Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

2) Summary of Public Comments - TBD

KABY OPERATIONAL ROAD BOUNDARIES (ORB)

Listed in Table 24 are the Operational Road Boundaries (ORBs) that fall within the North Central Operational Road Network. It is noted that there are a few ORBs that do overlap with adjacent road Networks. Operational road boundaries will be clipped to align with Network boundaries to eliminate these overlapping ORBs for final plan submission.

Table 24. Operational Road Boundaries within the Kaby Road Network

Operational Road Boundaries within Kaby Road Network:	
Contingency Harvest	Lipton 170
Regular Harvest	Lipton 123
	Lipton 124
	Lipton 125
ORBs that overlap with South Central/Kaby Road Networks:	
Contingency Harvest	Woolrich 171
Regular Harvest	Lascelles 137
	Lascelles 138
	Lipton 129
	Woolrich 120

1) Proposed Use Management Strategy for the Kaby Road Network Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such

as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme windstorms or precipitation).

Access Provision / Restrictions:

Access restrictions that may impact operational road boundaries (ORBs) within the Kaby Road Network have been identified in Table 25. A description of the signage has been provided in Table 266.

Table 25. Access Restrictions on Operational Road Boundaries within the Kaby Road Network

KABY OPERATIONAL ROAD NETWORK ACCESS RESTRICTION SIGNAGE									
ORB Identifier:	**NAG-014**	**NAG-015**	**NAG-016**	**NAG-017**	**NAG-018**	**NAG-032**	**NAG-034A**	**NAG-034B**	**NAG-060**
Lascelles 137				✓	✓				
Lascelles 138	✓	✓	✓	✓					
Lipton 125						✓			
Lipton 170						✓			
Lizar 120							✓	✓	✓
Woolrich 120		✓	✓						
Woolrich 171	✓								

Table 26. Description of Access Restriction Sign Identifiers within the Kaby Road Network

Description of Access Control Signage within the Kaby Operational Road Network:	
NAG-014	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-015	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-017	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-018	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-032	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-034A	Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami.
NAG-034B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-035A	Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami.
NAG-035B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-052	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-053	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-054	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-055	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-056	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-057	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-058	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-059	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-060	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).

Transfer / Future Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the East Multiple Resource Management Area (G1787) General Use Area. Land-use direction requires that:

"*All roads built and maintained in this area will be subject to applicable legislation, policies and guidelines. Consideration for environmental, recreational and tourism values will be given, particularly in the vicinity of identified tourism lakes and ecological values. Operating guidelines for the protection of such values will be reflected in the CLUAH Management Guidelines document.*"

In addition to land use policy direction there are also requirements for roads within Moose Emphasis Areas. Road deactivation strategies to limit access by 4x4 vehicles will be used in specific locations. For more information regarding Moose Emphasis Areas, refer to the detailed subdocument that is provided within the Supplementary Documentation. A list of Operational Road Boundaries that intersect with MEA#1 is shown in Table 277.

Table 27. Kaby Operational Road Boundaries Intersecting with Moose Emphasis Area #1

Kaby Road Network Operational Road Boundaries (ORBs) within Moose Emphasis Area #1	
Contingency Harvest	Lipton 170
	Woolrich 171
Regular Harvest	Lascelles 137
	Lascelles 138
	Lipton 123
	Lipton 124
	Lipton 125
	Lipton 129
	Lizar 120

Operational Road Boundaries referred to as **Lipton 123**, **Lipton 124**, **Lipton 125, Lipton 170, Lizar 120,** and **Lascelles 137,** also enter the Designated Remote Tourism Lake AOC for Kabinakagami and Kabinakagamisis Lakes. All new operational roads will be effectively decommissioned immediately after the completion of forestry activities (in individual harvest blocks / areas). Roads will be built to the lowest possible standard and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation for the remote tourism industry. Refer to Supplementary Documentation 6.1 (q) – Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations for more information on road decommissioning.

2) Summary of Public Comments
No comments received.

3) Use Management Strategy for Operational Road Network
Same as proposed.

NAMEIGOS ROAD NETWORK

NETWORK LOCATION

The Nameigos road network area is situated in the southwestern corner of the management unit and is adjacent to the White River Forest to the west and the Magpie Forest to the south. The boundary to the east follows the land use policy boundary line until it meets up with Haken Lake Road. From this point travelling north, Haken Lake Road makes up most of the eastern boundary and Breckenridge Road makes up the northern boundary.

LAND USE

Primary road planning will follow the direction provided in the Crown Land Use Policy Atlas for the Northeast Superior Recreation Access Area - E1771r. Recreation Enhanced Management Areas have been established to recognize the high potential of recreational values and activities within the area. Special considerations will be given to both promoting additional recreational access and protection of remote tourism values in the area as per Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Primary road development will be conducted in a strategic manner, with special considerations being given to promote recreational opportunities. Road management will occur in accordance with Area of Concern (AOC) prescriptions. Examples include but are not limited to tourism and recreation values such as Designated Tourism Lakes, Canoe Routes and Portages. Public access to existing and newly developed primary roads will be permitted.

Moose Emphasis Areas (MEAs)

This primary corridor runs through Moose Emphasis Area (MEA) #2, an area of approximately 7, 062 hectares on the western border of the forest management unit and north of Nameigos Lake. Access control measures for operational roads falling within this area will be applied through road decommissioning strategies. Please refer to the Conditions on Operations for more information on road decommissioning.

Breckenridge South road is the only new primary road planned for construction. Additionally, there are two new branch roads planned for construction, **Stoney Creek Road** extension and **Whitehorse Road**. The 2011-2021 FMP recently went through the amendment process to incorporate a new branch road corridor for Whitehorse Road in the 2017-2021 Phase 2 operating plan. The Breckenridge south road extension ends just after water crossing 1242. These newly planned routes will divert potential public access issues from Nameigos lake. Haken Lake Road and Breckenridge Roads provide most of the existing access into the area (for a complete listing of existing primary and branch roads see Table 288).

Table 28. Existing Primary and Branch Roads within the Nameigos Road Network

Nameigos Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**17**
Midway Road	8
North Nameigos Road	2
Stoney Creek Road	7
Primary Roads	**47**
Breckenridge Road	20
Breckenridge South Road	8
Haken Lake Road	18
Mosambik Road	1
Grand Total	**64**

BRECKENRIDGE SOUTH – Primary Rd

Land Use Direction:

1) Alternative corridors

This primary access route is intended to access eligible harvest area west of Nameigos Lake for the 2021-31 planning period and beyond. This corridor was planned, reviewed, and approved as a primary road corridor in the 2011-21 FMP, and is intended for reimplementation in the 2021-31 FMP with no alterations.

2) Environmental Analysis of Alternative Corridors

a) Alternative Corridor: Breckenridge South Road – Alternative 1 of 1

The proposed road extension proceeds south from the existing Breckenridge South Road for 9.6 km and crosses water crossings 1243, 1244, and 1245. The east edge of the 1000 m wide road corridor does not come within 2,000 m of the west shore of Nameigos Lake.

b) Environmental Analysis:

i) Advantages and Disadvantages

Access for harvest, renewal & tending:
This road is planned to provide access for harvesting, hauling, and renewal operations in the western portion of Breckenridge township for the 2021-2031 planning period and beyond.

Potential effects on non timber values:
This road has the potential to provide unauthorized access to resource-based tourism lakes in the area. There is a potential for the road to cause a loss of the perception of remoteness to the area west of Nameigos Lake.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of Breckenridge South Road.

The following signage will be posted on Breckenridge South Road as per Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines:

- Use of road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, East Nameigos, Larkin, and Bruce (sign NAG 002A).
- Road to be closed to public vehicular traffic from October ## to October ##, 20##, inclusive' (sign NAG 002B).
- Use of road to access the following lakes is prohibited: Breckenridge, Nameigos, East Nameigos, Bruce Lake (sign NAG 033A).
- Road closed to public vehicular traffic from October ## to October ##, 20##, inclusive (sign NAG 033B).

The road use management strategy signs NAG002 and NAG033 are posted on the Breckenridge Road to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs.

Maintenance:
Level 1: Maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of construction of the 9.6 km long road is $510,000. This cost estimate is based upon conditions along the road corridor that were witnessed by Jackfish River Management Ltd. through aerial assessments done during the fall of 2009. Terrain and topography conditions exhibited low to moderate difficulty; three water crossings with spans of less than 3 m could be established along the road corridor using corrugated steel pipe. Road maintenance costs are anticipated as being reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3) Summary of Public Comments

TBD

4) Proposed Corridor

a) Breckenridge South Road (Alt. 1 of 1) - Refer to description provided in previous section.
b) Rationale - This road has been planned for, reviewed, and approved as a primary road corridor in the 2011-2021 FMP. The Company intends to reimplement this corridor into the 2021-2031 FMP with no alterations.
c) Use Management Strategy – Same as above (see section 2(b)(ii)).

5) Summary of Public Comments

TBD

6) Selected Corridor

TBD

7) Changes to a confirmed Primary Road Corridor Use Management Strategy

STONEY CREEK – Branch Rd

This primary corridor is adjacent to the north east portion of Moose Emphasis Area (MEA) #2, an area of approximately 8, 000 hectares on the western border of the forest management unit and north of Nameigos Lake. Access control measures for operational roads falling within this area will be applied through road decommissioning strategies.

1. Alternative corridors

The Proposed primary access route will provide access to eligible harvest area in the southern portion of Breckenridge Township. This road corridor is currently classified as a branch road in the 2011-21 FMP and will be upgraded to a primary road for the 2021-31 FMP, with no alterations. This road was approved for construction in phase 1 of the 2011-21 FMP but has yet to be constructed.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Stoney Creek – Alt. 1 of 1

This proposed 5.7 km long road proceeds in a southwest direction from the existing Stoney Creek Road, south of Breckenridge Lake. The road proceeds towards Nameigos Lake and ends 2 km from the shore of Nameigos Lake.

b) Environmental Analysis:

i) Advantages and disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road is planned to provide access for timber harvesting and renewal operations in the south portion of Breckenridge Township, due south of Breckenridge Lake.

Potential effects on non timber values:
This road has the potential to provide access into the area for members of the public who may want to take advantage of the non timber resources in the area.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of the Stoney Creek Road.

Stoney Creek Road:

- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, East Nameigos, Larkin, and Bruce (sign NAG002A). Road closed to unauthorized public vehicular traffic from October xx to October xx, 20xx, inclusive (sign NAG002B). Unauthorized use of this road to access the following lakes is prohibited: Breckenridge, Bruce, Nameigos, East Nameigos. NAG033A. Road closed to unauthorized public vehicular traffic from October xx to October xx, 20xx, inclusive. NAG033B.

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs. The status of traditional local winter fishery and hunting opportunities will continue.

Maintenance:
General maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 5.7 km long road is $256,500. This cost estimate is based on the number of kilometers of new road construction that will be required. This corridor does not

require any water crossings. Road maintenance costs are anticipated to be reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

a) Stoney Creek Road – Alt. 1
b) Rationale - The original layout of this corridor was planned, reviewed, and approved as a branch road in the 2011-2021 FMP. The Company would like to upgrade this road to primary status and reimplement it in the 2021-2031 FMP with no alterations.
c) Use Management Strategy – Same as above.

5. Summary of Public Comments

Ongoing conversations occurred between Hearst Forest Management Inc. (HFMI), First Resource Management Group Inc. (FRMG) and the Ministry of Natural Resources and Forestry (MNRF) during Stage-2 and Stage-3 of the Nagagami Forest Management Plan (FMP). Pichogen Road was initially given Branch Road status but has since been reclassified as a Primary Road. Rationale is that this 20-year road is to be constructed in this FMP to access areas in the Hearst 2027-2037 Forest Management Plan. Also, the balance of the Pichogen Road corridor on the Hearst Forest was already approved as a Primary Road following the various stages of public consultation required during that planning process.

6. Selected Corridor

TBD

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

WHITEHOURSE ROAD – Branch Road

1) Proposed Corridor

a) Description:
This corridor originates on the White River Forest at Ontario Highway 631 and continues onto the Nagagami Forest for approximately 5 km before terminating at the 0-1500 m ‘noise control’ zone at the Southwest corner of Nameigos lake.

b) Rationale:
This corridor is intended to alter the hauling route of the Breckenridge South Road Extension. This adjustment will shorten the length of Breckenridge South Road Extension and introduce a new branch road corridor from the White River Forest. This link is intended to alter the Breckenridge South Road Extension (as planned in the 2017-2021 phase 2 operating plan) which accesses fibre in the southwest corner of Nameigos township. Fibre will now flow west to

highway 631 via the White River Forest, as opposed to going north to Breckenridge road then west to highway 631, as originally intended. The Breckenridge south road extension will be altered to terminate after crossing 1242, which has the advantage of removing road pressure from remote tourism operators on Nameigos lake.

c) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

Access Provision/Restrictions:

Road planning will follow the direction provided in the Crown Land Use Policy Atlas for the East Multiple Resource Management General Use Area (G1787). Identified tourism lakes will be managed to protect their remote quality and in accordance to Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Public access to existing and newly developed primary roads will be permitted.

NAMEIGOS OPERATIONAL ROAD BOUNDARIES (ORB)

All Operational Road Boundaries (ORBs) that fall within the Nameigos Operational Road Network are listed in Table 29. It is noted that there are a few ORBs that do overlap with adjacent Road Networks. Operational road boundaries will be clipped to align with Network boundaries to eliminate these overlapping ORBs for final plan submission.

Table 29. Operational Road Boundaries within the Nameigos Road Network

Operational Road Boundaries within Nameigos Road Network:	
Contingency Harvest	Breckenridge 170
	Breckenridge 171
	Breckenridge 174
	Breckenridge 175
	Nameigos 170
	Regular Harvest
Regular Harvest	Breckenridge 122
	Breckenridge 123
	Breckenridge 124
	Breckenridge 125
	Breckenridge 126
	Breckenridge 127
	Breckenridge 128
	Breckenridge 130
	Breckenridge 131
	Breckenridge 132
	Breckenridge 133
	Breckenridge 172
	Nameigos 120
	Nameigos 121
	Nameigos 122
	Nameigos 123
	Nameigos 124
	Nameigos 125
	Nameigos 126
	Nameigos 127
ORBs that overlap with Nameigos/Kaby Road Networks:	
Regular Harvest	Lizar 120
ORBs that overlap with Beaton/Nameigos Road Networks:	
Regular Harvest	Beaton 138
	Breckenridge 120

1) Proposed Use Management Strategy for Nameigos Operational Road Boundaries

<u>Maintenance</u>:

- General road maintenance may consist of the following activities:
  - Ditch line cleaning and re-ditching,
  - Right of way brushing (manual/chemical),
  - Grading,
  - Cross-drainage culvert replacement,

- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme wind storms or precipitation).

Access Provision / Restrictions:

None planned.

Transfer / Future Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the Northeast Superior Recreation Access Area (E1771r) Enhanced Management Area. Land-use direction requires that resource management activities will be compatible with enhancing and maintaining the natural and recreational values of the area. The land use intent of this area is to promote and enhance opportunities for a diverse set of recreational activities for the benefit of communities located in the Wawa District. Priority will be given to activities that promote well planned access for enhanced recreational activities, community connectivity and improved resource use in the area. Promotion of a variety of recreational activities should be encouraged and enhanced. Roads, although discouraged, may be permitted for the purpose of access to natural resources through or between areas of operations on a forest management unit where determined by the MNRF that there are no reasonable alternatives. Under these circumstances, the MNRF must be satisfied that the following conditions are met:

- The road built to the lowest possible standard.
- Lowest cost is not the sole or overriding justification.

- Tourism values have been considered and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation.

"*Policies for the use of new roads should maintain or enhance the recreation qualities. Having regard for the land use intent, the most appropriate road system for both resource extraction and recreational uses will be developed. Operating guidelines for the protection of recreational values will be reflected in the CLUAH Management Guidelines document.*"

Operational Road Boundaries, **Nameigos 125** and **Nameigos 126** both breach into the Designated Remote Tourism Lake AOC for Nameigos Lake. Likewise, **Breckenridge 133** projects into the Designated Remote Tourism Lake AOC for Breckenridge Lake and ORB **Nameigos 123** enters the AOC barrier of Bruce Lake. All new operational roads will be effectively decommissioned immediately after the completion of forestry activities (in individual harvest blocks / areas). Roads will be built to the lowest possible standard and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation. Refer to Supplementary Documentation 6.1 (q) – Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations for more information on road decommissioning.

In addition to land use policy direction there are also requirements for roads within Moose Emphasis Areas. Road deactivation strategies to limit access by 4x4 vehicles will be used in specific locations. For more information regarding Moose Emphasis Areas, refer to the detailed subdocument that is provided within the Supplementary Documentation. A list of Operational Road Boundaries that intersect with MEA#2 is shown in Table 3030.

Table 30. Nameigos Operational Road Boundaries Intersecting with Moose Emphasis Area #2

Nameigos Road Network Operational Road Boundaries (ORBs) within Moose Emphasis Area #2	
Contingency Harvest	Breckenridge 170
	Breckenridge 171
	Breckenridge 174
	Breckenridge 175
Regular Harvest	Breckenridge 122
	Breckenridge 123
	Breckenridge 124
	Breckenridge 125
	Breckenridge 126
	Breckenridge 127
	Breckenridge 128
	Breckenridge 131
	Breckenridge 132
	Breckenridge 133
	Breckenridge 172

2) Summary of Public Comments

No comments received.

3) Use Management Strategy for Operational Road Network

Same as proposed.

OBA ROAD NETWORK

NETWORK LOCATION

The Oba road network is the last puzzle piece fitting into the southeastern corner of Nagagami forest management unit. Kabinakagami Lake makes up most of the western border and the forest management unit boundaries encompass the rest of the area. The Magpie Forest lies to the south and the Hearst Forest sits directly adjacent to its eastern border.

LAND USE

Primary road planning will follow the direction provided in the Crown Land Use Policy Atlas for the East Multiple Resource Management General Use Area (G1787). The East and West Multiple Use Resource Management General Use Area were developed to promote and encourage multiple land use objectives while minimizing conflict between different uses. Special considerations have been made to further promote public access and recreational activities while maintaining strategies that protect the remote quality of designated remote tourism lakes and category A and B canoe routes. Primary activities and uses include Crown land recreation, forest management, mineral exploration and extraction, commercial power development, hunting, fishing, camping, tourism, and various other commercial and recreational activities. The renewable resources in this area will continue to be managed on a sustained yield basis. Identified tourism lakes will be managed to protect their remote quality and in accordance to Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Public access to existing and newly developed primary roads will be permitted.

Moose Emphasis Areas (MEAs)

A portion of this Primary Road Corridor (almost 4 km) cuts along the south west corner of Moose Emphasis Area (MEA) #3, an area of approximately 7, 800 hectares south east of Kabinakagami Lake. Access control measures for operational roads falling within this area will be applied through road decommissioning strategies.

Primary and Branch Roads

There are five new primary roads planned for construction; **Haken Lake Road**, **Pichogen Link**, **Poulin's Road**, **Irving East Road**, and a very small portion of **Mosambik Road**. Many of these primary roads consist of upgrades to already existing roadbeds or are further extensions to already established primary roads, such as the case for Haken Lake Road. **Seguin Loop** is the only new branch road corridor that is planned for this road network. Poulin's Road and Irving Road are the major primary arteries that run through the heart of this area (see Table 3131 for a complete listing of roads within the Oba Road Network).

Table 31. Existing Primary and Branch Roads within Oba Road Network

Oba Road Network	
Road Name	**Road Length within Network (Km)**
Branch Roads	**34**
Irving Lake Siding Road	1
Irving West Road	10
Magpie Road 611	1
OBA16-81	2
OBA16-82	< 1
OBA16-83	< 1
Off License	< 1
ROAD 4	5
Road 5b	3
Road 6	6
Road 8	5
Watt Lake Road	1
Primary Roads	**87**
Irving Road	21
Mosambik Road	18
OB-2	1
Oba Road	10
Off License	< 1
Poulin's Road	34
Roch Road	3
Grand Total	**121**

IRVING EAST ROAD – Primary Rd

Alternative corridors

This primary access route is intended to access eligible harvest area in the eastern part of Irving township for the 2021-31 planning period and beyond. This corridor was planned, reviewed, and approved as a branch road corridor in the 2011-21 FMP, and is intended for reimplementation in the 2021-31 FMP with some alterations, detailed below.

1. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Irving East Road – Alt. 1 of 1

This proposed road corridor is currently classified as a branch road in the 2011-21 FMP and will be upgraded to a primary road for the 2021-31 FMP. The upgraded version will be shortened to 4.9 km from its original length of 10.5 km. This road corridor crosses creeks at 4 locations (1233, 1234, 1235, and 1254) and exists within the Chapleau game reserve. This road was approved for construction in phase 2 of the 2011-21 FMP but has yet to be constructed. This road will not be constructed within 2 kilometers of Upper Pichogen lake. This corridor originally provided access to the area north of the Pichogen river in the east side of Irving Township, however this has been removed for the 2021-31 FMP.

b) Environmental Analysis of Alternative Corridors

i) Advantages and disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road corridor will provide access for harvest, hauling, and renewal in the eastern part of Irving township. The original version of this corridor crossed the Pichogen River and extended further north, however; this has been removed to avoid the sizable crossing installation at this location.

Potential effects on non timber values:
This road has the potential to provide unauthorized access to resource-based tourism lakes in the area. There is a potential for the road to cause a loss of the perception of remoteness to the area south of Pichogen and Upper Pichogen Lakes.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of the Irving East Road and the Poulin's Road.

Irving East

- Road Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Pichogen, Upper Pichogen (sign NAG 044).

Poulin's Road

- Type 7 signage: Chapleau Game Preserve – Hunting, trapping, possession of firearms or traps prohibited. NAG 097.

These road use management strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on.

Maintenance:
General road maintenance on primary road infrastructure, includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

The estimated cost of construction of the 4.9 km long road is $276,500. This cost estimate is based on the number of water crossings (culverts) and kilometers of new road construction that will be required. Four water crossings (1233, 1234, 1235, and 1254) with spans of less than 3m could be established along

the road corridor. Road maintenance costs are anticipated to be reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

2. Summary of Public Comments

TBD

3. Proposed Corridor

a) Irving East Road - Alt.1 of 1
b) Rationale - We intend to utilize the same layout as the original corridor, with the final section north of Pichogen River removed. Given that the layout for this road corridor was planned, reviewed, and approved as a branch road in the 2011-21 FMP, the company would like to reimplement the same layout with the alteration described above. No alternative corridors are being considered at this time.
c) Use Management Strategy - Refer to the Use Management Strategy for Alternative Corridor 1 of 1 (Section 2.b) ii)).

4. Summary of Public Comments

TBD

5. Selected Corridor

TBD

6. Changes to a confirmed Primary Road Corridor Use Management Strategy

HAKEN LAKE ROAD – Primary Rd

1. Alternative corridors

This primary access route is intended to connect the Haken Lake Road with Poulin's road to provide access to the Oba portion of the forest. This corridor was planned reviewed and approved as a primary road corridor in the 2011-2021 FMP.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Haken / Poulin's Road - Alt. 1 of 1

The 18.8 km long road proceeds in a southeast direction from water crossing 926 on the Haken Lake Road and crosses the Kabinakagami River at water crossing #1242. Then continues to proceed southeast and crosses a creek at location 687, then heads due east through Mosambik Township along decommissioned roads crossing one creek at 681 before heading southeast utilizing existing roads on

the Magpie Forest. The road comes back onto the Nagagami Forest approximately 1.2 km from the southeast corner of Mosambik Township. Once back on the Nagagami Forest the road continues north along the Mosambik Township boundary crossing creeks at sites 1239 and 1238 and connects to the end of the Poulin's Road in Ermine Township (OBMs 67540, 68540, 69540).

This corridor is presently approved in the 2011-21 FMP and construction of the link is mostly complete. This corridor is being carried forward into the 2021-31 FMP if construction is not fully completed by the end of the plan and some work is required outside of a ROW.

b) Environmental Analysis:

i) Advantages and Disadvantages

Provides access to areas eligible for harvest, renewal and tending operations:
This road provides access for harvesting, hauling, and renewal operations in the southern portion of Mosambik Township for the 2021-2031 planning period and the connection is presently completed in the 2011-21 FMP. This route also provides a more direct and efficient link for the movement of timber products from Hawkins, Irving, Ermine and Mosambik Townships through to Hornepayne. The Long term cost and liability issues that are inherent with the movement of timber products and forest industry staff and resources across the private land link between Hawkins Township and Woolrich Township will be eliminated with the creation of this new access link from the Oba area to Hornepayne. The road will also benefit Columbia Forest Products mill in Hearst, as haul trucks can go north onto the Oba Road and Caithness Road to the Hearst Mill, removing haul traffic from public highways. There is also the benefit of hauling forest products from the Magpie Forest to either Hornepayne or Hearst rather than hauling to Dubreuilville first than on the highway to either Hornepayne or Hearst.

Potential effects on non timber values:
This road has the potential to provide unauthorized access to resource-based tourism lakes in the area. There is a potential for the road to cause a loss of the perception of remoteness to the area south of Kabinakagami Lake and north of Esnagi Lake. There is also potential for negative impacts to the highly value fishery due to bridge crossing on the Kabinakagami River.

An individual environmental assessment was requested for this corridor during the 2011-21 FMP and was deemed not necessary.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

ii) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of Haken Lake Road and Poulin's road.

Haken Lake Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, East Nameigos, Larkin, and Bruce (signs: NAG 002A and NAG 022).

- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami. Road closed to unauthorized public vehicular traffic from October ## to October ## inclusive' (signs: NAG 034 and NAG 035). These signs do not affect the travel on the Haken Lake Road, rather the restrictions are on the tertiary roads that head east from the Haken lake Road.
- Type 3 Signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lascelles and Larkin Lakes' (signs: NAG023 and NAG024).
- Type 4 Signage: Road closed to unauthorized public vehicular traffic from October ## to October ##, inclusive' (sign NAG038). This is the only sign of type 4 that applies to the Haken Lake Road. The following type 4 signs do not affect travel on the Haken Lake Road, rather the restrictions are on the tertiary roads that head east from the Haken Lake Road: NAG 052, NAG 053, NAG 054, NAG 055, NAG 056, NAG 057, NAG 058, NAG 059, NAG 060.

Poulin's Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Bruce, Nameigos, Breckenridge, Kabinakagamisis, Oba, Pozzo, Esnagi, Mosambik, Fred, North Webization, Wejinabikun, Kabinakagami, Ermine, Crescent, Tony (sign NAG 039).
- Type 7 signage: Chapleau Crown Game Preserve – Hunting, trapping, possession of firearms or traps prohibited (sign NAG098).

Additionally, Mosambik Road will be governed by the following signage:

- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Anahareo, Oba, Pozzo, Esnagi, Mosambik, Fred, North Wejinabikon, Wejinabikun, Kabinakagami, Ermine, Crescent and Tony (sign NAG 037A).
- Type 4 Signage: Road closed to unauthorized public vehicular traffic from October ## to October ##, inclusive' (sign NAG 062). Road closed to unauthorized public vehicular traffic from October ## to October ## inclusive (sign NAG 037B).

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs.

For old operational roads not required for current forest operations that originate from Mosambik Road, slash, boulder(s), berms, or a combination of techniques shall be employed to make the operational road impassible at or near the point of origin.

The number of new operational roads built off of Mosambik Road will be minimized, their construction will be to the lowest possible standard while still providing the Company with an efficient road network for forest management activities, and they will be decommissioned using slash, boulder(s), berms or a combination of techniques to make the operational road impassible at or near the point of origin within one year of harvest, or in extenuating circumstances within a timeframe otherwise approved by Wawa District MNRF.

The Company plans to renew areas harvested within the vicinity of Mosambik Road within one year of harvest through natural and artificial regeneration. At the same time, operational roads will have water crossings removed. Artificial regeneration will be completed within 2 years of the completion of harvest.

Maintenance:
General maintenance to occur on primary road infrastructure, this includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

iii) Estimate Cost of Construction and Use Management

There are no estimates of cost of construction for this corridor in the 2021-2031 FMP since the corridor has largely already been built-in the 2011 FMP. The planned completion date for this construction is prior to April 1st, 2021. Any cost in the 2021-2031 FMP would be associated with making improvements or completing the construction that was already budgeted in the 2011 FMP.
Transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

a) Haken / Poulins Road – Alt. 1 of 1
b) Rationale - This road has been planned reviewed and approved as a primary road corridor in the 2011-2021 FMP. The company intends to reimplement this corridor into the 2021-2031 FMP with no alterations.
c) Use Management Strategy – Same as above

5. Summary of Public Comments

TBD

6. Selected Corridor

TBD

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

Poulin's Road – Primary Rd

1. Alternative corridors

This primary access route is intended to connect the Haken Lake Road with Poulin's road to provide access to the Oba portion of the forest. This corridor was planned reviewed and approved as a primary road corridor in the 2011-2021 FMP.

2. Environmental Analysis of Alternative Corridors

c) Alternative corridor: Haken / Poulins Road - Alt. 1 of 1

The 18.8 km long road proceeds in a southeast direction from water crossing 926 on the Haken Lake Road and crosses the Kabinakagami River at water crossing #1242. Then continues to proceed southeast and crosses a creek at location 687, then heads due east through Mosambik Township along decommissioned roads crossing one creek at 681 before heading southeast utilizing existing roads on the Magpie Forest. The road comes back onto the Nagagami Forest approximately 1.2 km from the southeast corner of Mosambik Township. Once back on the Nagagami Forest the road continues north along the Mosambik Township boundary crossing creeks at sites 1239 and 1238 and connects to the end of the Poulin's Road in Ermine Township. OBMs 67540, 68540, 69540.

This corridor is presently approved in the 2011-21 FMP and construction of the link is mostly complete. This corridor is being carried forward into the 2021-31 FMP if construction is not fully completed by the end of the plan and some work is required outside of a ROW.

d) Environmental Analysis:

iv) Advantages and Disadvantages

<u>Provides access to areas eligible for harvest, renewal and tending operations</u>:
This road provides access for harvesting, hauling, and renewal operations in the southern portion of Mosambik Township for the 2021-2031 planning period and the connection is presently completed in the 2011-21 FMP. This route also provides a more direct and efficient link for the movement of timber products from Hawkins, Irving, Ermine and Mosambik Townships through to Hornepayne. The Long term cost and liability issues that are inherent with the movement of timber products and forest industry staff and resources across the private land link between Hawkins Township and Woolrich Township will be eliminated with the creation of this new access link from the Oba area to Hornepayne. The road will also benefit Columbia Forest Products mill in Hearst, as haul trucks can go north onto the Oba Road and Caithness Road to the Hearst Mill, removing haul traffic from public highways. There is also the benefit of hauling forest products from the Magpie Forest to either Hornepayne or Hearst rather than hauling to Dubreuilville first than on the highway to either Hornepayne or Hearst.

<u>Potential effects on non timber values</u>:
This road has the potential to provide unauthorized access to resource-based tourism lakes in the area. There is a potential for the road to cause a loss of the perception of remoteness to the area south of Kabinakagami Lake and north of Esnagi Lake. There is also potential for negative impacts to the highly value fishery due to bridge crossing on the Kabinakagami River.

An individual environmental assessment was requested for this corridor during the 2011-21 FMP and was deemed not necessary.

Potential access to any remote Aboriginal communities which were previously inaccessible by road: Not applicable. There are no known non accessed Aboriginal communities in this area.

v) Use Management Strategy

Access:
The use management strategy for this road will include public access provisions and restrictions which are consistent with those of Haken Lake Road and Poulin's road.

Haken Lake Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Lascelles, Breckenridge, Kabinakagami, Kabinakagamisis, Nameigos, East Nameigos, Larkin, and Bruce (signs: NAG002A and NAG022).
- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Kabinakagami. Road closed to unauthorized public vehicular traffic from October ## to October ## inclusive' (signs: NAG034 and NAG035). These signs do not affect the travel on the Haken Lake Road, rather the restrictions are on the tertiary roads that head east from the Haken lake Road.
- Type 3 Signage: Unauthorized use of this road to access the following lakes is prohibited from May 1st to October 21st: Lascelles and Larkin Lakes' (signs: NAG023 and NAG024).
- Type 4 Signage: Road closed to unauthorized public vehicular traffic from October ## to October ##, inclusive' (sign NAG038). This is the only sign of type 4 that applies to the Haken Lake Road. The following type 4 signs do not affect travel on the Haken Lake Road, rather the restrictions are on the tertiary roads that head east from the Haken Lake Road: NAG052, NAG053, NAG054, NAG055, NAG056, NAG057, NAG058, NAG059, NAG060.

Poulin's Road:

- Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Bruce, Nameigos, Breckenridge, Kabinakagamisis, Oba, Pozzo, Esnagi, Mosambik, Fred, North Wejinabikon, Wejinabikun, Kabinakagami, Ermine, Crescent, Tony (sign NAG039).
- Type 7 signage: Chapleau Crown Game Preserve – Hunting, trapping, possession of firearms or traps prohibited (sign NAG098).

Additionally, Mosambik Road will be governed by the following signage:

- Type 2 signage: Unauthorized use of this road to access the following lakes is prohibited: Anahareo, Oba, Pozzo, Esnagi, Mosambik, Fred, North Wejinabikon, Wejinabikun, Kabinakagami, Ermine, Crescent and Tony (sign NAG037A).
- Type 4 Signage: Road closed to unauthorized public vehicular traffic from October ## to October ##, inclusive' (sign NAG062). Road closed to unauthorized public vehicular traffic from October ## to October ## inclusive (sign NAG037B).

The road use management strategy signs are posted on to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on. The two-week road closure provides the opportunity for the commercial outfitter moose hunts within the first two weeks of the gun moose hunt to continue. Members of the public may access the road during other times of the year for their needs.

For old operational roads not required for current forest operations that originate from Mosambik Road, slash, boulder(s), berms, or a combination of techniques shall be employed to make the operational road impassible at or near the point of origin. The number of new operational roads built off of Mosambik Road will be minimized, their construction will be to the lowest possible standard while still providing the Company with an efficient road network for forest management activities, and they will be decommissioned using slash, boulder(s), berms or a combination of techniques to make the operational road impassible at or near the point of origin within one year of harvest, or in extenuating circumstances within a timeframe otherwise approved by Wawa District MNRF.

The Company plans to renew areas harvested within the vicinity of Mosambik Road within one year of harvest through natural and artificial regeneration. At the same time, operational roads will have water crossings removed. Artificial regeneration will be completed within 2 years of the completion of harvest.

Maintenance:
General maintenance to occur on primary road infrastructure, this includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

vi) Estimate Cost of Construction and Use Management

There are no estimates of cost of construction for this corridor in the 2021-2031 FMP since the corridor has largely already been built-in the 2011 FMP. The planned completion date for this construction is prior to April 1st, 2021. Any cost in the 2021-2031 FMP would be associated with making improvements or completing the construction that was already budgeted in the 2011 FMP.
Transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

TBD

4. Proposed Corridor

d) Haken / Poulins Road – Alt. 1 of 1
e) Rationale - This road has been planned reviewed and approved as a primary road corridor in the 2011-2021 FMP. The company intends to reimplement this corridor into the 2021-2031 FMP with no alterations.
f) Use Management Strategy – Same as above

5. Summary of Public Comments

TBD

6. Selected Corridor

TBD

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

PICHOGEN ROAD - Primary

This primary corridor touches a portion of the most northern border of Moose Emphasis Area (MEA) #4, an area of approximately 6, 000 hectares located on the eastern border of the forest management unit. Upper Pichogen Lake as well as Pichogen River Provincial Park make up the eastern boundary and Irving Road accounts for most of the western boundary. Access control measures for operational roads falling within this area will be applied through road decommissioning strategies.

1. Alternative corridors

Pichogen Road is a primary road commencing at 2.7 km on the Irving Road. It would run east through the Nagagami Forest for 4.4 km and continue into its course through the Hearst Forest for 6.9 km for a total combined length of 11.3 km. This primary access route is intended to provide industry access to eligible harvest area on both the Nagagami and Hearst Forests during this ten-year planning period and beyond. This corridor would provide industry on the Hearst Forest the opportunity for long term access to the western side of Walls Township, an area that is currently landlocked between the CNR, Pichogen River, Park P1530 and the Nagagami Forest.

2. Environmental Analysis of Alternative Corridors

a) Alternative corridor: Pichogen Road – Alt. 1 of 1

This corridor is designed to access the area eligible for harvest on the Hearst Forest north of Park P1530 and avoids crossing the park boundaries. It also avoids crossing the railway tracks.

b) Environmental Analysis:

iv) Advantages and disadvantages

<u>Provides access to areas eligible for harvest, renewal and tending operations</u>:
This road is planned to provide access for harvesting, hauling, and renewal operations along the eastern border of the Nagagami Forest and into Walls Township on the Hearst Forest. Administrative responsibilities for the road would be between the two Sustainable Forest Licensees (SFLs). Additional cost of road use fees will be levied by the Nagagami Forest.

<u>Potential effects on non timber values</u>:
The road requires three small water crossings. This road also has the potential to provide unauthorized access to resource-based tourism lakes in the area. There is a potential for the road to cause a loss of the perception of remoteness to the area south of Pichogen and Upper Pichogen Lakes.

Potential access to any remote Aboriginal communities which were previously inaccessible by road:
Not applicable. There are no known non accessed Aboriginal communities in this area.

v) Use Management Strategy

Access:
New access controls will be required on this road as it may indirectly provide access to Pichogen Lake, a designated remote tourism lake. The use management strategy for this road will include public access provisions and restrictions which are consistent with those of the Irving East Road and the Poulin's Road.

Irving East

- Road Type 1 signage: Unauthorized use of this road to access the following lakes is prohibited: Pichogen, Upper Pichogen' (sign NAG 044).

Poulin's Road

- Type 7 signage: Chapleau Game Preserve – Hunting, trapping, possession of firearms or traps prohibited. NAG 097.

These road use management strategy signs are posted to preserve the perception of remoteness to the highly valued fishery that the resource based commercial tourism industry in the area is based on.

Maintenance:
General maintenance on primary road infrastructure may occur which includes grading, ditching, brushing, surface treatment/dust control, gravelling/resurfacing, cross drainage, culvert replacement and general water crossing maintenance such as erosion control, bridge deck repair, etc.

Monitoring:
Water crossings on active primary and branch roads will be monitored annually.

Transfer/Abandonment:
Abandonment of this road is not planned at this time. Transfer provisions are not applicable.

vi) Estimate Cost of Construction and Use Management

The estimated cost of the construction of the 11.3 km long road is $509,900. This cost estimate is based on the number of kilometers of road upgrade and new road construction that will be required. Three additional crossings will be required costing approximately 8, 000 each. Road maintenance costs are anticipated to be reasonable, considering normal maintenance provisions related to level 1 maintenance procedures applicable for primary roads. Although transfer and decommissioning costs are not applicable to this road at this time, it is not anticipated that the costs of these future phases of the management of the primary road will be extraordinary.

3. Summary of Public Comments

During both Stage 2 (LTMD) and Stage 3 (Proposed Operations) public consultation it was requested that this road be classified as a Primary road for this ten-year forest management plan to access areas on the Hearst Forest for the next 20-years that would have been otherwise land-locked by the CN railway, a Provincial Park, the Pichogen River, and a strip of patent land along the Pichogen River. The Hearst Forest 2019 FMP Planning Team concluded that the only practical route to access the Pichogan Block is via a linkage through the Nagagami Forest that connects Poulin's Road to the planned Pichogen Road.

4. Proposed Corridor

a) Pichogen Road – Alt. 1
b) Rationale – Industry intends to work together on the Nagagami and Hearst Forests to provide long term access to an area otherwise landlocked.
c) Use Management Strategy – Same as above.

5. Summary of Public Comments

TBD

6. Selected Corridor

7. Changes to a confirmed Primary Road Corridor Use Management Strategy

SEGUIN LOOP - Branch

2) Proposed Corridor

d) Description:
The Seguin Loop is a 13.5 km loop that branches off Poulin's Road in Irving and Hawkins Townships. The road generally runs on a northeast line swinging to the west of Irving Lake, and to the east of Hawkins and Gull Lakes.

e) Rationale:
To access 2021-2031 harvest allocations along the eastern border of the forest management unit.

f) Use Management Strategy:

Maintenance:

General road maintenance may consist of the following activities:

- Ditch line cleaning and re-ditching,
- Right of way brushing,
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs.

Access Provision/Restrictions:
Road planning will follow the direction provided in the Crown Land Use Policy Atlas for the East Multiple Resource Management General Use Area (G1787). Identified tourism lakes will be managed to protect their remote quality and in accordance with Wawa District's Crown Land Use Atlas Harmonization Project Management Guidelines. Public access to existing and newly developed primary roads will be permitted.

3) Summary of Public Comments – TBD

OBA OPERATIONAL ROAD BOUNDARIES

Listed in Table 32 are the Operational Road Boundaries (ORBs) that fall within the Oba Operational Road Network.

Table 32. Operational Road Boundaries within the Oba Road Network

Operational Road Boundaries within Oba Road Network:	
Contingency Harvest	Ermine 170
	Ermine 171
	Ermine 172
	Ermine 173
	Hawkins 171
	Hawkins 172
	Hawkins 173
	Hawkins 174
	Irving 170
	Irving 171
	Irving 172
	Irving 173
	Irving 174
	Irving 175
	Irving 176
	Irving 177
Regular Harvest	Ermine 120
	Ermine 121
	Ermine 122
	Ermine 123
	Ermine 124
	Ermine 125
	Ermine 126
	Ermine 127
	Hawkins 120
	Hawkins 121
	Hawkins 122
	Hawkins 123
	Hawkins 124
	Hawkins 125
	Hawkins 126
	Hawkins 127
	Hawkins 128
	Irving 120
	Irving 121
	Irving 122
	Irving 123
	Irving 124
	Irving 125
	Irving 126
	Irving 127
	Irving 128
	Irving 129
	Irving 130
	Irving 131
	Irving 132
	Irving 133
	Irving 134
	Irving 135
	Irving 136
	Irving 137
	Irving 138
	Irving 139
	Mozambik 120
	Mozambik 121

1) Proposed Use Management Strategy for Oba Operational Road Boundaries

Maintenance:

- General road maintenance may consist of the following activities:
- Ditch line cleaning and re-ditching,
- Right of way brushing (manual/chemical),
- Grading,
- Cross-drainage culvert replacement,
- Culvert cleaning,
- Gravelling,
- Resurfacing,
- Removal of hazardous trees,
- Snow plowing,
- Sanding and salting,
- Dust control,
- Maintenance and repair of water crossings, signage, and safety structures,
- Emergency repairs, and
- Access control repair and replacement.

Ongoing monitoring, maintenance and emergency repair work will be prioritized to meet safety, environmental and operational needs. For emergency repairs it should be noted that roads and water crossings might not be restored in a timely manner, if damaged or destroyed by unplanned events such as a major storm. There is also no obligation on the Crown or the forest industry to undertake repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

Monitoring:

Water crossing structures will be regularly inspected, with bridges inspected annually, and culverts every 3 years. Road monitoring will be ongoing during active operations. Otherwise, roads and crossings will be inspected after severe weather events (such as extreme wind storms or precipitation).

Access Provision / Restrictions:

Access restrictions that may impact operational road boundaries (ORBs) within the Oba Road Network have been identified in Table 33. A description of the signage codes is presented in Table 2634.

Table 33. Access Restrictions impacting Oba Operational Road Boundaries

OBA OPERATIONAL ROAD NETWORK ACCESS RESTRICTION SIGNAGE													
ORB Identifier:	**NAG-039**	**NAG-040A**	**NAG-040B**	**NAG-041A**	**NAG-041B**	**NAG-032A**	**NAG-042B**	**NAG-043A**	**NAG-043B**	**NAG-044**	**NAG-097**	**NAG-098**	**NAG-099**
Ermine 120							✓	✓	✓				
Ermine 121								✓	✓				
Ermine 122				✓	✓			✓	✓				
Ermine 123				✓	✓			✓	✓				
Ermine 124				✓	✓			✓	✓				
Ermine 125				✓	✓			✓	✓				
Ermine 126							✓	✓	✓				
Ermine 127							✓						
Ermine 170													
Ermine 171							✓	✓	✓				
Ermine 172								✓	✓				
Ermine 173								✓	✓				
Hawkins 120											✓	✓	✓
Hawkins 121										✓	✓	✓	✓
Hawkins 122										✓			
Hawkins 123										✓			
Hawkins 124										✓	✓	✓	✓
Hawkins 125											✓	✓	✓
Hawkins 127													
Hawkins 128										✓	✓	✓	✓
Hawkins 171										✓			
Hawkins 171										✓	✓	✓	✓
Hawkins 174										✓	✓	✓	✓
Irving 120								✓	✓				
Irving 121								✓	✓				
Irving 122		✓	✓					✓	✓				
Irving 123	✓	✓	✓					✓	✓				
Irving 124													
Irving 125													
Irving 126										✓	✓	✓	✓
Irving 127											✓	✓	✓
Irving 128										✓	✓	✓	✓
Irving 129										✓			
Irving 130										✓			
Irving 135													
Irving 136										✓	✓	✓	✓
Irving 137										✓	✓	✓	✓
Irving 138		✓	✓					✓	✓				
Irving 170													
Irving 171													
Irving 173													
Irving 174										✓	✓	✓	✓
Irving 175										✓	✓	✓	✓
Irving 177													
Mozambik 120													
Mozambik 121													

Table 34. Description of Access Control Signage within the Oba Operational Road Network

Description of Access Control Signage within the Oba Operational Road Network:	
NAG-039	Use of this road to access the following lakes is prohibited: Kabinakagami, Crescent, Ermine, Tony.
NAG-040A	Use of this road to access the following lakes is prohibited: Tony.
NAG-040B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-041A	Use of this road to access the following lakes is prohibited: Kabinakagami, Tony.
NAG-041B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-042A	Use of this road to access the following lakes is prohibited: Kabinakagami, Crescent, Ermine, Tony.
NAG-042B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-043A	Use of this road to access the following lakes is prohibited: Kabinakagami, Ermine, Crescent.
NAG-043B	Closed to unauthorized public vehicular travel from October __ to October __ (current year), during first 2 weeks of moose hunt (gun).
NAG-044	Moose Management Area, no moose hunting from Oct __ to Nov 15 (current year). Use of this road to access the following lakes is prohibited: Pichogen, Upper Pichogen.
NAG-097	Chapleau Crown Game Preserve: Hunting, trapping, possession of firearms or traps prohibited.
NAG-098	Use of this road to access the following lakes is prohibited: Kabinakagami, Crescent, Ermine, Tony
NAG-099	Use of this road to access the following lakes is prohibited: Kabinakagami, Crescent, Ermine, Tony

Transfer / Future Management Intent (MNRF):

The forest industry proposes to transfer responsibility of these short-term roads to MNRF once they are no longer required for forest management activities. The projected date of transfer is identified in FMP-18; however, this may change due to several factors such as markets, manpower or equipment resources, Industry priorities and potential for future use of the roads.

Decommissioning:

The operational road boundaries are within the East Multiple Resource Management Area (G1787) General Use Area. Land-use direction requires that:

"*All roads built and maintained in this area will be subject to applicable legislation, policies and guidelines. Consideration for environmental, recreational and tourism values will be given, particularly in the vicinity of identified tourism lakes and ecological values. Operating guidelines for the protection of such values will be reflected in the CLUAH Management Guidelines document.*"

In addition to land use policy direction there are also requirements for roads within Moose Emphasis Areas or MEAs. Road deactivation strategies to limit access by 4x4 vehicles will be used in specific locations. For more information regarding Moose Emphasis Areas, refer to the detailed subdocument that is provided within the Supplementary Documentation. A list of Operational Road Boundaries that intersect with MEA #3 and MEA #4 are shown in 5 and **Error! Reference source not found.**6.

Table 35. Oba Road Network Operational Road Boundaries (ORBs) within Moose Emphasis Area #3.

Oba Road Network Operational Road Boundaries (ORBs) within Moose Emphasis Area #3	
Contingency Harvest	Ermine 171
	Ermine 173
Regular Harvest	Ermine 120
	Ermine 121
	Ermine 122
	Ermine 126
	Mozambik 120
	Mozambik 121

Table 36. Oba Road Network Operational Road Boundaries (ORBs) within Moose Emphasis Area #4.

Oba Road Network Operational Road Boundaries (ORBs) within Moose Emphasis Area #4	
Contingency Harvest	Hawkins 171
	Hawkins 172
	Hawkins 174
	Irving 174
Regular Harvest	Hawkins 120
	Hawkins 121
	Hawkins 122
	Hawkins 123
	Hawkins 124
	Hawkins 125
	Hawkins 128
	Irving 125
	Irving 126
	Irving 137

The Operational Road Boundaries (ORBs) referred to as **Ermine 121**, **Ermine 123** and **Ermine 173** almost completely fall within the boundaries of the Designated Remote Tourism Lake AOC for Kabinakagami Lake. Likewise, **Ermine 122** ORB falls within the same AOC type for Moose Lake while **Irving 126** and **Irving 137** slightly enter the Pichogen Lake AOC. All new operational roads will be effectively decommissioned immediately after the completion of forestry activities (in individual harvest blocks / areas). Roads will be built to the lowest possible standard and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation. Refer to Supplementary Documentation 6.1 (q) – Prescriptions for Harvest, Renewal and Tending, and Conditions on Regular Operations for more information on road decommissioning.

2) Summary of Public Comments

No comments received to date.

3) Use Management Strategy for Operational Road Network

Same as proposed.

(j) Planning of Operational Prescriptions and Conditions for Areas of Concerns (AOCs)

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D: Primary or Branch Road Crossing 28
E: Monitoring Program 29

BEAR MANAGEMENT STATION

A: Area of Concern Description

Area of concern Identifier: BMS

1. **Description:** Bear Management Station. This AOC is intended to protect Licensed Bear Management Area tree stands that belong to Resource Based Tourism Operators. To receive protection, locations of tree stands must be provided during the annual work schedule public review period and/or during planning of proposed operations. If stands are to be protected, spatial data must be provided to and approved by MNRF on a yearly basis. Additionally, Bear stands must be declared either active or inactive by the bear management station licensee when the spatial data are provided to MNRF. Bear Stands That are not declared active or inactive will be treated as inactive (i.e. will not receive protection).

2. **Dimensions of AOC:** 0-30 meter reserve centered on the waypoint provided by Operator.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

The operations task team decided to adopt this prescription from the 2018-28 White River Forest FMP, as users of both forests expressed interest in protecting values associated with Bear Management Areas. For this reason, no alternative prescriptions were considered.

Proposed Operational Prescription and Condition

a) Description: Prescription A1 will be implemented as described in section A1 and A2
b) Rationale: This prescription was implemented in the 2018-28 White river FMP. The operations task team decided to implement this AOC into the 2021 plan, as interest has been expressed to apply protection to values associated with BMAs in previous FMPs
c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1

C: Operational Road Crossing

New operational roads or landings are not permitted within the 0-30m reserve however, operators may be inclined to move their respective bear management stations if new roads or landings provide additional benefits.

D: Primary or Branch Road Crossing

New primary roads, branch roads, and landings are not permitted within the 0-30m reserve; however, operators may be inclined to move their respective bear management stations if new roads or landings provide additional benefits.

Operations associated with primary roads, branch roads, and landings are not permitted within the 0-30m reserve.

E: Monitoring Program

TRAPPERS CABIN

A: Area of Concern Description

Area of concern Identifier: CAB

1. **Description:** Trappers Cabin - Modern fur management practices often require year-round use of trapline buildings (e.g. management of nuisance animals, building and equipment repairs), as well as a presence by trappers to protect their financial investments. As a result, the Ministry allows year-round use of approved trapline buildings, for legitimate trapline management purposes.

2. **Dimensions of AOC:** 120-meter AOC measured from the center of the structure.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description: 0-30 meter reserve where harvest renewal, and tending operations are not permitted, unless agreed to by the structure owner, the SFL holder, and MNRF. **Modified zone of 31-120 meters** where aerial spraying is not permitted (site preparation or tending),

unless agreed to by the structure owner, the SFL holder, and MNRF. All other harvest and renewal activities are permitted.

b) Rationale:

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

New operational roads or landings are not permitted within the AOC, unless agreed to by the structure owner, the SFL holder, and the MNRF. No conditions on existing roads and landings.

D: Primary or Branch Road Crossing

New Primary roads, Branch Roads, and landings are not permitted within the AOC, unless agreed to by the structure owner, the SFL holder, and the MNRF. No conditions on existing roads and landings

E: Monitoring Program

COTTAGE (remote and non-remote)

A: Area of Concern Description

Area of concern Identifier: CO

1. **Description:** Remote and non-remote Cottages. This protection is applied to cottages that occur on patent land and land use permit parcels. Protection on land use permits is applied to all parcels tagged as "Private Recreation camp" in the spatial data provided by LIO.
2. **Dimensions of AOC:** 120-meter AOC reserve measured from the edge of the surveyed property boundary.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

d) Description: See A1 and A2.
e) Rationale: Maintain aesthetic quality of cottage area.
f) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments
Concerns were raised during stage 3 public consultation regarding the proximity of harvest operations to residences on the north shore of West Larkin lake (stage 3 Public consultation summary reference #45).

Selected Prescription

A1.

C: Operational Road Crossing
New operational roads or landings are not permitted within the 0-120m AOC. No conditions on existing roads and landings

D: Primary or Branch Road Crossing
New Primary roads, Branch Roads, and landings are not permitted within the 0-120m AOC.

E: Monitoring Program

EASTERN WHIP-POOR-WILL

A: Area of Concern Description

Area of concern Identifier: EWW

1. **Description:** This AOC applies to nest or nest sites occupied by the Eastern Whip-poor-will. Nest locations are normally identified by triangulation of calling males over multiple nights.
2. **Dimensions of AOC:** 500-meter AOC centered on the approximate nest location.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description: A modified zone of 0-170 meters to be placed on nest during the critical breeding period (May 1 to August 31st, where harvesting activities within this zone are not permitted. However, outside of the critical breeding period harvesting activities may be permitted provided that the remaining forest meets the residual requirements as per Table FMP-11. In the 171-500 m modified zone harvesting, renewal and tending are not permitted during the critical breeding period.
b) Rationale: New General Habitat Description for Eastern Whip-poor-will (MNRF 2013) 4 pp.
c) Exception: This AOC prescription is not an exception to direction in any current forest management guides.

Summary of Public Comments
No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

New operational road construction is not permitted within the 0-170m modified zone. Reasonable Effort will be made to avoid operational road construction within the 171-500m modified zone during the critical breeding period (May 1 to August 31). No additional conditions on existing roads and landings outside of the seasonal timing restriction window.

D: Primary or Branch Road Crossing

New primary or branch road construction is not permitted within the 0-170m modified zone. Reasonable Effort will be made to avoid primary or branch road construction within the 171-500m modified zone during the critical breeding period (May 1 to August 31). No additional conditions on existing roads and landings outside of the seasonal timing restriction window.

E: Monitoring Program

LAND USE PERMIT

A: Area of Concern Description

Area of concern Identifier: LP

1. **Description:** A land use permit (LUP) allows for a specified activity to be conducted on the land for up to 10 years but does not give ownership of the land or interest in the land. LUPs can be granted for an array of activities and this AOC can be applied to trails, communication towers, wood storage sites, private rec camps etc.
2. **Dimensions of AOC:** 75 -meter reserve from the boundary of the permit area as per LIO shapefile.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description: See A1 above.
b) Rationale: To preserve the user experience of the land use activity.
c) Exception: This AOC prescription is not an exception to direction in any current forest management guides.

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

Operational roads and landings are not to be planned or constructed through or within the active land use permit sites or the 75-meter AOC without consent by the Ministry of Natural Resources and Forestry. No conditions on existing roads and landings.

D: Primary or Branch Road Crossing

Primary roads, branch roads, and landings are not to be planned or constructed through or within the active land use permit sites or the 75-meter AOC without consent by the Ministry of Natural Resources and Forestry. No conditions on existing roads and landings.

E: Monitoring Program

CENTER OF ONTARIO

A: Area of Concern Description

Area of concern Identifier: ON

1. **Description:** The geographic center of Ontario.
2. **Dimensions of AOC:** Do not damage or otherwise compromise the structural integrity of the monument or walkway.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description: See A1 and A2.
b) Rationale: This landscape feature recognized by the Town of Hornepayne. The Municipality plans to further develop this area and use it as a tourist attraction.
c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

Road construction must not damage otherwise compromise the structural integrity of the monument or the associated walkway. No conditions on existing roads and landings.

D: Primary or Branch Road Crossing

Same as for section C above.

E: Monitoring Program

PROVINCIAL PARK

A: Area of Concern Description

Area of concern Identifier: PK

1. **Description:** Provincial Park.
2. **Dimensions of AOC:** 200 meter AOC measured from Provincial Park boundaries.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions
Proposed Operational Prescription and Condition

a) **Description:** Modified zone of 0-60 meters where aerial tending, site preparation is not permitted and harvest, renewal, and tending operations may proceed. In the 0-200 meter modified zone for Nagagamisis Provincial Park there is to be no forest operations between Victoria Day weekend and Labour Day weekend.
b) Rationale: Not to compromise the recreational experience of park users.
c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

Construction of new operational roads is not permitted within modified B, unless required due to topography or safety and agreed to by the park superintendent.

D: Primary or Branch Road Crossing

E: Monitoring Program

RAILWAY

A: Area of Concern Description

Area of concern Identifier: RW

1. **Description:** Railway.
2. **Dimensions of AOC:** 30-meter AOC measured from the edge of the railway right of way.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) **Description:** A modified 0-30 meters where harvesting is permitted within this AOC subject to the following:

- Approval from the rail line owner has been obtained.
- No trees may be felled into the right of way.
- Any logging debris within the right of way must be removed.
- No heavy equipment is permitted within 10 meters of the railway right of way.
- The local MNRF will be notified prior to harvesting land adjacent to the right of way.
- Renewal and tending will be permitted within the AOC if approval has been provided by the rail line owner

b) Rationale: 2006 Planning Team developed this AOC and the 2021 opted to keep it.

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1

C: Operational Road Crossing

New operational roads are permitted within the 30-meter AOC. Landings are not permitted within the 30-meter AOC or rail right of way. No conditions on existing roads and landings.

D: Primary or Branch Road Crossing

New primary and branch roads are not permitted within the 30-meter AOC. No conditions on existing roads and landings.

E: Monitoring Program

Category A Canoe Routes

A: Area of Concern Description

Area of concern Identifier: CRA

1. **Description:** Canoe Route - Category A (CRA). This AOC prescription applies to the Kabinakagami River, Portions of Kabinakagami Lake, Nameigos River, Oba River, and Foch River.
2. **Dimensions of AOC:** 500-meter AOC measured from the productive forest edge of the canoe route.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description:

Reserve: 0-90 meters

- Harvest, renewal, and tending operations are not permitted.

Modified: 91-500 meters

- *In areas visible from the river:*
  - Harvest, renewal, and tending are not permitted.

- *In areas not visible from the river:*
  - Harvest, renewal, and tending operations are permitted

- Aerial tending will not be permitted within areas visible from the river to a maximum of 500 meters to maintain a forested appearance.

In order maintain a forested appearance, a viewscape analysis was conducted to identify areas where bear ground would be visible from the perspective of the water should the harvest area be completely depleted. These areas are defined as being “visible from the river” and were treated as viewscape reserves.

Additionally, portages will:

- Be cleared of slash and other debris when road-building activities intersect.
- Not be disturbed outside the road right of way.
- Be levelled within the road right of way to provide adequate footing
- Be protected in a manner that leaves them visible from either side of the road

b) Rationale: Developed b the 2021-31 Planning team to satisfy the requirements for category A canoe routes as described in CLUPA and the Wawa district’s Crown Land Use Atlas Harmonization Project Management Guidelines**.** This prescription is intended to maintain the aesthetic value of the forest canopy from the perspective of the water.

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

i. No new operational roads within the 0-90m no cut reserve unless a water crossing is required and there is no feasible alternative.
ii. The maximum ROW will be 20m where the road crosses through the 0-90m reserve.
iii. Portages will be cleared of slash and debris after road building across them is completed. Portages will be clearly visible from both sides of the road and leveled with the right of way.
iv. Operational roads permitted within the 91-500m modified zone.
v. In the 91-500m modified zone, the maximum ROW width is not restricted if it falls within a harvest allocation in which harvesting, renewal, and tending operations are permitted.

D: Primary or Branch Road Crossing

i. No new primary or branch roads within the 0-90 meter no cut reserve unless a water crossing is required and there is no feasible alternative.
ii. The maximum ROW will be 20m where the road crosses through the 0-90m reserve.
iii. Portages will be cleared of logging debris where crossed by roads.
iv. Portages will be clearly visible from both sides of the road
v. Portages will be leveled with the right of way to provide adequate footing.

E: Monitoring Program

Category B Canoe Routes

A: Area of Concern Description

Area of concern Identifier: CRB

1. **Description:** Canoe Route - Category B (per CLUAH 2015). This prescription is applied to Canoe routes that travel through Larkin Lake, Nagagami Lake and White Owl Lake.

2. **Dimensions of AOC:** 30-metere AOC measured from the productive forest edge of the canoe route

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description:

Reserve: 0-30 meters

- Harvest, renewal, and tending is not permitted

Additionally, portages will:

- Be cleared of slash and other debris when road-building activities intersect.
- Not be disturbed outside the road right of way.
- Be levelled within the road right of way to provide adequate footing
- Be protected in a manner that leaves them visible from either side of the road

b) Rationale: Developed b the 2021-31 Planning team to satisfy the requirements for category B canoe routes as described in CLUPA and the Wawa district's Crown Land Use Atlas Harmonization Project Management Guidelines**.** This prescription is intended to maintain the recreational experience of the canoe route.

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

i. No new operational roads are permitted within the AOC unless a water crossing is required and there is no feasible alternative.
ii. Road ROW width will not exceed 20 meters where the road crosses through the AOC.
iii. No new landings will be constructed within the AOC.
iv. Portages will be cleared of logging debris where crossed by roads.
v. Portages will be clearly visible from both sides of the road and level with the right of way.

D: Primary or Branch Road Crossing

i. No new Primary roads, branch roads are permitted within the AOC, unless a water crossing is required and there is no feasible alternative.
ii. Road ROW width will not exceed 20 meters where the road crosses through the AOC.
iii. No new landings will be constructed within the AOC.
iv. Portages will be cleared of logging debris where crossed by roads.
v. Portages will be clearly visible from both sides of the road and level with the right of way.

E: Monitoring Program

Multi-Species Inventory and Monitoring Plots

A: Area of Concern Description

Area of concern Identifier: MSIM

1. **Description:** The Multi-species Inventory and Monitoring (MSIM) plot network is one component of a broader wildlife monitoring framework led by the Provincial Wildlife Population Monitoring Program. The MSIM component of the Provincial Wildlife Population Monitoring Program uses multiple, survey methods on each plot in a network to provide population data (presence and/or relative abundance) for many terrestrial and riparian vertebrate wildlife species over a broad scale in both time and space.
2. **Dimensions of AOC:** 1000-meter AOC measured from the plot center.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) **Description:**

Inactive Plots

1000-meter AOC measured from the plot center.

Reserve: none

Modified: 0-1000 meters

- Harvest, renewal, and tending are permitted, subject to the following:
    - Notify the Wildlife Population Monitoring Program specialist when operations are within 1,000 meters of a MSIM plot centre.

- Wildlife Population Monitoring Program Science Specialist has provided specific plot information.
- Avoid damaging or moving any marker posts.
- Use caution if heavy equipment crosses the salamander grid.

Active Plots

1000-meter AOC measured from the plot center

Reserve: 0-1000 meters

- During the active period (May 1 to September 15), harvest, renewal, and tending are not permitted, unless otherwise arranged with the Wildlife Population Monitoring Program specialist.
- OUTSIDE the active period (September 16 to April 30), normal operations can proceed if plot infrastructure is kept intact.
  - Where feasible, avoid traversing the salamander coverboard grid
  - trees within the grid can be removed, provided no disturbance to any coverboards takes place.
- Notify the Wildlife Population Monitoring Program Specialist when operations are close to the 0-1000m reserve.

**For all plots: Notify Wildlife Population Monitoring Program specialist if marker posts or salamander grids are damaged.*

b) Rationale: To prevent forest management activities from compromising the structureal integrity of the instruments within each plot and the data collected. This prescription was developed from regional direction.

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Summary of Public Comments

No public comments were received regarding this AOC prescription. The 2020 pandemic precluded an in-person meeting, potentially affecting the number of comments received from the public.

Selected Prescription

A1.

C: Operational Road Crossing

Contact the Regional Wildlife Populations Specialist with the Biodiversity and Monitoring Section prior to operations to determine if monitoring plot is active or inactive.

Existing Roads:
There are no conditions on the use or maintenance of existing roads within the 0-1000m AOC.

Planned Roads:
Active plots: Road construction may only take place between September 16 and April 30. The road right of way must be built at least 15 meters from any plot infrastructure.
Inactive plots: Road construction is permitted, provided the road right of way is at least 15 meters from any plot infrastructure.

D: Primary or Branch Road Crossing

Contact the Regional Wildlife Populations Specialist with the Biodiversity and Monitoring Section prior to operations to determine if monitoring plot is active or inactive.

Existing Roads:
There are no conditions on the use or maintenance of existing roads within the 0-1000m AOC.

Planned Roads:
Active plots: Road construction may only take place between September 16 and April 30. The road right of way must be built at least 15 meters from any plot infrastructure.
Inactive plots: Road construction is permitted, provided the road right of way is at least 15 meters from any plot infrastructure.

E: Monitoring Program

Provincial Growth Plots

A: Area of Concern Description

Area of concern Identifier: PGP

1. **Description:** Provincial Forest Growth and Yield Research Plots: Permanent Growth Plot (PGP).

2. **Dimensions of AOC:**

75-meter AOC as mapped per the Research Plot Protected layer provided by LIO.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) **Description:**

Reserve: As mapped

- Harvest, renewal or tending operations are not permitted.

Modified: none

b) Rationale: The planning team decided to adapt this prescription from the 2018-28 White River Forest FMP.

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Selected Prescription

A1.

C: Operational Road Crossing

i. Primary roads, branch roads, and landings are not permitted within the AOC.
ii. No conditions on existing roads and landings.

D: Primary or Branch Road Crossing

i. Operational roads and landings are not permitted within the AOC.
ii. No conditions on existing roads and landings

E: Monitoring Program

Permanent Sample Plot

A: Area of Concern Description

Area of concern Identifier: PSP

1. **Description:** Provincial Forest Growth and Yield Research Plots: Permanent Sample Plot (PSP). Identified through LIO.

2. **Dimensions of AOC:** 120-meter AOC measured from the plot center.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

d) Description:

Reserve: 0-120 meters

- Harvest, renewal, and tending operations are not permitted.

Modified: none

e) Rationale: The planning team decided to adapt this prescription from the 2018-28 White River Forest FMP.

f) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Selected Prescription

A1.

C: Operational Road Crossing

i. New operational roads are not permitted within the AOC.
ii. No conditions on existing roads and landings

D: Primary or Branch Road Crossing

i. Primary roads, Branch roads, and landings are permitted in the AOC only when no reasonable alternative exists and with prior written approval from MNRF.
ii. No conditions on existing roads and landings

E: Monitoring Program

Remote tourism Mainbase Lodge

A: Area of Concern Description

Area of concern Identifier: RTM-1 and RTM-2

1. **Description:** Designated remote main base lodge and associated waterbody. This AOC applies to the following lakes: Nagagami Lake, Obakamiga Lake, Granitehill Lake, Larkin Lake, Kabinakagami Lake, Cameron Lake.

2. Dimensions of AOC:

RTM-1:400-meter AOC measured from the established property boundary of main base lodge location.

RTM-2: 2000-meter AOC measured from the productive forest edge at the lake shoreline.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

g) Description:

RTM-1: Designated remote tourism main base lodge (structure)

400-meter AOC measured from the established property boundary of main base lodge location.

Reserve: 0-400 meters
- Harvest, renewal, and tending operations are not permitted.

RTM-2: Designated remote tourism main base lodge water and viewscape reserves

Reserve: 0-120 meters
- Harvest, renewal, and tending operations are not permitted.

Modified(a): 121-2000 meters
- *In areas visible from the lake:*
    - Harvest, renewal, and tending are not permitted.

- *In areas not visible from the lake:*
    - Harvest, renewal, and tending operations are permitted.

In order maintain a forested appearance from the perspective of the water, a viewscape analysis was conducted to identify areas where bear ground would be visible from the perspective of the water should the harvest area be completely depleted. These areas are defined as being “visible from the lake” and were treated as no-cut viewscape reserves.

- The company will aim to decommission roads within 3 years of the completion of harvest; however, this window may be extended if further renewal treatments are required. Any extensions to this window must be approved by the MNRF.
    - access restriction measures that don't compromise the integrity of the road base (e.g. slash piling or berms) may be implemented in the interim if the window is extended beyond the 3-year period

Modified(b): 0-2000 meters

- From the opening of walleye season to the end of the second week of the gun moose hunt, harvesting and mechanical site preparation are not permitted (for "noise control"). This timing restriction may not apply when facilities are not in operation.
    - Seasonal timing restrictions can be modified on a case by case basis where otherwise agreed upon by the MNRF, Forestry or Industrial company, and the tourism establishment through a resource stewardship agreement or other instrument. MNRF is to be notified of consultation between outfitters and forest industry yielding agreement to conduct forestry operations within controlled timing windows, prior to the commencement of forest operations.

- Site preparation may be permitted during the frost-free season but will be limited to the hours of 8:00 am and 6:00 pm from the opening of walleye season to the end of the 2nd week of moose hunt rifle season.

Seasonal timing restrictions can be modified on a case by case basis where otherwise agreed upon by the MNRF, Forestry or Industrial company, and the tourism establishment through a resource stewardship agreement or other instrument. MNRF is to be notified of consultation between outfitters and forest industry yielding agreement to conduct forestry operations within controlled timing windows, prior to the commencement of forest operations.

a) Rationale: Developed b the 2021-31 Planning team to satisfy the requirements for Remote tourism main base lodges as described in CLUPA and the Wawa district's Crown Land Use Atlas Harmonization Project Management Guidelines**.** This prescription is intended to maintain the aesthetic value of the forest canopy from the perspective of the water.

b) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Selected Prescription

A1.

C: Operational Road Crossing

RTM-2: Designated remote tourism main base lodge water and viewscape reserves

- From the opening of walleye season to the end of the second week of the gun moose hunt, Road construction and hauling are not permitted within the 0-2000 m modified zone.
- New operational roads are not permitted within 400 meters of the shoreline of the lake.
- New roads will be decommissioned upon the completion of forest management activities (i.e. completion of renewal treatments).
    - The company will aim to decommission access within 3 years of completion of harvest; however, this window may need to be extended if further renewal treatments are required. Any extensions to this window must be approved by the MNRF. Access restriction measures that do not compromise the integrity of the road base (e.g. slash piling or berms) may be implemented in the interim if the window is extended beyond the 3-year period.
- The road will be built to the lowest possible standard.
- Lowest cost will not be the sole or overriding justification.
- Tourism values will be considered, and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation.
- The construction of roads up to or between cold water crossings will be permitted to comply with the cold water in-stream timing restriction of June 16th to August 31st. The company will consult with the affected tourism operators to schedule the most appropriate time for conducting this work.

The SFL will advise MNRF Wawa District Office if any existing trails are found leading to or within a RTM AOC when constructing operational roads.

D: Primary or Branch Road Crossing

RTM-2: Designated remote tourism main base lodge water and viewscape reserves

- Primary and branch road construction is not permitted within the 2000-meter AOC.

From the opening of walleye season to the end of the second week of the gun moose hunt, Road construction and hauling are not permitted within the 0-2000 m modified zone.

E: Monitoring Program

Remote Tourism Outpost Lodge

A: Area of Concern Description

Area of concern Identifier: RT0-1 and RT0-2

3. **Description:** Designated remote outpost lodge and associated waterbody. This AOC applies to the following lakes: Ahmabel Lake, Fraser Lake, Linbarr Lake, Lessard Lake, Buffalo Island Lake, Shekak Lake, McCoy Lake, White Owl Lake, Bayfield Lake, Lascelles Lake, Kabinakagamisis Lake, Breckenridge Lake, Nameigos Lake, Bruce Lake, Ermine Lake, Tony Lake (Moose), Crescent Lake, Cigar Lake, Upper Pichogen Lake, Pichogen Lake.

4. **Dimensions of AOC:**

RTO-1: 300-meter AOC measured from the established property boundary of the outpost lodge location.

RTO-2: 1000-meter AOC, measured from the productive forest edge at the lake shoreline

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description:

RTO-1: Designated remote tourism outpost lodge (structure)

300-meter AOC measured from the established property boundary of the outpost lodge location.

Reserve: 0-300 meters
- Harvest, renewal, and tending operations are not permitted.

RTO-2: Designated remote tourism outpost lodge water and viewscape reserves

Reserve: 0-120 meters
- Harvest, renewal, and tending operations are not permitted.

Modified(a): 121-1000 meters
- *In areas visible from the lake:*
    - Harvest, renewal, and tending are not permitted.

- *In areas not visible from the lake:*
    - Harvest, renewal, and tending operations are permitted.

In order maintain a forested appearance from the perspective of the water, a viewscape analysis was conducted to identify areas where bear ground would be visible from the perspective of the water should the harvest area be completely depleted. These areas are defined as being “visible from the lake” and were treated as no-cut reserves.

- The company will aim to decommission roads within 3 years of the completion of harvest; however, this window may be extended if further renewal treatments are required. Any extensions to this window must be approved by the MNRF.
    - access restriction measures that do not compromise the integrity of the road base (e.g. slash piling or berms) may be implemented in the interim if the window is extended beyond the 3-year period.

Modified(b): 0-1000 meters

- From the opening of walleye season to the end of the second week of the gun moose hunt, harvesting and mechanical site preparation are not permitted (for "noise control"). This timing restriction may not apply when facilities are not in operation.
    - Seasonal timing restrictions can be modified on a case by case basis where otherwise agreed upon by the MNRF, Forestry or Industrial company, and the tourism establishment through a re-source stewardship agreement or other instrument. MNRF is to be notified of consultation be-tween outfitters and forest industry yielding agreement to conduct forestry operations within controlled timing windows, prior to the commencement of forest operations.

- Site preparation may be permitted during the frost-free season but will be limited to the hours of 8:00 am and 6:00 pm from the opening of walleye season to the end of the 2nd week of moose hunt rifle season.

Seasonal timing restrictions can be modified on a case by case basis where otherwise agreed upon by the MNRF, Forestry or Industrial company, and the tourism establishment through a resource stewardship agreement or other instrument. MNRF is to be notified of consultation between outfitters and forest industry yielding agreement to conduct forestry operations within controlled timing windows, prior to the commencement of forest operations.

b) Rationale: Developed by the 2021-31 Planning team to satisfy the requirements for Remote tourism mainbase lodges as described in CLUPA and the Wawa district's Crown Land Use Atlas Harmonization Project Management Guidelines**.** This prescription is intended to maintain the aesthetic value of the forest canopy from the perspective of the water.

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Selected Prescription

A1.

C: Operational Road Crossing

RTO-2: Designated remote tourism outpost camp water and viewscape reserves

i. From the opening of walleye season to the end of the second week of the gun moose hunt, road construction and hauling operations are not permitted within the 0-1000m modified zone.
ii. New operational roads are not permitted within 400 meters of the shoreline of the lake.
iii. New roads will be decommissioned upon the completion of forest management activities (i.e. completion of renewal treatments).
    - The company will aim to decommission access within 3 years of completion of harvest; however, this window may need to be extended if further renewal treatments are required. Any extensions to this window must be approved by the MNRF. Access restriction measures that do not compromise the integrity of the road base (e.g. slash piling or berms) may be implemented in the interim if the window is extended beyond the 3-year period. The road will be built to the lowest possible standard.
iv. Lowest cost will not be the sole or overriding justification.
v. Tourism values have been considered and all reasonable measures will be undertaken to minimize harmful impacts and to protect a perception of inaccessibility and isolation.
vi. The construction of roads up to or between cold water crossings will be permitted to comply with the cold water in-stream timing restriction of June 16th to August 31st. The company will consult with the affected tourism operators to schedule the most appropriate time for conducting this work.
    The SFL will advise MNRF Wawa District Office if any existing trails are found leading to or within a RTM AOC when constructing operational roads.

D: Primary or Branch Road Crossing

RTO-2: Designated remote tourism outpost camp water and viewscape reserves

i. Primary and branch road construction is not permitted within the 1000-meter AOC.

From the opening of walleye season to the end of the second week of the gun moose hunt, road construction and hauling operations are not permitted within the 0-1000m modified zone.

E: Monitoring Program

Barn Swallow Colony

A: Area of Concern Description

Area of concern Identifier: BSN

1. **Description:** All nests and colonies on natural nest sites. The average distance between active nests within a colony is approximately 2 to 4 metres. All used nests at any nest site that has been occupied by Barn Swallows within the previous three breeding seasons. Direction applies to nests know before or found during operations.

2. **Dimensions of AOC:** 5-meter AOC measured from peripheral nests.

B: Operational Prescription and Conditions

Environmental Analysis of Alternative Operational Prescriptions and Conditions

Proposed Operational Prescription and Condition

a) Description:

Reserve: None

Modified: 0-5 metre

- During the critical breeding period (May 1 to August 31), harvest, renewal, and tending operations are not permitted.
- Outside of the critical breeding period, harvest renewal, and tending operations are permitted, provided nests are not removed or destroyed.

b) Rationale: Prescription was adopted from the 2018-28 White River FMP.

c) Exception: This AOC prescription is not an exception to direction in any current forest management guides

Selected Prescription

A1.

C: Operational Road Crossing

i. New roads and landings are not permitted within 50 metres of active colonies.
ii. Operations associated with roads and landings are not permitted within 50 metres of occupied nests within colonies during the critical breeding period, unless required to address safety or environmental protection issues.
iii. There is no timing restriction on hauling or low potential impact road maintenance operations (e.g., grading) if the road predates the colony.
iv. Maintenance is not permitted on a structure that is supporting nests if the maintenance will potentially disturb nesting pairs.

If maintenance must occur during the breeding season, contact MNRF for protocols

D: Primary or Branch Road Crossing

i. Maintenance is not permitted on a structure that is supporting nests if the maintenance will potentially disturb nesting pairs.
ii. If maintenance must occur during the breeding season, contact MNRF for protocols.

(k) Summary of Public Consultation

SUMMARY OF PUBLIC CONSULTATION FOR THE 2021 NAGAGAMI FMP – DRAFT PLAN

The following has been prepared to meet the requirements of the 2017 and 2020 Forest Management Planning Manuals to provide a summary of public consultation in preparation of the FMP. This summary has been updated to October 21, 2020 and will be updated again for Final FMP submission.

Table 1 provides a summary of each stage of consultation included the desired forest and benefits meeting (e.g., forum, dates, number of attendees, types of supplemental notices sent).

FMP Planning Stage	Location (forum or media)	Date	Attendees
Stage 1 – Invitation to Participate	EBR Posting	November 13, 2018	
	News Ads:		
	Sault Star	November 12, 2018	
	The Algoma News Review	November 14, 2018	
	Hearst Le Nord	November 15, 2018	
	Wicksteed Weekly	November 14, 2018	
	Mail out	November 8, 2018	
	A Desired Forest and Benefits Meeting was held at the Grace United Church in Hornepayne on June 6, 2019.		21
	Public comments received at Stage = 0		
Stage 2 – Review of the Long-term Management Direction	EBR Posting	November 27, 2019	
	News Ads:		
	Hearst Le Nord	November 27, 2019	
	wawa-news.com	December 3, 2019	
	Mail out	November 26, 2019	
	Presentation to NFLCC	September 10, 2019	13 – including 7 LCC members
	Public comments received at Stage = 5		
Stage 3 – Review of Proposed Operations	EBR Posting	March 2, 2020	
	News Ads:		
	Hearst Le Nord	March 5, 2020	
	wawa-news.com	March 11, 2020	
	Mail out	February 26, 2020	
	Information Centre scheduled for March 31st – was not held due to restrictions related to COVID-19. All materials were posted to the EFMP site		
	Public comments received at Stage = 55 + 8 received between Stage 3 and 4		
Stage 4 – Review of the Draft Forest Management Plan	News Ads:		
	Hearst Le Nord	August 20, 2020 and October 15, 2020*	
	wawa-news.com	August 20, 2020 and October 15, 2020*	
	Mail out	August 20, 2020 and October 15, 2020*	
	* Draft Plan Review was originally scheduled for September 22th but was subsequently postponed due to resubmission of the Draft FMP. Follow up notices for revised Draft Plan Review were published/mailed on October 15th		

FMP Planning Stage	Location (forum or media)	Date	Attendees
Stage 4 – Review of the Draft Forest Management Plan	Information Forum to be held via individual or group remote meetings, upon request. FRMG tentatively to hold an information forum (by appointment) in Hornepayne the week of November 2nd.		TBD
	Public comments received at Stage = TBD		
Stage 5 – Inspection of the MNRF-Approved FMP	TBD	TBD	TBD

Table 2 provides a summary of all comments received and consideration of those comments. As per the *Freedom of Information Privacy Protection Act*, all personal and confidential information has been removed from correspondences, with all original comments held in confidence by the Wawa District MNRF.

To-date there have been no requests for issue resolution.

2021-2031 Forest Management Plan for the Nagagami Forest
Public Consultation Summary (updated to October 21, 2020)

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
1	General Public	16-Dec-19	Would like to see the road use strategies for the new Kenogami-Hornepayne Creek Road Link as one of the proposed corridors follows the Snowmobile Club's trail (part of one of the OFSC's "tourism" loops.	Sent email attachment with the road use strategies and the management objective (Table FMP-10).	None
1	General Public	18-Dec-19	Concerns the fact that the proposed road link is centered on operational/branch roads that have been utilized as part of the Hornepayne Snowmobile club trail network for many years. This is not noted in the analysis package, possibly due to the trail not being included in LIO, it is part of the data I provided to both the lumber company and MNRF in December 2018. Our trail follows Kenogami Road to Hornepayne Creek Road along the route indicated as the alternate route. If the Primary route is chosen there is still the ~1.5 km of overlap. Additionally this will mean that the approximately 7 km of trail to the North East of the proposed link will be plowed and utilized by the lumber company more regularly. This would create a significant barrier to this trail (although as an organization putting a trail on a primary road is a risk it is something to be considered). In favor of working with the lumber company to create a trail on the side of the road.	The proposed Hornepayne Creek-Kenogami primary road link will overlap with an existing segment of snowmobile trail, as identified to MNRF and industry in December, 2018. Industry also had discussion with individual indicating that by having the road updated to primary class would allow for a corridor wide enough to have the snowmobile trail along the side of the road.	None
3	Remote Tourism Operator	14-Feb-20	Biologists and tourist outfitters must insist that they have more influence on the Forest Management plan with regards to wildlife concerns. Motorized access (ATV or truck) has also had a critical impact on the decline in populations (specifically moose). Restricting access needs to be a priority. Suggestions were made to rectify ongoing concerns: Plan MEA's, Moose Reserves with no hunting permitted, close all new cut-overs to hunting until regrowth is high enough to protect moose, involve tourism operators in development strategies, start new hunting season on wolves, shorten moose hunting season, reconsider the current calf moose season.	Response was provided to proponant. While much of the suggestions around MEAs are outside of the scope of the FMP (i.e., enforcement, hunting restrictions, hunting seasons for moose/wolves), one of the remote tourism operators was involved in the Wildlife Task Team who completed the selection of candidate areas for the Draft FMP.	None
3	Remote Tourism Operator	N/A	Suggested some locations for MEA's to overlap with areas that already have access restrictions on the Nagagami Forest.	One of the remote tourism operators was involved in the Wildlife Task Team who completed the selection of candidate areas for the Draft FMP, some of which overlap areas with existing access restrictions.	None

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Public Consultation Summary (updated to October 21, 2020)

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
4	Forest Industry	1-Apr-20	Harvest of ROW corridors on Branch Roads should be at 40 m wide. The Nagagami is the only forest we work on that have a 30 m ROW (the others are 40 m plus. Also need to deal with off drain ditches for all season roads esp. located in low ground areas where water accumulates (ditches 1m deep x 30m wide x 50 m long).	This item was brought forward to the Operations Task Team. Some direction around intent, provisions and conditions for off-take ditches will be developed for inclusion in the Draft FMP	None
5	General Public	8-Apr-20	Preserve green space west of Hornepayne and east of Government Lake for community use and enjoyment, online vs face-to-face information center, interested in forest renewal and monitoring activities, concept of MEAs, and location of 'Buttercup Lane'. Proposed harvest allocations straddle recreational nature hiking and ski trails that are heavily used by the general public.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
6	General Public	14-Apr-20	I understand that there may be a proposed plan to cut within the Buttercup Trails. These trails are priceless to our community and by taking them away, changing them or doing any sort of cutting within them would be detrimental to our town. We have lost so much here, please do not take these trails from us too.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
5	General Public	15-Apr-20	Concerned with harvest allocations, specifically Wicksteed 126 and the potential for water quality issues as a result of harvest operations.	Individual recommended consultation with the Mayor and Council regarding preferred forest operations adjacent to Moonlight Lake to mitigate potential impact to water quality, or volume yield from the watershed.	None
7	General Public	15-Apr-20	We love to use the area known as the buttercup trails a few days a week. We walk and snowshoe the trail as a family and with our pets. To take this away from families and the community was be so upsetting.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
8	General Public	16-Apr-20	Using buttercup trails as a sacrificial distraction… Example is the regular harvest areas being proposed near Moonlight Lake.	N/A	None

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Public Consultation Summary (updated to October 21, 2020)

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
11	Township of Hornepayne	16-Apr-20	Unmapped values i.e. Moonlight Lake (Municipal Source Water Protection), Buttercup Trail Network, allocations around Larkin Lake and adjacent to HWY #631 and allocations near patent properties in and around Hornepayne.	GoToMeeting occurred 21-Apr-20 to document concerns and determine next steps. Sub-groups were formed as was a set of action items to come up with options for resolution of concerns. Also discussed was how to improve communications (posting map of proposed allocations at various locations in the community and have paper copies of comment sheets available).	None
9	General Public	17-Apr-20	Noise pollution from ongoing forest operations, would like standing timber along Hwy 631 to remain as it buffers traffic noise, snow drifting as a result of new cut-overs and roads, public consultation deadline of May 31st (would like to ensure input from seasonal cottagers), forest renewal (stand conversions) and protection of stick nests (may be new values in the area).	Due to inoperability, harvest allocations around West Larkin Lake have been reduced. Specifically, harvest operations have removed from both peninsulas found at the north end of West Larkin Lake. Also, further considerations have been made with regards to the residences on the lake. Forest industry is proposing a winter harvest during the off-peak use season. Industry is planning to access harvest allocations using an alternate route with limiting the crossing of West Larkin North Road to one specific location. By law, forest managers must carry out renewal and maintenance activities on harvested areas to provide for the sustainability of Crown forests in Ontario. FRMG has recently completed silvicultural liability analysis on the Nagagami Forest this spring and will be addressing outstanding silvicultural obligations.	None
10	General Public	21-Apr-20	No harvest directly adjacent to private property and concerns about harvest or logging traffic on Government Lake Road (access to the float plane base for tourists). Would like to see the Buttercup Trails protected.	Discussed plans to leave some area unharvested directly around his house and proposed winter CLAAG harvest in swamps in close proximity.	None
12	General Public	21-Apr-20	Individual very upset with current proposal to harvest timber adjacent to private landowners in Hornepayne. Also does not want to see harvest within the "Buttercup Trails" network which is really important to the community and used by many people.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None

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Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
13	Remote Tourism Operator	21-Apr-20	When looking at Caribou indicators none of the desired levels of harvest are achieved yet many values elsewhere on the landscape are being scarified (remote tourism). Under the Objectives many of the columns are "to be determined"… Current demands are met but desired levels for the long term are not achieved. Management for Tourism and other Values again "are to be determined". Road networks that are to connect the Nagagami and Martel/Magpie forest are of great concern to the Resource Based Tourism Industry. Any harvesting to occur within the AOC's of tourism lakes must be winter cuts and the area must remain roadless after any harvesting takes place.	Reponse was provided to the proponent describing assessement of objective achievement (i.e., TBD indicates objectives to be assessed at subsquent stages of plan development or during plan implemenation) indicating that concerns around moose populations have been forwarded to the MNRF, and that the current suite of MEAs were strategically placed to both capture suitable habitat amounts as well as to reduce the amount of new restrictions on the Forest. Response noted concern with no public information centre provided at Stage Three, and hope to be able to hold a public forum for review at Stage Four (Draft Plan). The response also described proposed conditions on roads in the vicnity of tourism lakes (AOC for main base lodge remote tourism lakes). as well as direction around MEAs to be included in the Draft FMP.	None
8	General Public	23-Apr-20	Proposed harvest allocation (Wicksteed 127) and proposed forest access road within the area known to the community as the buttercup trails and proposed harvest adjacent to Hornepayne's drinking water supply on Moonlight Lake (Wicksteed 126).	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
14	General Public	25-Apr-20	Buttercup Trails are maintained through local volunteers and enjoyed by many. If this area were harvested, not only would the animals be affected, but the natural beauty of the bushland would be devastated.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
15	General Public	26-Apr-20	I am very surprised that there is a proposal to cut the forest so close to town --- the Buttercup Trails are such asset to the town… Please think twice before destroying these trails. There is an incredible amount of renewable forest in northern Ontario. Do you really need to cut within several kms of Hornepayne?'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None

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Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
16	General Public	26-Apr-20	These trails are a great resource that many townspeople have utilised for decades throughout all seasons. I myself am not a resident of Hornepayne any longer but spent my first 18 years there and enjoyed these trails walking and skiing very often through my whole childhood. My family and I still use these trails everytime we visit Hornepayne. I would be so upset and angry to see them destroyed as Hornepayne doesn't have many recreational activities to begin with and cutting through them would destroy one of the only activities that are accessible from town.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
17	General Public	26-Apr-20	The proposed harvest area is a well loved and well used area for Hornepayne residents to use for skiing and walking. I have been skiing these trails for over 30 years. This is an integral part of our town! Proposed harvest area is alongside residents' private property. Wicksteed 123 & 127 are on the edge of town. We need our beautiful trees. This is also home to many birds and other wildlife.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
18	General Public	28-Apr-20	Harvest allocations (Wicksteed 123-127) will destroy hiking and ski trails in use since the 1970's. Deferal of harvest is recommended until the team can work out a resolution with the Buttercup Trails and green space around the town.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
18	General Public	29-Apr-20	Information request wondering if someone from FRMG put public information posters up and provided paper copies of comment sheets.	Currently there is a tote box sitting outside the FRMG office in Hornepayne for people to put their comment sheets in and folks can also find blank forms in there to fill out. An actual mailbox will replace the tote as soon as it arrives. Maps have also been displayed in the window of the FRMG office and we're looking into additional areas in the community to display large maps without being obtrusive. The attached poster describes where we are in the forest management planning process and will be posted at a few locations throughout the community.	None
3	Remote Tourism Operator	29-Apr-20	Information request wondering if he could be put in touch with Hornepayne Lumber to discuss forest operations around Kaby Lake.	Hornepayne Lumber staff followed-up	None

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Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
18	General Public	5-May-20	Disappointed with the public consultation efforts to date. Individual indicated that the locations of where the maps have been posted is insufficient. They would like to see a proper message centre / billboard sign be put into place close to the sidewalk and would also like to see some type of presence on social media i.e. Facebook “Hornepayne Happenings”.	Discussed where we are in the planning process and how it would be in everyone's best interest to have the trails formally recognized as a Land Use Permit (LUP). That way they would be in MNRF’s value system as that is the database we use for planning. Regardless of trail designation the individual was assured that the trails would not be "destroyed" via forest operations. Planning Team will look into developing a prescription. Also, the Plan Author participated in an Forestry Public Awareness Interview with the Mayor that will be posted on Facebook.	See above
19	General Public	Plan Author Received 07-May-20 (District Date Stamp N/A)	Concerned that the proposed allocation will destroy the Buttercup Trail network. It's vital to the health and well being of the community.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
20	General Public	Plan Author Received 07-May-20 (District Date Stamp N/A)	Will not be able to enjoy walking the Buttercup Trails. The trails are a big part of the Hornepayne community.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
21	General Public	Plan Author Received 07-May-20 (District Date Stamp N/A)	It is concerning because it will destroy the trails that we use all winter long. My family has been using these trails long before I was even born.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
22	General Public	Plan Author Received 07-May-20 (District Date Stamp 30-Apr-2020)	Wind. Don't need to use motor vehicle to access trail network, therefore, no green house effect. 'The buttercup trail is a natural outdoor beauty in our community. I have been flying over the region and there is enough bush around Hornepayne to be harvested without harvesting the proposed allocations of Wicksteed (123 and 127).'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
23	General Public	Plan Author Received 07-May-20 (District Date Stamp 04-May-2020)	I have fun with my family in the Buttercup Trails and would be sad if they cut down all the trees.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
24	General Public	Plan Author Received 07-May-20 (District Date Stamp 04-May-2020)	Town residents would lose their "Buttercup Trails" which are used on a daily basis. This would have an extremely negative impact on the well being of town residents.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
25	General Public	Plan Author Received 07-May-20 (District Date Stamp 24-Apr-2020)	Concerned about the increase in trucks and large equipment around town. Would like to see a buffer zone around what is called the "Bear Bear Loop" up to the power line. There are moose in this area and a lot of other wildlife… It gives people a chance to see them close to town on walks or x-country skiing. 'I have enjoyed the trails its good exercise in winter. It seems funny - we are denied access to some lakes and roads with the buffer zones around tourist lakes and now they want to cut right up to our back doors.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
26	General Public	11-May-2020 (Sheet Scanned and emailed to Plan Author)	Harvest location will destroy ski trails that are in present use.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
27	General Public	11-May-2020 (Sheet scanned and emailed to Plan Author)	The Buttercup Trail system is and has for many years been a source of outdoor activities for people who have very little else. I would not cut the trees off the trail system.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
28	Remote Tourism Operator	11-May-20	Individual concerned that important values have not been captured in the data.	Hard copy of large overview map will be made available to individual to show where known values are. Follow-up meeting will occur to discuss locations and values protection in detail.	TBD

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Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
29	General Public	12-May-20	As a life long resident of Hornepayne, I have used the Buttercup Trails for over 40 years; originally, as a young child and adult, and then in the last 10 years, consistently as a cross country skiing trail. They have been of great value to me, and a large majority of our citizens use them, in all four seasons. They have been, as you know, built and maintained by volunteers for many years and are a considered a treasure for our community...' Many teachers also bring their students on nature walks to the Buttercup Trails as part of their studies.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
30	General Public	14-May-20 (Sheet scanned and emailed to Plan Author)	The proposed operations will decimate the Buttercup Trail network. These trails have been an integral part of the community of Hornepayne's recreation for decades.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
31	General Public	14-May-20 (Sheet scanned and emailed to Plan Author)	Please protect the Buttercup Trails. Please protect the Government Lake Roadway and the cemetary.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
32	General Public	14-May-20 (Sheet scanned and emailed to Plan Author)	We use the buttercup trails almost daily, the trails are one of the very few walking trails close to town. If at all possible please reconsider the Wicksteed 127 cut area. This would negatively impact the community if the trails were to be removed.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
8	General Public	15-May-20	Concerned that harvesting operations area being proposed for the area designated as Wickstead 127, also known as "Buttercup Lane". The harvesting would take in the nature trail system.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
33	General Public	18-May-20	Preserve the Buttercup Trails in its entirety - no buffers, no interior cutblocks - leave a solid complete area surrounding the Buttercup Trails.' Individual is also frustrated with the way in which public consultation unfolded without an open house and the difficulties in filling out and submitting comment sheet online.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
34	General Public	19-May-20	I am completely opposed to the cutting of these trails. Leave them alone. The trails have been and continue to be used by so many in our community...'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
35	General Public	19-May-20	These trails are a part of what Hornepayne is all about and relies on for outdoor winter activity. It is part of the Hornepayne experience.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
36	General Public	19-May-20	I do not feel that cutting this area should be done. I am a original Hornepayne resident , and this town has lost enough, without losing this area. I am sure you can find another area to clearcut that would not be so detrimental to this town. I am thoroughly disappointed in the Governments decision and feel that not enough local input has been allowed. Please, please, please RECONSIDER this decision.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
37	General Public	20-May-20	Please do not take away one of the town's last pleasures, Buttercup Trail. It is widely used for recreation purposes and brings its people a lot of joy. We would really appreciate it if you would seek another piece of land away from a population that really loves its town and people.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
38	General Public	20-May-20	I am writing to express my concerns regarding the 2021-31 Nagagami Forest Management plan which is proposed to clear cut of the trail network. I am strongly objecting to this happening. These trails are our only trails we have in Hornepayne and should not be touched!!!!'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
39	General Public	21-May-20	Say no to clear cutting the buttercup trails. They have been a gem in hornepayne for over 30 years and many people still enjoy walking and skiing them. This would be just another nail in the coffin for the poor town of hornepayne.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
40	General Public	21-May-20	N/A - Comment form was blank.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
41	General Public	21-May-20	I am asking that you do not cut our Buttercup Trails. I use them a lot with my family. I love to walk through and play in them. Please cut somewhere else. Thank you.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
42	General Public	21-May-20	Please do not cut through our trails, we use them year round. There aren't a lot of things to do in our community as it is, please leave the trails for us. Thank you.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None

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Public Consultation Summary (updated to October 21, 2020)

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
43	General Public	22-May-20 (Sheet scanned and emailed to Plan Author)	Buttercup Trails have been in Hornepayne for 50 years and people look forward to the trails. For all you are going to get out of there, leave it alone.'	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
10	General Public	25-May-20	Concerned about values in the area: owls, a cemetery located on the Government Lake Road, Buttercup Trails, a residence located on Lot 19 and 20 that is accessed from Government Lake Road, A trapline is located from Hornepayne to Second Government Lake and beyond, and there are also several small inland lakes and creeks in this harvest area. The trapline, marten corridor, hiking and skiing trails, and bird watching are some of the activities and values that have been in place for many decades. Government Lake Road is a continuation of Third Ave. and has heavy traffic on it especially in the summer. Tourists use this road to access the float plane air base. Logging will ruin the beauty of the area and will be a hazard to other road users. Harvest will ruin the greenspace used by the Hornepayne community. Keep all harvest out of the high elevation/hills that moose use to yard up in early winter. 'My hope is no road and no cutting EVER'.	Values identified will be protected. Some modifications to harvest have occurred. The Planning Team has removed proposed harvest in the direct vicinity of Buttercup Trails in this ten-year forest management plan as we would like to take this opportunity to work with the community. A forestry access by-pass road is being planned to divert log haul traffic from using Government Lake Road. MEAs will be put into place to provide a greater focus on creating ideal habitat for moose.	None
11	Township of Hornepayne	25-May-20	Would like to see the plan push the harvest Wicksteed 123 & 127 to the second phase of the plan if possible as this may allow the township time to create a few strategies to help foster synergies when those harvests are completed.	Values identified will be protected. Some modifications to harvest have occurred.	None
11	Township of Hornepayne	26-May-20	Values to be added to the values map: Moonlight Lake (Raw Water Source), Buttercup Trail System, Cedar Point Park (Spurline Lake), Privately-owned Residential Property on Government Lake Road, Old Municipal Cemetery, Cree Lake Cottages and Larkin Lake Cottages and Boat Launch. Don't want to see too much harvesting around settled area of Township all at once, want reforestation to occur right away, move harvest away from Moonlight Lake until proper protection measures are put in place (consult with MOECP), protect Buttercup Trails, consult with Township regarding proximity to Spurline Lake and Government Lake Road.	Values identified will be protected. Some modifications to harvest have occurred.	None

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
44	General Public	28-May-20	Would like to see Buttercup Trails as a protected value in the forest management plan. Would like additional information regarding proposed operations in the vicinity of West Larkin Lake, values protection measures etc. Opposed to any cutting on the peninsula across from their home.	Due to inoperability, harvest allocations around West Larkin Lake have been reduced. Specifically, harvest operations have removed from both peninsulas found at the north end of West Larkin Lake. Also, further considerations have been made with regards to the residences on the lake. Forest industry is proposing a winter harvest during the off-peak use season. Industry is planning to access harvest allocations using an alternate route with limiting the crossing of West Larkin North Road to one specific location.	None
3	Remote Tourism Operator	29-May-20	Proponent indicated that some wildlife values are missing from the map (i.e., stick nests), and identified concerns including: current moose population levels, access (control) sign program, mining activities (creating access and impact to moose), lack of motorized access controls to protect wildlife populations, proposed that the area near the southeast corner of Kabinakagami Lake (area around Road 6 and Road 8) be closed to motorized vehicle and culverts be removed, MEAs should consider closing new cutovers to hunting or closing MEA to motorized vehicle traffic.	Reponse was provided to the proponent indicating that concerns raised (outside the scoped of the FMP re: wildlife populations, access controls under the Public Lands Act and mining activities) have been shared with the MNRF. As well, the response requested information for any known, unmapped values for inclusion on values maps for protection in the FMP. Some background information on planned MEAs was also provided to the proponent.	None
45	General Public	30-May-20	Landowner opposed to any harvesting activity near their home on the north side of West Larkin Lake. Any harvesting activity in or around that area would negatively affect property values and quality of life. Does not want West Larkin North Road used for harvesting activities.	Due to inoperability, harvest allocations around West Larkin Lake have been reduced. Specifically, harvest operations have removed from both peninsulas found at the north end of West Larkin Lake. Also, further considerations have been made with regards to the residences on the lake. Forest industry is proposing a winter harvest during the off-peak use season. Industry is planning to access harvest allocations using an alternate route with limiting the crossing of West Larkin North Road to one specific location.	None

2021-2031 Forest Management Plan for the Nagagami Forest
Public Consultation Summary (updated to October 21, 2020)

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
46	Nagagami LCC	31-May-20	Concerned over the establishment of MEAs as there's already a lot of restrictions in place for industry on the Nagagami Forest (Caribou Planning, Remote Tourism etc.). Would like to see proper documentation for the decline in moose population. Need to make sure there's also an adequate wood supply for the local mill. Public consultation needs to be improved moving forward as the online review is very limited to a select group of people who have experience in navigating the website. Need to make sure that we have an open house over the span of a few days.	Reponse was provided to the proponent indicating that concerns around moose populations have been forwarded to the MNRF, and that the current suite of MEAs were strategically placed to both capture suitable habitat amounts as well as to reduce the amount of new restrictions on the Forest. Response noted concern with no public information centre provided at Stage Three, and hope to be able to hold a public forum for review at Stage Four (Draft Plan).	None
47	General Public	Plan Author Received 01-Jun-20 (District Date Stamp 26-May-2020)	Forestry operations are in too close proximity to personal properties and would destroy the beautiful trails that are widely used by the community.	The Planning Team has decided to remove proposed harvest in the direct vicinity of the Buttercup Trail network in this ten-year forest management plan. We would like to take this opportunity to work with the community in developing a suitable area of concern prescription to protect this value into the future.	None
48	General Public	6-Aug-20	In a follow up to a letter sent by the plan author to cottage owners and residents on West Larkin Lake, the proponent asked to be added to the notification list for the 2021 FMP.	Client was added to District mailing list for the Nagagami Forest	None
49	Resource Based Tourism	30-Aug-20	In follow up to a meeting between two tourism operators and operations staff from HL, the client provided a copy of a bear stand protocol used in FMPs on adjacent management units, as well provided UTMs to sites on/near the Nagagami Forest.	HL to share a copy of the bear stand protocol with the planning team for consideration in the FMP. UTM points were reviewed but did not appear to be on the forest/affected by operations on the Nagagami.	Yes
50	Government	1-Sep-20	The proponent provided feedback/evaluation, based on the Stage 4 notification posting indicating no objection, but due to the lack of specific details, no comprehensive assessment could take place at this time.	Since the only spatial reference the proponent had at the time of review was a management unit boundary, the MNRF will follow up once the Draft Plan has been submitted to determine what detail is required to evaluate if any of the planned operations are of concern to the proponent.	Yes
51	General Public	4-Sep-20	In a follow up to the Stage 4 notification for Review of the Draft FMP, a property owner on West Larkin Lake, asked to know more about the proposed cutting	MNRF advised the proponent that the Draft Plan would soon be available for review and a remote meeting to review the planned operations is available upon request	None

2021-2031 Forest Management Plan for the Nagagami Forest
Public Consultation Summary (updated to October 21, 2020)

Reference #	Affiliation	Date	Summary of Input	How Input was Addressed/Action Taken	Action Pending
52	Remote Tourism Operator	9-Sep-20	Proponent followed up with MNRF to discuss upcoming FMP and discussions held with HPL staff to-date. Primary concerns expressed include viewscape and moose habitat.	In a series of emails, the MNRF and proponent discussed upcoming opportunities to review the plan, remotely, if possible, as well MNRF provided contact information for the District and Regional biologists	None
53	Government	7-Oct-20	The proponent provided feedback/evaluation, based on the Stage 4 notification posting indicating several property locations (i.e., pins) owned by the Ministry of Government and Consumer Services, indicating that is was the planning team's responsibility to verify if provincial government property will be affected by planned operations.	MNRF will review the list of property pins provided to verify properties are not affected by planned operations.	Yes

(l) Nagagami Local Citizens Committee (LCC) Report

NAGAGAMI FOREST LOCAL CITIZENS' COMMITTEE (LCC) PLANNING ACTIVITY REPORT – DRAFT PLAN

APRIL 1, 2018 – OCTOBER 21, 2020

The following has been prepared to meet the requirements of the 2017 and 2020 sForest Management Planning Manual that directs the LCC to produce reports of its activities during the preparation of the FMP. This is an updated report of activities for the Nagagami Forest LCC, as of October 21, 2020, for inclusion in the Draft 2021 Forest Management Plan for the Nagagami Forest.

The following provides a list of all members of the Nagagami Forest LCC, their affiliation and membership status.

Members of Nagagami Forest LCC – Updated to July 1, 2020

Name	Interest Group/Affiliation	Membership Status
Marg Zajac	Roads Committee	CHAIR/Member
Matt Reid	Hornepayne Snowmobile Club	VICE CHAIR/Member
Denis Andre		*Alternate*
Darrel Gaudreau	Bear Management	Member
Ryan Miles	Hornepayne Lumber LP	Member
Scott Lumb	Forest Industry (First Resource Management Group)	Member
Jeff Barton		*Alternate*
Zac (Marion) Zajac	Hornepayne Anglers & Hunters	Member
Tracey Gagliardi		*Alternate*
Jon Peroff	Township of Hornepayne	Member
Belinda Kistemaker		*Alternate*
Betty McGie	Remote Tourism	Member
Paul Smart		Member
Laurette Potvin	Hornepayne Sunshine (Seniors) Club	Member
Kerry Wood	Bait Harvesters	Member
Ann Groulx	Hornepayne Métis Association & Hornepayne Trappers	Member
Boris Michelussi	General Public	Member
Caroline Biribauer	Secretary/Treasurer	Non-member

The Nagagami LCC is a fairly active LCC with regular meetings held on the second Tuesday of each month. The following provides a list of the committee's activities during the preparation of the FMP, such including:

- The number and dates of committee meetings which were held during the planning process;
- The number and dates of joint meetings with the planning team*.

**Joint meetings include those planning team meetings where LCC representative were in attendance. Marg Zajac and Betty McGee are the co-planning team representatives for the LCC and at least one of them was present at the listed joint meetings.*

LCC and joint LCC/planning team meeting dates

LCC Meeting Dates	Joint Planning Team/LCC Meeting Dates*
April 10, 2018	August 15, 2018 - #3
May 8, 2018	January 23, 2019
June 12, 2018	April 24, 2019
September 11, 2018	May 15, 2019
October 9, 2018	June 6, 2019 – Desired Forest and Benefits Mtg
November 6, 2018	June 19, 2019
January 8, 2019	July 17, 2019
February 5, 2019	August 21, 2019
March 7, 2019	September 18, 2019
April 2, 2019	October 16, 2019
May 21, 2019	November 20, 2019
September 10, 2019	January 8, 2020
October 1, 2019	February 19, 2020
November 5, 2019	March 18, 2020
February 5, 2020	April 15, 2020
March 3, 2020	May 20, 2020
May 5, 2020	June 17, 2020
June 2, 2020	July 15, 2020
July 7, 2020	August 19, 2020
October 6, 2020	September 23, 2020
	October 21, 2020

<u>The following provides a summary of training opportunities provided for committee members and recommendations for improvements</u>:

- Long-Term Management Direction Training – October 16-17, 2018. This training was led by the Northeast Region (NER) and included instruction on forest sustainability, base model and scoping, regeneration standards and wood supply considerations, among other topics. Attended by one of the LCC Planning Team representatives.
- Desired Forest and Benefits Meeting (DFBM) – June 6, 2019. This meeting included presentations on the topics of current forest condition summary and objectives and indicators by (former) plan author Etienne Green, and a description and timeline of the DFBM by Regional Forester Krista Mayrand. Attended by seven LCC members. Recommendations for improvement to the FMP (i.e., a summary of the desired forest and benefits) produced from the meeting can be found summarized as an Appendix to this report (Appendix A).
- Proposed Operations training – October 2-3, 2019. This training included instruction on Crown land use planning, First Nation and Métis values, the new water crossing protocol and determination of sustainability, among other topics. Attended by one of the LCC Planning Team representatives.
- Recommendations for Improvement: Historically there seemed to be more opportunities for LCC members to get training and/or network with other LCC members. This was likely via

Regional Advisory Committee (RAC) workshops and Annual Update Training (i.e., knowledge/policy transfer sessions) hosted regionally. These sessions provided valuable information to LCC members as well as offering key opportunites to network with other LCCs.

Participation in the development of the values maps and the LTMD

- The NFLCC did not participate in the development of the values maps
- NFLCC members were provided with background information at their May 8th, 2019 meeting in preparation for the Desired Forest and Benefits (DF&B) meeting on June 6th, 2019. Results of the DF&B meeting were shared with the NFLCC at their September 10th, 2019 meeting, where Etienne Green (former plan author) also presented the proposed long-term management direction.

Participation in public consultation efforts

- The chair of the NFLCC is identified as a contact in newspaper advertisements and other FMP notices. As well, many of the committee members are approached by individuals from the public or their interest sector with questions regarding forest management in general, and the 2021 FMP, specifically. These questions are often referred to the broader LCC, the MNRF or the planning team for follow-up.
- At this time there have been no public information centres for the NFLCC to participate in, however both NFLCC Planning Team Representatives sit on the Communications Task Team and several of the planning team responses to comments received at Stage Three of Public Consultation (Proposed Operations) were vetted through this task team.

Participation in the issue resolution process

- To date, no issue resolution process has been initiated for the 2021 FMP.

A discussion of the problem and issues addressed by the committee

- To date, no FMP issues have been addressed by the committee.

An assessment of the cooperation provided to the committee by the MNRF and the plan author

- There has been good level of cooperation provided to the community by the MNRF and the plan author.

Opportunities for Improvement

- While understanding the need to provide opportunities for people to connect to meetings remotely, this removes some of the human element from LCC and Planning Team meetings, which may diminish the overall engagement (i.e., delivery of a powerpoint presentation versus having a discussion over maps laid out at a meeting)

An assessment of the effectiveness of the committee's structure and any recommendations for change

- The LCC was provided a survey questionnaire during Stage 2 (Development of the Long-term Management direction) that served as a self-evaluation of the committee's effectiveness. On average (based on three responses), the average score was 8.8 percent (given equal weighting to the categories of Informed, Involved, Influential, Representative and Functioning. The detailed survey results are found as an appendix to this report (Appendix B).
- The LCC will be provided with a second questionnaire during their November meeting (Stage 4; Review of the Draft Forest Management Plan) to re-assess the evaluation of their effectiveness. These results will be updated in the Final LCC Report which will be available in the Final FMP.

A discussion of the committee's general agreement or disagreement with the FMP

The proposed long-term management direction was presented to the NFLCC on September 10th, 2019.

Following the planned presentation of the Draft FMP to the NFLCC at their November meeting, the NFLCC will provide a brief statement of the committee's general agreement or disagreement with the Draft FMP.

This statement will be updated and included in the final plan.

Prepared by Marg Zajac and Sarah Sullivan

Appendix A – A summary of the input received at the NFLCC's Desired Forest and Benefits Meeting

Social and Economic Category

- Enforcement – how to ensure existing 2011 objectives are adhered to (e.g., not allowing illegal trails into outfitter areas) - White Owl Rd.
- Have website to identify fish and restrictions for each lake; suggest signs so people (FISH ON) know where they can and cannot go
- Once draft RSA MOA created, would like opportunity to incorporate objective to follow MOA
- Make good on previous problem areas created by former SFL/FRLs/Contractors
    - fix past problems
- Reaffirm benefits of fibre supply from 2011 FMP
- Reaffirm protection objectives re. CH areas
- Reaffirm benefits and values of the tourism industry – it is an export market, 90% of receipts stay in local area
- Have access to social benefits of the local population (to enjoy forest, hunting, fishing, berry picking, motorized or other access, fuelwood)
- Don't forget CLUAH – Crown Land Use Atlas Harmonization Project
- Safe and reliable road access on the forest, including for ATVs, snowmobiles
- Financial and social stakeholders on the forest
- Have safe snowmobile/logging interactions; consider parallel road and snowmobile trail for Bobcat Loop

Silviculture Category

- Burn instead of spray in spring-fed aquatic watershed
- Consider location of spray. Are there alternatives to spray?
- No spray
- Try more prescribed fires
- Keep bees – avoid spray that kills bees
- Partner with First Nations for alternatives to herbicide
- What are effects of spraying, e.g., falling snow?
- What are effects of spraying on non-target species (e.g., swallow, grosbeaks, monarchs)?
- Try to reduce use of herbicide and look for alternatives, e.g., mechanic/manual brush saw, backpack spray)
- Conduct aerial seeding, particularly after a prescribed burn to emulate natural processes
- Be successful in regenerating the forest
- Continue CLAAG in appropriate lowland black spruce sites
- Explore potential impacts of climate change on forest regeneration
- Avoid rapid thaw, maintain forest cover/canopy, in headwater areas to lakes/riparian areas, specific to lakes that depend on a consistent water rise (e.g., so that spawning is not negatively affected)
- Conduct commercial thinning and intensive management in red pine plantation near mill

Forest Diversity – Forest Cover Category

- Healthy moose habitat wanted
- Perception the emphasis is on caribou habitat instead of moose habitat, at expense of moose, i.e., losing moose habitat over time

- Rehabilitate, by introducing animals, caribou migratory route from continuous caribou habitat to Lk Superior through discontinuous caribou zone (i.e., between Granitehill Lake and Obakamiga Lake)
- Don't want DCHS in discontinuous zone
- Concern with increase in cow vs bull tags; don't agree with the provincial target of 1 female cow:1 male bull sex ratio. More cows are needed than bulls
- Don't want caribou management to be at the detriment of moose habitat
- Update and reaffirm landscape guide targets
- Can we bring back lost species e.g., monarchs? Also see the list of species in Silviculture portion of this summary

Appendix B – NFLCC Self Evaluation of their Effectiveness; Stage 2 - LTMD

Nagagami Forest 2021-2031 Forest Management Plan	
Local Citizens' Committee Self Evaluation of their Effectiveness	
LCC Name: Nagagami Forest Local Citizens' Committee	
Forest: Nagagami Forest	
Stage 2: PROPOSED LONG-TERM MANAGEMENT DIRECTION	Rating
	1 = low
Informed	10 = high
I understand the FMP process	8.7
Adequate training and information was given to me to assist me in understanding the FMP process	8.7
I have an adequate understanding of the components of the FMP	9.0
Sufficient accurate information was provided to me to enable me to make informed decisions	8.3
Planning team members assisted me, as necessary, to understand the FMP	9.3
Member Average	8.8
Involved	
I attended all organized LCC functions and events	8.0
I have been given adequate opportunity to voice my opinions within the LCC	9.3
I have been a regular participant in LCC discussions	10.0
I feel that the planning team considered all viewpoints in developing the FMP	9.3
Member Average	8.9
Influential	
The LCC is effective at influencing decisions made in the FMP	9.0
I am able to personally influence the decisions made in the FMP	9.0
I feel that the Planning Team considered my opinions in forming their decisions	8.7
Member Average	8.9
Representative	
I was able to represent the views of my stakeholders as a member of the LCC	9.0
I actively engaged my stakeholders in discussions about the forest management plan	8.0
The LCC contains a broad crossection of stakeholders	8.3
I feel that other members on the LCC accurately reflected their stakeholders viewpoints	9.3
Other LCC members were regular attendees of committee meetings and related functions	7.7
Member Average	8.5
Functioning	
The LCC worked toward consensus decisions	9.0
The LCC members respected and considered others' viewpoints	9.0
The LCC members participated in discussions and decisions	9.0
LCC meetings and functions were well-organized and well-run	9.3
Member Average	9.1
Total Average	8.8

(m) The Final List of Required Alterations and Major Changes

The product of the MNRF review is a draft final list of required alterations, with the reasons for the required alterations. The list is a compilation of required alterations from MNRF reviewers and includes the consideration of comments from the LCC.

The MNRF person designated as coordinator in the project plan (Part A, Section 1.1.2.2) will coordinate and prepare the draft list of required alterations. Plan reviewers will prioritize their review of the draft FMP and provide comments as early as possible to the coordinator. The coordinator will provide the plan author with the draft list of required alterations at specific stages of the review period in accordance with the approved project plan (Part A, Section 1.1.2.2). The coordinator, with assistance of the plan reviewers and plan author, will prepare the final draft list of required alterations during the last 20 days of the period for the review of the draft FMP.

Following the public review of the draft FMP the plan author and the MNRF will compile comments that were received from the public. The MNRF will also compile comments that were received from each First Nation and Métis community, through the agreed upon consultation approach with the First Nation and Métis community (Part A, Section 3.4), or the consultation efforts described in Part A, Section 3.5.

Normally, within 5 days of the completion of the public review of the draft FMP, the plan author and planning team will review the comments from the public and First Nation and Métis communities, and determine if any changes or additions are required to the draft final list of required alterations. The list will now become the final list of required alterations. If the plan author and planning team cannot decide on whether to incorporate comments from the public and First Nation and Métis communities in the final list of required alterations, the MNRF district manager will decide. An issue resolution decision (Part A, Section 2.4.1) made during the public review of the draft FMP will be reflected in the final list of required alterations. Required alterations relating to the manipulation of forest cover will be certified by an MNRF registered professional forester.

Under the authority of the MNRF district manager, MNRF will provide a written response to describe actions (if any) taken to address changes requested to the LTMD or proposed operations during the public review of the draft FMP to:

(a) any person who has requested a change to the draft plan; and
(b) any other person known to be directly affected by the manner in which a requested change has been addressed.

The final list of required alterations or written response provided will be accompanied by a notification which specifies that any person may request a formal review of a specific decision in the FMP by the MNRF regional director, in accordance with Steps 5 to 7 of the issue resolution process described in Part A, Section 2.4.1 of the FMPM (MNRF, 2020).

(n) The Planning Teams' Terms of Reference

Terms of Reference

for the

Preparation of the

2021 – 2031 Forest Management Plan

for the

Nagagami Forest

April 5th, 2018

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Terms of Reference

for the Preparation of the

2021 - 2031 Forest Management Plan

for the

Nagagami Forest

These terms of reference meet the requirements of the Forest Management Planning Manual (2017) and the Forest Information Manual (2017). As plan author, I am committed to my role in ensuring that this Forest Management Plan is produced on schedule as described in these terms of reference and in compliance with all relevant legislation.

Prepared By:

Dale Goodfellow, R.P.F., Plan Author — Date: July 23/2018
Planning Forester
Jack Fish River Management Inc.

I acknowledge the responsibilities of the plan author and other employees of my organization who are members of the planning team:

Senior Company Official:

Carlo Bin — Date: July 23/2018
President
Nagagami Forest Management Ltd.

Endorsed By:

John Peluch, District Manager — Date: August 1, 2018
Wawa District, Ministry of Natural Resources and Forestry

Deb Weedon — Date: Aug 8/18
Regional Resources Manager, Northeast Region
Ministry of Natural Resources and Forestry

Approved by:

Corrinne Nelson, Regional Director — Date: Aug 9, 2018
Northeast Region Ministry of Natural Resources and Forestry

1.0 INTRODUCTION

These terms of reference in conjunction with the associated project plan will guide planning efforts to prepare the Forest Management Plan (FMP) for the ten-year period from April 1, 2021 to March 31, 2021. The revised Forest Management Planning Manual (FMPM), approved in July 2017, will be used for the development of the entire FMP.

2.0 ORGANIZATION FOR PLANNING

This section provides the organizational structures established to ensure the timely completion of the FMP. Those structures include the steering committee, planning team, plan advisors and plan reviewers. More detailed descriptions of roles and responsibilities for these groups including any other task teams set up to facilitate production of the FMP can be found in the associated project plan.

2.1 Steering Committee

The steering committee monitors the production of the plan, ensures resources are available, and resolves issues affecting plan production brought forward by the planning team. If needed the steering committee will meet prior to the planning checkpoints to review the production of the plan and any issues that could affect the timely preparation of the plan.

The steering committee will seek input from First Nation and Metis community representative(s) on the planning team when making decisions on issues and disagreements among planning team members. And if the matter goes to a vote, a First Nation community representative will be brought in as a voting member on the steering committee for the purpose of the vote which is perceived to affect the First Nation communities.

List of Steering Committee Members:

Name	Organization and Title	Role
John Peluch	Wawa District Manager, Ministry of Natural Resources and Forestry (MNRF)	Chair and MNRF, Wawa District Representative
Carlo Bin	President Nagagami Forest Management Ltd.	SFL Representative
Deb Weedon	Regional Resources Manager, MNRF	MNRF, Northeast Region Representative

2.2 Planning Team

A multi-disciplinary planning team has been assembled to guide the development of the FMP. The planning team is a working and decision making group with all members participating in plan production. The plan will be prepared with the assistance and advice of the local citizens' committee (LCC) and plan advisors. The plan author oversees and participates in the writing of the plan and team members are expected to make contributions to the content of the plan. Not all members of the planning team, however, need to be involved in all aspects of plan development.

The roles and responsibilities of planning team members are described in Appendix 1 of the project plan.

Planning Team Member	Affiliation	Position/Broad Role on Planning Team
Megan Finlay	MNRF Northeast Region	Regional Planning Forester (Project Manager/Planning Team Chair)
Jon Peroff	Jackfish River Management Ltd.	SFL Representative
Dale Goodfellow	Jackfish River Management Ltd.	Plan Author/Planning Team Chair
Mitch Long	Jackfish River Management Ltd.	Silviculture Forester
Neil McLean	Jackfish River Management Ltd.	Forest Analyst
Brian Harbord	MNRF Wawa District	Management Forester
Derrick Romain	MNRF Northeast Region	Regional Planning Biologist
Kamala Rupakheti	MNRF Northeast Region	Regional Analyst
Kathleen Cote	MNRF Wawa District	Management Biologist
Jennifer Pine	MNRF Wawa District	Resource Liaison Specialist
Tricia Young	MNRF Wawa District	District Planner
	Industry Representative	Representative of overlapping licensees and wood supply beneficiaries
Jennifer Tremblay	MNRF Wawa District	Administrative assistant
Pierre Brouzes	Columbia Forest Products	Hardwood Industry Representative
Steve Thuerig	Thurig Forestry Consulting	Industry Representative
Marg Zajac	Local Citizens Committee Chair (Roads Committee)	Nagagami Forest LCC Representative
Betty McGie	Local Citizens Committee	Nagagami Forest LCC Representative
Not yet determined	Hornepayne Aboriginal Community	Indigenous Representative
Peter Rasevych	Ginoogaming First Nation	Indigenous Representative
Not yet determined	Constance Lake First Nation	Indigenous Representative
Juanita Starr	Biigtigong Nishnaabeg (Pic River) First Nation	Indigenous Representative
Jesse Gaudette	Pic Mobert First Nation	Indigenous Representative
Not yet determined	Red Sky Metis Independent Nation	Indigenous Representative
Not yet determined	Metis Nation of Ontario	Indigenous Representative
Not yet determined	Brunswick House	Indigenous Representative

2.3 Task Teams

Task team members are planning team members and advisors who are assigned to sections of the plan and address issues related to those sections. The task team lead will present to the planning

team the draft plan sections and recommended solutions to issues. Task teams' responsibilities are described in detail in the project plan.

The following task teams will facilitate production of the FMP. Leads are identified in the project plan.

- **Modeling and Analysis Task Team:** Members will conduct and oversee computer modeling and analysis.
- **Operations Task Team:** Members will develop operational prescriptions, such as areas of concern (AOCs) and conditions on regular operations (CROs), and will finalize the selection of areas of operation: operational road boundaries, aggregate extraction areas and road corridors. Operations will be planned in accordance with the Forest Management Planning Manual (2017).
- **Silviculture Task Team:** Members will draft the silvicultural ground rules (SGRs) and the monitoring and assessments program, and finalize the renewal and maintenance areas.
- **Indigenous Task Team:** The task team will lead discussions on the Indigenous involvement in the plan preparation. Members will support Indigenous involvement at each stage of the preparation of this FMP.

2.4 Plan Advisors

Plan advisors will provide technical advice and support, serve on task teams, and assist the planning team in the development, production, and review of the plan.

SFL	**Position**
Jerry Smith	President/CEO and Operations Manager
Boris Michelussi	Vice President and Operations Forester
Craig Heinrich	Operations Supervisor
Brent Miron	GIS Technician
Consultants	
Don Larmer, R.P.F.	White River Forest Products
Wawa District MNRF	
Anne Lawson	GIS Data Technician
Doris Zagar	Fish and Wildlife Technical Specialist
Corey Young	Aggregates Technical Specialist
Kathleen Couture	Forestry Technical Specialist
Bruce Moore	Resource Management Technician
Zachary White, R.P.F.	Resources Management Supervisor
Shawn Fortin	Lands and Water Technical Specialist
MNRF Regional/Provincial	
Michael Liukko, R.P.F.	A/Forest Management Planning Specialist
Heather Farrer, R.P.F.	Forest Industry Liaison Officer
Todd Copeland	Species at Risk Specialist
Justin Standeven	Regional Planning Coordinator
Andre St. Louis	Regional GIS Officer
Renée Bellini	Cultural Heritage Specialist
Gary Higgins	Regional Indigenous Advisor
Alex Howard	Regional Lands Specialist
Derek Seim	Regional Aggregates Specialist
Aaron Stacey	EFR Fire Science Specialist
Greg Kirkland	Fire Management Supervisor
Megan Rasmussen	Regional Terrestrial Ecosystems Science Specialist

Gregg Lloyd, R.P.F.	Regional Operations Specialist
Science Advisor:	
Gordon Kayahara	Regional Forested Ecosystem Science Specialist
Parks Advisors:	
Ed Morris	Ontario Parks Planner/Zone Ecologist
Kevin Wilson	Parks Superintendent
Ministry of Northern Development and Mines:	
Catherine Daniels	North East Regional Land Use Geologist
Anne Marie LeRoy	Northern Development Officer
Ministry of Environment and Climate Change	
Madhi Ramadoss	Pesticides Specialist
Ministry of Tourism, Culture and Sport:	
James Antler	Policy Advisor (Tourism)

2.5 Plan Reviewers

The Regional planning forester will coordinate the preliminary review of plan components (in development) and the formal review of the draft and final plans, and produce the preliminary and final list of required alterations. Plan reviews are classified as follows:

- Operational review: Confirms that planning team decisions and the consideration of public comments are reflected, calculations are correct, and that the draft planned operations is complete and understandable by those who must refer to, implement and/or monitor the planned operations.
- Advisory review: Focuses on matters that have cross-district or broad regional implications; ensures consistent and accurate application of forest management guides and other applicable advice in draft plan operations.
- Preliminary Review: Provides an informal review of plan components as they are developed prior to the formal submission of the draft FMP.

The following individuals will participate in plan review. Details are outlined in section 2.4 of the project plan.

Plan Reviewer Name and Position	Roles and Responsibilities
Megan Finlay, R.P.F., Regional Planning Forester	Operational/Advisory Review, Preliminary Review
Brian Harbord, R.P.F., Management Forester	Operational Review, Preliminary Review
Derrick Romain, Regional Planning Biologist	Operational/Advisory Review, Preliminary Review
Kathleen Cote, Management Biologist	Operational Review, Preliminary Review
Kathleen Couture, Forestry Technical Specialist	Operational Review
Adam Tomasini, Integrated Resource Management Technical Specialist	Operational Review
Tricia Young, District Planner	Operational Review
Bruce Moore, Resource Management Technician	Operational Review

Chantal Chauvin, Regional Planner	Operational/Advisory Review
Jennifer Pine, District Resource Liaison Specialist	Operational/Advisory Review
Michael Liukko, R.P.F., A/Forest Management Planning Specialist	Advisory Review
Gary Higgins, Regional Indigenous Advisor	Advisory Review
Kamala Rupakheti, Regional Forest Analyst	Operational/Advisory Review, Preliminary Review
Heather Farrer, R.P.F., Forest Industry Liaison Officer	Advisory Review
Aaron Stacey, EFR Fire Science Specialist	Advisory Review
Greg Kirkland, Fire Management Supervisor	Advisory Review
Gordon Kayahara, R.P.F., Regional Forested Ecosystem Science Specialist	Advisory Review
Corey Young, Aggregates Technical Specialist	Operational Review
Shawn Fortin, Senior Lands & Waters Technical Specialist	Operational Review
Zachary White, Resources Management Supervisor	Advisory review
Andre St. Louis, Regional GIS Officer	Operational/Advisory Review, Preliminary Review

2.6 Operation of the Planning Team

The planning team will provide the professional and technical expertise required to prepare the FMP according to the requirements of the Forest Management Planning Manual (FMPM, 2017) and these terms of reference. The plan author must be a registered professional forester, and the MNRF must have at least one registered professional forester on the planning team. The planning team will have decision-making authority within the requirements set out in the CFSA. Guidance and direction on specific issues will be provided to the planning team by the steering committee, plan advisors, reviewers, and the LCC. More detailed descriptions of the planning team responsibilities are listed in Section 2.2 of the project plan.

In addition to the specific responsibilities assigned to each planning team member (outlined in Appendix 1 of the project plan), each member will:

- Attend planning team meetings regularly, outline the concerns of their constituents in decisions and effectively perform their specific roles and responsibilities;
- Actively participate in each planning team meeting and show respect for other members' concerns, values, and views;
- Contribute to agenda items as required;
- Review draft planning team minutes;
- Ensure assigned tasks are completed as per the production schedule timelines and notify and discuss with the project manager anticipated delays in completing these tasks;
- Assist with the development of objectives and targets to be met by the FMP;
- Assist in developing optional strategies to meet objectives and targets, and assist with resolving issues related to operational planning;
- Identify issues to be taken to the planning team, plan advisors, steering committee and the LCC;

- Familiarize themselves with the management unit by assisting in collection and review of background information, resource management guidelines, and other plans which may influence management of the forest;
- Provide ongoing input, and develop and review selected sections of the plan as assigned by the Regional planning forester;
- Review plan progress and products as prepared within their scope and position;
- Participate in public consultation, including Indigenous involvement - particularly information centres;
- Serve as a liaison with interested individuals and groups;
- Help identify individuals being affected by planned activities;
- Assist in recording and responding to public comments;
- Attend training sessions as required; and
- Assist in the recommendation for certification and approval of the final plan.

Planning Team Meetings

- Will be held every month, at a pre-determined date, unless it is determined that for a given month a meeting is not necessary.
- The agenda will be prepared by the chair or plan author and provided to the project manager for distribution prior to the meeting along with as much presentation/background information as possible.
- Planning team members will review relevant material prior to the meeting and will be prepared to participate in planning discussions and decision making.
- Planning team members are expected to attend all planning team meetings.
- Plan advisors may attend meetings to make a presentation or provide advice.
- Planning team members may invite interested or concerned parties to make presentations and participate in discussions or to take part as observers with prior consultation with chair or project manager.
- The planning team will also be available to meet and discuss issues with stakeholders affected by proposed operations. This will provide an opportunity to engage in discussions to initiate the process for the resolution of any conflicts. Where major issues arise, a separate process of stakeholder meetings may be required prior to information centres.
- The minutes of each meeting will indicate: date, location, start and end time, attendance (including regrets and absences), outline of topics and discussions, document decisions and contain a list of action items. Draft minutes will be distributed to all in attendance at the meeting, reviewed and revised as required. The final minutes of each meeting will be approved at the next meeting or subsequent meetings as may be required, and distributed in accordance with the communications plan (see below) and will then form part of the official record.
- Background information will be provided ahead of time as required, if possible, for review prior to meetings

Meeting Protocols

- All members will have an opportunity to express their views.
- Members will be respectful of other members or visitors.
- Discussions should remain focused on the topic at hand.
- The chair will control the speaking order to ensure that all planning team members have an opportunity to participate in the discussions.
- Members will discuss potential conflicts of interest with the chair and, when necessary, remove themselves from the meeting and decision making process for that topic.
- The planning team must ensure that no individual group is excluded from decisions, and each interest group must have appropriate representation for decisions to be made.
- Decisions will be documented in the meeting minutes, providing an opportunity for review by all members.

Decision Process

Whenever possible, the planning team will make decisions by consensus. To seek consensus:

- All members will be provided with the necessary opportunity to fully express their viewpoints and will be expected to provide input.
- All members will be respectful of the opinions of other members and will give their input full consideration.
- The chair will periodically poll the group to determine if there is a progression toward consensus and to focus discussion on any significant difference of opinion.
- Differences of opinion will be thoroughly discussed with an emphasis placed on:
    - Attempting to understand conflicting viewpoints.
    - Clarifying any misinterpretations and focusing discussions on specifics.
    - Seeking to identify modifications that will move toward a mutually acceptable solution.
- If a consensus cannot be attained, the majority and minority opinions are to be carefully recorded and forwarded to the steering committee for advice or action.

Resolution of Differences between Planning Team Members:

During the preparation of the FMP, a planning team member may identify an issue for specific attention. The issue will normally be addressed and resolved by the planning team in the manner outlined above. Any significant disagreements or conflicts among the planning team, or significant differences in consistency in application of any direction or process applicable to FMP production, will be referred to the steering committee for review.

The project manager will arrange a meeting between the steering committee, designated planning team members and applicable FMP advisors necessary to resolve the dispute. An issue summary will be provided to the steering committee in advance of the meeting, describing the background to the issue, points of consensus or agreement, efforts made to resolve the issue and options for resolution of the issue. A presentation will be made to the steering committee outlining the issue and possible options. Any significant differences in consistency in the application of any direction or process applicable to FMP production will be reviewed; where there will be differences in approaches in use of direction in the FMP, the rationale for those differences will be documented in the Additional Plan Products sections of the FMP. The regional representative may seek advice from the Regional Director. The District Manager, as chair of the steering committee, will provide a written copy of the decision to the planning team members, the plan author, and the FMP advisors who participated in the discussion.

3.0 PLAN PRODUCTION, REVIEW AND APPROVAL

3.1 Schedule for Plan Production

See Appendix 2 of the project plan for a schedule of plan production which details the plan components/requirements as per the FMPM.

3.2 Key Plan Production Deliverables and Associated Issues

Key deliverables prepared for the development of the forest management plan will include, but are not limited to, a planning composite inventory, base model inventory and base model, long-term management direction, planned operations covering 2021 to 2031, draft and final plan, plan summary, and associated tables and supplementary documentation as required by the FMPM.

The following issues and challenges have the potential to impact the plan production schedule. Where appropriate, task teams will be established and advisors identified to address these issues.

Species at Risk
Endangered Species Act 2007, Exemption expires July 1, 2018, and a new Species at Risk Guide is anticipated sometime in late 2017 or 2018. Based on comments received during a EBR posting earlier this year, a decision was filed April 9, 2018 that will provide forest industry a 2 year extension that now expires July 1, 2020.

Customized Consultation Approach with Indigenous Communities
Customized Consultation Approaches may require certain activities to occur prior to Indigenous communities being in a position to provide input into key deliverables. Approved consultation approaches will lay out these requirements. The planning team shall coordinate these activities into the planning schedule.

eFRI
The eFRI requires a significant work load to verify and correct the data prior to use. There could be issues with the results of two-tiered photo interpretation. Any issues associated with the eFRI have the potential to delay plan production.

New Forest Management Planning Manual
No phase-in provisions will be required for the 2021 FMP as the new FMPM (2017) will be fully implemented. However, there is new direction associated with the new manual that may take additional time to accommodate, i.e., Silviculture Enhancement Initiative (SEI).

3.3 Additional Plan Products

During plan production, the planning team may be asked (by a planning team member or external to the planning team) to include an additional plan product in the FMP. The planning team will consider inclusion of these additional products using the decision making process identified above, as well as the Process Streamlining Test (PST). The decision on the request for additional plan product/content will be documented in the minutes of the planning team meeting (or some other agreed upon forum).

The PST is a useful tool for considering the need for additional plan content or products and is comprised of the following questions:

1. What is the objective of the requirement (for additional plan content/products)?
2. Is the requirement necessary to meet the objective?
3. Is the requirement as simple, cost effective and efficient as it can be?
4. What alternatives or change will lead to a positive response to the above?

3.4 Analysis Tools

The following tools are approved for use for the FMP development. Other tools or products may also be used for supplemental purposes as required.

Analysis Tool	**Description of Use**
SFMM (Strategic Forest Management Model)	a) Projection of forest conditions through time, b) Determination of levels of harvest, renewal and tending activities, c) Wood supply modeling including determination of available harvest area, d) Assessment of sustainability.
Ontario Landscape Tool (OLT)	Habitat planning and analysis, development of landscape class targets associated with the Landscape Guide.
Water Classification Tool	Classifies water data into the classes defined in the Stand and Site Guide.
Heritage Assessment Tool (HAT)	Determines areas of high potential cultural heritage.

Analysis Tool	Description of Use
Modeling Inventory Support Tool (MIST)	Prepares and validates base model inventory for use by SFMM, including yield curve development.

3.5 Draft and Approved Forest Management Plan Distribution

The plan author will submit the draft and final plans in electronic format (via the Forest Information Portal) as described by the *Forest Information Manual FMP Technical Specifications (2017)*.

Electronic versions of the draft and approved Forest Management Plan will be available on MNRF's and VFM's website for electronic forest management plans.

Plan text and summaries will be distributed in a format that is compliant with the Accessibility for Ontarians with Disabilities Act (AODA), using templates provided by MNRF. Map products, however, require a level of detail and colour that are not fully compatible with AODA compliance, and therefore are exempt. FMP tables will meet AODA requirements as closely as possible given the size and complexity of each table.

4.0 COMMUNICATIONS PLAN

4.1 General

The FMPM identifies the need for a communications plan to ensure all interested parties are involved with and are aware of formal opportunities to comment on all aspects of the development of the FMP. The MNRF is responsible for the preparation and delivery of the communications plan.

4.2 Internal Communications

The planning team will hold meetings and record/distribute minutes of these meetings to the planning team members and MNRF Regional advisors, and to groups or individuals as appropriate for the content of the meeting minutes (including the steering committee). The project manager in conjunction with the planning team chair will maintain frequent communications with team members to assess progress and share information.

Meeting hosting, and record keeping costs will be split evenly by the MNRF and the Company.

Task team leads are responsible for maintaining communication with the planning team by providing regular updates.

Planning team members play an important role in liaising with staff not directly engaged in forest management planning. Their role is to engage and represent their views at planning team meetings.

The District MNRF office will be responsible for providing French language services (FLS) and will have FLS staff present at all information centres.

4.3 Communications with the Local Citizens Committee

The LCC will be kept informed and updated with respect to the plan production through regular updates at LCC meetings. Individual issues or concerns that arise during the preparation of the plan will also be brought to the LCC for discussion and advice.

Copies of FMP planning team meeting minutes will be provided to LCC members and discussed at regularly scheduled LCC meetings.

4.4 Communications with Plan Advisors

Plan advisors will be contacted to provide advice and assistance within their area of expertise throughout the development of the FMP. Advisors will also be available to review specific plan components in advance of progress checkpoints and/or key milestone dates. The planning team minutes and notifications provided to plan advisors by the Regional planning forester will be stored electronically (e.g., Basecamp or other web-based accessible forum).

Where other agencies or ministries have determined they have specific interests that should be addressed in the FMP, the advisors for those organizations will be contacted when those interests are to be discussed by the planning team. Every attempt will be made to provide the advisors with sufficient lead time to make arrangements to attend specific planning team meetings if they wish.

4.5 Consultation Schedule

The schedule for consultation is included in the project plan (Appendix 2).

4.6 Public Notices

External notification throughout the planning process will occur primarily through direct mailings, local newspaper ads, Environmental Registry information notes and news releases. Other notification methods may include e-mail or web postings. The required public notices for each stage of the planning process will be developed/arranged by the MNRF Regional planning forester (project manager) and posted/organized by the MNRF.

Supplementary notices, approximately one week prior to the scheduled date of information centres, may be issued by MNRF, LCC or SFL holder as a reminder to the public of their opportunity to participate.

Summary of Notices for Each Stage of Consultation

Notice Type	**Remarks**
Mailed	Mailing list number – **236**
Newspaper	Notices to be placed in the following newspapers: o Wawa Algoma News Review o The Wicksteed Weekly (Hornepayne) o Hearst Le Nord o Sault Ste. Marie Star
EBR Notice	Information Notice on the Environmental Registry: An Environmental Registry Information Notice Endorsement Package will be prepared by the MNRF Region at each stage of consultation and submitted to MNRF Region (via the on-line correspondence management system OCMS) eight weeks prior to the newspaper publication date to facilitate the notice postings.
Information Centre	Information Centre Community • Hornepayne
Other	

4.7 Indigenous Community Notices

At least nine months prior to the commencement of the formal public consultation process (i.e., Invitation to Participate) the MNRF District Manager will contact each Indigenous community in or adjacent to the Nagagami Forest, whose interests or traditional uses may be affected by forest

management activities. Letters to each First Nation were sent December 22, 2017 and March 22, 2018. The Indigenous communities to be consulted are:

- Constance Lake First Nation
- Ginoogaming First Nation
- Hornepayne Aboriginal Community
- Metis Nation of Ontario
- Biigtigong Nishnaabeg (Ojibways of Pic River)
- Pic Mobert First Nation
- Red Sky Metis Independent Nation
- Brunswick House (initial letter sent in April)

If a customized consultation approach is developed, it will be used to direct the involvement of the Indigenous community and the consideration of the community's interest in the production and implementation of the plan, and will provide a process for exchanging necessary information in a timely manner.

In lieu of an agreed upon customized consultation approach, at each stage of the forest management planning process a direct written notice will be provided to the Indigenous community and upon request, in the Indigenous language specified by the community. If applicable, a media notice will also be placed in the local Indigenous media. Indigenous community members on the planning team will be responsible for identifying the Indigenous media to be used. All Indigenous communities in or adjacent to the management unit whose interest or traditional uses may be affected by forest management activities will be provided direct written notice.

Information centres in First Nation communities will be provided as requested by the communities.

4.8 Summary of Input and Confidentiality

Comments will be acknowledged and brought to the planning team for response. The planning team will evaluate and analyze input during meetings and develop strategies to determine how the input will be considered in the development of the FMP. The MNRF, in conjunction with the plan author, will respond in writing within two weeks of receiving the correspondence to all written comments and submissions received from any person or organization during the preparation of a FMP. This requirement will also apply to all verbal comments if a written response has been requested.

After each stage of consultation, a summary of input received and response provided will be produced by the Regional planning forester. This summary will form an appendix to both the draft and final FMP but will not include names or addresses of people providing input into the FMP. Normally, the names and addresses of persons who provide input will be added to the mailing list unless advised not to.

Notices will identify that comments will become part of the public record, but that under the Freedom of Information and Protection of Privacy Act (1987), personal information will remain confidential unless prior consent is obtained.

4.8.1 French Language Services

MNRF is responsible for posting notices in French language media and for translation of the following:

- Responses to all French language comments and submissions;
- The draft and final forest management plan summaries

5.0 MNRF FUNDING REQUIREMENTS

Summary Description of MNRF Funding Requirements	**Fiscal Year (April 1 to March 31)**			
	2018/19	**2019/20**	**2020/21**	**Total**
Public Consultation Funding Requirements				
Stage 1 – Newspaper Ads & Mail out	$4,000	-	-	$4,000
Stage 2 – Newspaper Ads, Mail out,	-	$4,000	-	$4,000
Stage 3 – Newspaper Ads, Mail out, Information Centre	-	$4,000 $2,000	-	$4,000 $2,000
Stage 4 - Newspaper Ads, Mail out, Information Centre	-	-	$4,000 $2,000	$4,000 $2,000
Stage 5 - Newspaper Ads & Mail out	-	-	$4,000	$4,000
Community Visits	$2,000	$2,000	$2,000	$6,000
Translation of Documents			$2,375	$2,375
Report: - Aboriginal Background Information Report Report on the Protection of Identified Aboriginal Values	$10, 000 $12, 000	$5, 000 est. $5, 000 est.	$5, 000 est. $5, 000 est.	$42,000
- Administrative Support	$0	$0	$0	$0
Total	$28,000	$22,000	$24,375	$74,375

The funding requirements are estimates at the time of the signing of these terms of reference. Actual funds required depends on attendance at meetings and training, the number and format for customized consultation, and the number of Indigenous reports to be prepared and updated.

6.0 RECORD OF CHANGES TO TERMS OF REFERENCE

The Forest Management Planning Manual for Ontario's Crown Forest (OMNR 2017) requires acceptance of the terms of reference by the planning team as well as senior officials from both the Company and MNRF prior to the issuance of first public notice indicating the commencement of plan production. The FMPM also recognizes that the dynamic nature of the process will often force changes to these terms, from staff and resource shifts, to modeling and analysis tools. This section is a placeholder to add any changes to the terms of reference.

If the plan author, with the assistance of the planning team, determines a change to these terms is required, the plan author and the MNRF will assess the degree of each change to determine the level of approval required. In general, modifications to approved availability of resources or how each resource contributes to the planning process, or variation to the approved planning schedule that may impact timely plan approval, will be categorized as significant and may require consultation with senior management of each respective organization. Otherwise, slight adjustments involving minor schedule changes, replacement of support staff/advisory bodies or chosen MNRF-approved analytical models/tools will be captured in the Planning Team minutes and a summary of the changes will appear as an Appendix to the Terms of Reference in the Draft and Final Forest Management Plan.

Note: it is recommended that Regional Director approval should be obtained for any significant changes in the planning team membership (e.g. plan author, project manager).

Appendix – Summary of Changes to the Terms of Reference

Draft Plan Submission – Since the approval of the Terms of Reference in August 2018, there have been several staffing changes affecting Jackfish River Management Inc. (JRMI), now First Resource Management Group (FRMG) and the MNRF. These changes have been captured in the Planning Team minutes and are summarized in the tables below. An exhaustive list of the changes has not been compiled for this Appendix, rather any changes still in effect at the time of the draft plan submission are captured below.

Table 1. Record of changes to steering committee members, planning team members, and plan advisors

Original Membership	**Current Membership – as of October 21, 2020**
John Peluch – MNRF District Manager/Steering Committee Chair	Paul Bernier
Carlo Bin – Nagagami Forest Management Inc/Steering Committee SFL Representative	Jeff Barton (FRMG) Pierre Brouzes (CFP), alternate
Megan Finlay R.P.F.– MNRF Regional Planning Forester/Project Manager	Krista Mayrand, R.P.F., effective April 2019 Erin Armstrong, R.P.F., effective March 2020 Sarah Sullivan, R.P.F., effective Sept 2020
Jon Peroff – SFL Representative (JRMI)	Craig Heinrich (FRMG)
Dale Goodfellow R.P.F.– Plan Author (JRMI)	Shelley Straughan R.P.F. (FRMG)
Mitch Long – Silviculture Forester (JRMI)	Wayne Pawson (FRMG)
Neil McLean R.P.F.– Forest Analyst (JRMI)	Scott Lumb (FRMG)
Brian Harbord R.P.F.– MNRF Management Forester	Sarah Sullivan R.P.F.
Vacant – Brunswick House First Nation	Lisa Vanbuskirk
Gordon Kayahara R.P.F. – MNRF Science Advisor	Lindsey Russell R.P.F.
Bruce Moore – MNRF Resource Management Technician	Bailey Young

Table 2. Updated Summary of Notices for Each Stage of Consultation (confirmed during 2019-06-19 PT Mtg)

Notice Type	**Remarks**
Mailed	Mailing list number – **236**
Newspaper	Notices to be placed in the following newspapers: o Hearst Le Nord (French only) o Wawa-news.com (online only)
EBR Notice	Information Notice on the Environmental Registry: An Environmental Registry Information Notice Endorsement Package will be prepared by the MNRF Region at each stage of consultation and submitted to MNRF Region (via the on-line correspondence management system OCMS) eight weeks prior to the newspaper publication date to facilitate the notice postings.
Information Centre	Information Centre Community o Hornepayne
Other	o Social media – MNRF Facebook page, Twitter (when), LCC Facebook page

Project Plan

for the

2021-2031 Forest Management Plan

for the

Nagagami Forest

April 20, 2018

Effective Date: July 23, 2018

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Planning Team Acknowledgement of Roles & Responsibilities

For the 2021-2031 Forest Management Plan for the Nagagami Forest

I acknowledge my roles and responsibilities as described in this Project Plan for the 2021-2031 Forest Management Plan, for the Pineland Forest.

_____ _____

John Peluch
District Manager
Wawa District
Ministry of Natural Resources and Forestry

Date

_____ _____

Megan Finlay, R.P.F., Project Manager
Regional Planning Forester
Ministry of Natural Resources and Forestry

Date

_____ _____

Dale Goodfellow, R.P.F., Plan Author
Management Forester
Jackfish River Management Ltd.

Date

_____ _____

Brian Harbord, R.P.F.
Management Forester, Wawa District
Ministry of Natural Resources and Forestry

Date

_____ _____

Jennifer Pine,
Resource Liaison Specialist, Wawa District
Ministry of Natural Resources and Forestry

Date

_____ _____

Kathleen Cote,
Management Biologist, Wawa District
Ministry of Natural Resources and Forestry

Date

_____ _____

Tricia Young Date
District Planner, Wawa District
Ministry of Natural Resources and Forestry

_____ _____

Shawn Fortin Date
District Planner, Wawa District
Ministry of Natural Resources and Forestry

_____ _____

Name Date
Assistant Management Forester, Wawa District
Ministry of Natural Resources and Forestry

_____ _____

Jennifer Tremblay Date
Administrative Assistant, Wawa District
Ministry of Natural Resources and Forestry

_____ _____

Kamala Rupakheti Date
Regional Analyst
Ministry of Natural Resources and Forestry

_____ _____

Derrick Romain Date
Regional Planning Biologist
Ministry of Natural Resources and Forestry

_____ _____

Pierre Brouzes Date
Hardwood Industry Representative
Columbia Forest Products

_____ _____

Steve Thuerig, R.P.F. Date
Industry Representative
Thurig Forestry Consulting

_____ _____

Marg Zajac Date
Nagagami LCC Representative

Insert Name
Indigenous Representative
Hornepayne Aboriginal Community

Date

Insert Name
Indigenous Representative
Constance Lake First Nation

Date

Peter Rasevych
Indigenous Representative
Ginoogaming First Nation

Date

Juanita Starr
Indigenous Representative
Biigtigong Nishnaabeg (Pic River) First Nation

Date

Jesse Gaudette
Indigenous Representative
Pic Mobert First Nation

Date

Insert Name
Indigenous Representative
Red Sky Metis Independent Nation

Date

Insert Name
Indigenous Representative
Metis Nation of Ontario

Date

Insert Name
Indigenous Representative
Brunswick House

Date

Insert Name	Date
Indigenous Representative	
Missanabie Cree First Nation	
Betty McGuie	Date
Nagagami Forest Local Citizens Committee	
Mitch Long	Date
Jackfish River Management Ltd.	
Neil McLean	Date
Jackfish River Management Ltd.	

1.0 Introduction

This Project Plan in conjunction with the associated Terms of Reference outlines the roles and responsibilities of the planning team, plan advisors, task teams and plan reviewers in the preparation of the 2021-2031 Forest Management Plan (FMP) for the Nagagami Forest. This project plan defines the planning schedule for the preparation, review and approval of the FMP.

2.0 Organization for Planning

2.1 Steering Committee

List of Steering Committee Members:

Name	Organization and Title	Role
John Peluch	MNRF Wawa District Manager	Chair
Carlo Bin	President, Nagagami Forest Management Ltd.	Member
Mark Austin, R.P.F.	RD representative (Regional Resources Planning Supervisor)	Member

Roles and Responsibilities of the Steering Committee

This Steering Committee will be in place for the duration of the FMP preparation and will:

a) Select a project manager from the Ministry of Natural Resources and Forestry (MNRF) staff, company staff or a mutually agreed upon third party;
b) Provide common objectives to the planning team;
c) Provide guidance and direction on unresolved planning team issues to ensure closure is achieved and that once decisions are made, they are not revisited without due cause;
d) Ensure appropriate financial and human resources are provided to ensure timely and professional plan production;
e) Monitor the production of the plan to ensure milestones are being met and the plan will be ready for approval on time.

The Roles and Responsibilities of Planning Team Members are presented in Appendix 1.

2.2 Task Teams

Information Management, Modelling and Analysis Task Team (M&A Team)

Members will conduct and oversee computer modelling and analyses throughout the preparation of this FMP. This will include the preparation and completion of the information and products associated with the *Planning Inventory Checkpoint*, the *Support for the Current Forest Condition Checkpoint* and the *Support for the Base Model Inventory and Base Model Checkpoint*. This team will use the Strategic Forest Management Model (SFMM) and other analytical models and tools as described in the Analysis Package. The task team will incorporate all aspects of modeling and analyses (*i.e.* forest dynamics,

silvicultural options, management options, operational objectives and constraints, mandatory investigations, scoping analyses, management objectives, indicators and desired levels, etc.). All task team members will contribute to the development of the required documentation Analysis Package.

This task team will work with other task teams and members of the planning team to provide support for the proposed Long-Term Management Direction (LTMD), determination of sustainability and primary road corridors to direct the levels of access, harvest renewal and tending activities required to achieve the desired forest and benefits.

There may be sub-task teams developed within this task team, including modelling for wildlife habitat.

Members:

Name / Position	Organization	Role
Dale Goodfellow, R.P.F., Plan Author	SFL	Member
Kamala Rupakheti, MNRF Analyst	MNRF	Member
Andre St. Louis, MNRF GSO	MNRF	Member
Neil McLean, R.P.F. Company Analyst	SFL	Lead
Jon Peroff, GIS Specialist	SFL	Member
Don Larmer, R.P.F. Industry Representative	SFL	Member
Brian Harbord, R.P.F. Wawa Management Forester	MNRF	Member
Megan Finlay, R.P.F., Regional Planning Forester	MNRF	Member
Derrick Romain, Regional Planning Biologist	MNRF	Member
Kathleen Cote, Wawa Management Biologist	MNRF	Member
Gordon Kayahara, R.P.F Forest Ecosystem Science Specialist	MNRF	Member
Mitch Long	SFL	Member

* Indigenous and LCC Representatives are invited to attend and participate in this task team. Please Contact Task Team Lead.

Advisors will be brought in to address subject matter as required.

Indigenous Task Team

This task team will lead the consultation requirements and Indigenous consultation at each stage of the planning process.

Members:

Name / Position	Organization	Role
Jennifer Pine, Resource Liaison Specialist	MNRF	Lead
Dale Goodfellow, R.P.F., Plan Author	SFL	Member
Brian Harbord, R.P.F. Management Forester	MNRF	Member
Megan Finlay, R.P.F., Regional Planning	MNRF	Member

Name / Position	Organization	Role
Forester		
TBD	Hornepayne Aboriginal Community	Member
TBD	Brunswick House First Nation	Member
Jesse Gaudette	Pic Mobert First Nation	Member
Juanita Starr	Biigtigong Nishnaabeg	Member
Peter Rasevych	Ginoogaming First Nation	Member
TBD	Constance Lake First Nation	Member
	Missanabie Cree	

Operations Task Team

Members are responsible for the development of all operational planning pieces of the FMP including the following:

- Selection of areas of operations (harvest areas, contingency, and renewal and tending areas) including new operations prescriptions for areas of concern (AOC), Conditions on regular operations, conditions on existing roads, landing and aggregate pits and any new values encountered. The task team will be responsible for creating following information:
    - AOC prescription summary (*i.e.*, Table FMP-10)
    - Develop any new AOC prescriptions in accordance with the Forest Management Planning Manual (FMPM) 2017 requirements
    - AOC supplementary documentation including documentation of the planning of operational prescriptions for AOCs and conditions on operational roads

- All road planning requirements for new primary, branch and operational roads that are needed to access harvest areas during the ten-year FMP (FMPM 2017, Section 4.5)
    - The FMP tables (*e.g.*, Table FMP-18, and FMP-19)
    - Supplementary documentation of the planning of primary and branch road corridors and the locations of primary and branch roads in AOCs (FMPM 2017, Section 4.5 and Appendix III)
    - Locations of primary and branch roads in AOCs (FMPM 2017, Section 4.5.3) and any conditions on regular operations.
    - Any roads related background information including the sources of direction, reviews of independent forestry audits (IFAs), new guidelines, year 5 and final year annual reports (AR), and update the existing roads inventory.

- This task team will also be responsible for identifying, review and provide any required background information including the following:
    - Updates to Nagagami Forest values
    - Updates to the resource based tourism values map
    - Updates to the list of tourism operators

There may be sub-task teams developed within this task team.

Name / Position	Organisation	Role
Dale Goodfellow, R.P.F., Plan Author	SFL	Lead
Kamala Rupakheti, MNRF Analyst	MNRF	Member
Jon Peroff, GIS Specialist	SFL	Member
Don Larmer, R.P.F. Industry Representative	SFL	Member
Pierre Brouzes, Hardwood Representative	SFL	Member
Steve Thuerig, R.P.F. Industry Representative	SFL	Member
Kathleen Cote, Wawa Management Biologist	MNRF	Member
Derrick Romain, Regional Planning Biologist	MNRF	Member
Brian Harbord, R.P.F. Wawa Management Forester	MNRF	Member
Tricia Young, District Planner	MNRF	Member
Shawn Fortin, Senior Lands & Waters Technical Specialist	MNRF	Member
Adam Tomasini, Integrated Resource Management Technical Specialist	MNRF	Member
Bruce Moore, Resource Management Technician	MNRF	Member
Mitch Long	SLF	Member

* Indigenous and LCC Representatives are invited to attend and participate in this task team. Please Contact Task Team Lead.

Additional task teams may be created by the planning team during the planning process if required.

2.3 Plan Reviewers

The MNRF regional and districts staff will review the entire FMP and will confirm that the planning team decisions and the consideration of public comments are reflected in the plan. They will confirm that the plan is complete; that all calculations are correct; and that the plan is understandable by those who must refer to, implement or monitor the plan. The Regional Planning Forester is identified to coordinate the review with the districts and prepare the preliminary and final list of required alterations.

The review by the regional Planning Forester and regional/provincial advisors will focus on matters that have cross-district or broad regional implications, the consistency in the application of forest management guides, and how the advice of the advisors has been reflected. Each plan advisor who has provided direction during the production of this FMP will ensure that sections of the plan pertaining to his/her advice are reviewed.

Plan reviews can be classified as follows:

Operational Review: This is a comprehensive review that would ensure all plan requirements have been addressed.

Preliminary Review: Provides an informal review of plan components as they are developed prior to the formal submission of the draft FMP at Stage 4.

Advisory Review: Focuses on matters that have cross-district or broad regional implications ensuring consistency in the application of forest management guides and assesses that advice has been reflected in the draft planned operations.

It is best practice for components of the FMP to be provided for informal review as they are developed prior to the formal submission of the draft plan.

Plan Reviewer	**Roles and Responsibilities**
Regional Planning Forester(s)	Regional/Advisory Review & Review Coordination
Management Forester(s)	Operational Review & District(s) Review Coordination
Regional Planning Biologist(s)	Operational or Regional/Advisory Review
Management Biologist(s)	Operational Review
Forestry Technical Specialist(s) and technical staff	Operational Review
District GIS Data Technician(s)	Operational Review
Regional Planner	Regional/Advisory Review
Natural Heritage Specialist	Regional/Advisory Review
Regional Planning Ecologist	Regional/Advisory Review
Senior Regional Parks Planner(s)	Operational & Regional/Advisory Review
Forest Management Planning Specialist	Regional/Advisory Review
Regional Forest Analyst/ Resource Analyst(s)	Operational or Regional/Advisory Review
Regional Forested Ecosystems Science Specialist	Regional/Advisory Review
Forest Industry Liaison Officer(s)	Regional/Advisory Review
Forest Licensing Specialist	Regional/Advisory
Fire Science and Planning Specialist	Regional/Advisory Review
Regional GIS Officer(s)	Regional/Advisory Review
District Planner(s)	Advisory Review
Resource Liaison Specialist(s)	Advisory Review
Regional Lands Specialist	Advisory Review
District Lands Specialist	Operational Review

3.0 Plan Production, Review and Approval

3.1 Schedule for Plan Production

See Section 4 Appendix 2 for a schedule of plan production which details the plan component/requirements as per the FMPM 2017.

3.2 Progress Checkpoints

Progress checkpoints are key steps in the development of the LTMD of a FMP. The satisfactory completion of the required information for each checkpoint will be documented in the analysis package, with the exception of the preliminary endorsement of the LTMD, which will be confirmed by the Regional Director. The involvement of the advisors is also critical in clearing each checkpoint and all efforts will be made to undertake this in a collaborative fashion, with emphasis on early participation in the development of checkpoint elements or products.

Checkpoint	Documentation	Planning Team Lead	Regional Checkpoint Issuer(s)
1) Planning Inventory	Analysis Package	Company GIS	RIAU
2) Current Forest Condition	Analysis Package	Company Analyst	RIAU
3) Base Model Inventory and Base Model	Analysis Package	Company GIS	RIAU
4) Management Objectives	Analysis Package	Plan Author	Megan Finlay
5) Support for LTMD, Determination of Sustainability and Primary Road Corridors	Analysis Package	Plan Author	Megan Finlay
6) Preliminary Endorsement of the LTMD	LTMD Summary	Plan Author	Regional Director

4.0 Appendices

Appendix 1: Planning Team Roles/Responsibilities

It is expected that all planning team members will attend planning team meetings and consultation forums as schedules permit. All planning team members, within the limits of the professional skills and knowledge, will participate in all decisions. If a planning team member is unable to attend a meeting or was unable to participate in a decision it is his/her duty to get information about the proceeding(s) and provide input into the decision if required.
As per the requirements of Part A of the FMPM 2017, the plan author, the planning team and representatives from the LCC will attend all information centres.

Roles and Responsibilities of Individual Planning Team Members and select Plan Advisors:

Project Managers – Megan Finlay

- Oversee production of all components of the FMP
- Utilize project management techniques to ensure timely plan production and ensure FMP proceeds on schedule
- Identify resource needs and deliverables
- Serve as principle liaison between planning team and steering committee
- Arbitrate and resolve difference among planning team members, when necessary drawing on the appropriate involvement of the steering committee

MNRF Project Manager – MNRF Regional Planning Forester, Megan Finlay

- Co-chair planning team with company co-chair
- Provide professional and technical advice
- Assess with plan author and regional FMP Specialist/Coordinator, planning team member training needs
- Arrange for the attendance of resource advisors at planning team meetings as required
- Ensure that other MNRF program areas and government agencies, as outlined in the FMPM 2017, are involved as necessary in development of the FMP (Lands, Fire Management, Ministry of Northern Development and Mines)

Planning Team Co- Chairs – Dale Goodfellow/Megan Finlay

- Delegate assignments to planning team members and task teams.
- Lead in the preparation and circulation of planning team meeting agendas and minutes.
- Coordinate the preparation and distribution of minutes of all planning team meetings.
- Advise the District Manager of planning team members who are not actively attending and participating in planning team meetings.

Plan Author – Dale Goodfellow

- Responsible for the overall preparation of the plan.

- Meets with tourist operators and other forest users to develop site-specific operating prescriptions in areas where forest management activities overlap with identified tourism and other values.
- Assists in the preparation of responses to public input.
- Supports Indigenous community consultation efforts as required.
- Attends LCC meetings as required or requested.
- Lead for the development of the harvest layout according to eligibility and selection criteria.
- Lead for all road related planning.
- Ensures that appropriate resource guidelines and manuals are used in FMP production.
- Ensures plan meets requirements of FMPM 2017.
- Incorporates FMP related IFA recommendations into the production or text of the FMP.
- Lead for addressing review comments and list of required alterations.
- Responsible for the preparation of the draft/final Plan Summary
- Responsible for the submission of draft and final FMPs, plan summaries and supplementary documentation.
- Ensures that the best available science and technology is considered in the preparation of the plan.

MNRF Regional Planning Forester – Megan Finlay

- MNRF Project Manager and Co-Chair (see above)
- Serves as MNRF's lead contact for both Environmental Registry (ER) and newspaper notices liaising with the EBR registry operator and Communication Service Branch (CSB) on timing and approvals.
- As MNRF's primary ER information notice posting contact
    - Works with EBR registry operator to co-ordinate the timing of the ER notice posting with the timing of the newspaper notice and mail outs
    - Confirms requirements on posting process and ER information notice endorsement package
    - Completes and corrects ER information notice endorsement packages, provides for EBR registry operator review, coordinates District Manager(s) approval
    - Ensures all ER endorsement packages are submitted to the to enter into on-line correspondence management system (OCMS) within timelines (currently 8 weeks prior to newspaper publication deadline)
    - May participate in conference calls, or be requested to facilitate others participation, as the ER information notice endorsement package progresses through the approvals process
    - Tracks where the ER information notice endorsement package is at in the process by checking OCMS
- As MNRF's primary newspaper notice contact:
    - Serves as the lead contact to coordinate newspaper notices with the ER information notice; includes coordinating timing of the newspaper notices and mail outs with the information notices as CSB will not authorize newspaper notices without Deputy Minister's Office (DMO) endorsement of the ER information notice

    - Prepares newspaper notices for inclusion in the ER information notice endorsement packages
    - Provides newspaper notices to CSB once the ER information notice endorsement package is entered into OCMS
    - Confirms that DMO endorsement package has been received at least 1 week prior to the newspaper publication deadline.
- As MNRF's lead Registered Professional Forester for the FMP:
    - Serves as primary liaison between planning team, MNRF districts, MNRF regional office, Ontario Parks and other government agencies and industry
    - Responsible for coordination of all public consultation efforts and documentation including translation of the LTMD Summary and draft/final Plan Summary
    - Ensures that all public comments, concerns and recommendations are fully considered and integrated in the FMP
    - Provides the plan author with relevant background documents, resource plans and guidelines
    - Provides input and review into all plan components and ensure all planning process requirements are met and all forest management related concerns are addressed in the plan
    - Ensures all maps, records, documentation and plans are available for review and inspection during review periods and at the review locations
    - Attends LCC meetings as required and provide updates on the preparation of the FMP and plan issues
    - Coordinates the lists of required alterations
    - Prepares the Statement of Environmental Values briefing note

Company Analyst – Neil McLean, R.P.F.

- Leads the Modelling and Analysis Task Team
    - Initiate work sessions and meetings as required
    - Prepare documentation; Inform Planning Team of progress and present decision points; prepare information products for public meetings
    - Assist Company GIS staff in production of Forest Resource Inventory (FRI)
    - Develop model inputs, with input from M&A Team
    - Run base model in SFMM for initial scoping, with M&A Team
    - Run base model in SFMM with M&A Team, develop inputs and run models
    - Lead/participate in issues/strategies relevant to model
- Silvicultural Ground Rules (SGR) edits if necessary
- Assist with operational planning and silviculture prescriptions
- Lead/ responsible for updating road and water crossing inventory, road strategy
- Assist plan author with documentation

MNRF Management Forester Wawa – Brian Harbord

- Maintains the mailing list (*i.e.* keeping list up to date)
- Serves as a liaison between planning team and MNRF district
- Ensures that all public comments, concerns and recommendations are officially recorded
- Assists in preparing responses to public input
- Provides the summary of public consultation and information on the attendance at information centres

- Ensures local resource management strategies are incorporated into the FMP (*e.g.* ecosystem management, district white pine and red pine management strategy etc.)
- Serves and the contact for the LCC and is responsible for meeting coordination
- In consultation with the plan author, meets with tourist operators and other forest users to develop site-specific operating prescriptions in areas where forest management activities overlap with identified tourism and other values.
- Co-ordinates, in conjunction with the plan author and appropriate MNRF staff, the documentation regarding existing roads.
- Provides timely input, development and advice into access issues and remote tourism

MNRF Regional Planning Biologist – Derrick Romain

- Primary MNRF contact regarding fish and wildlife habitat related matters, including providing advice/direction regarding water quality, fish habitat, wildlife requirements and the application of the MNRF legislation, manuals, guides, policies and directives.

Wildlife:

- Assists the planning team in determining which species will be specifically considered and locally featured during the preparation of the FMP
- Provides advice/direction regarding wildlife biology and habitat needs and the application of guidelines.
- Ensures the plan is consistent with MNRF wildlife policy requirements.
- Ensures that wildlife concerns related to forest management are addressed in the plan

Fisheries/Water Quality:

- Provides advice/direction regarding water quality and fish habitat requirements and the application of guidelines.
- Ensures that the plan is consistent with MNRF fish policy.
- Ensures all water quality and fisheries concerns related to forest management are addressed in the plan.

Provides timely input, development and review into:

- Development of objectives, strategies, criteria and issues, and the analysis of LTMD with regards to wildlife/fisheries concerns;
- AOC prescriptions (including all water crossings) to ensure fish habitat, water quality and environmental guidelines are followed and incorporated into road construction and use-management strategies.

MNRF Management Biologist – Kathleen Cote

- Provides all data relative to wildlife/fisheries concerns within the forest and liaise with other district and area wildlife staff.
- Ensures that all known fish and wildlife values information is up to date, complete and accurate.
- Provides direction on the application of AOC prescriptions where a value is identified but the species is uncertain.

Wildlife:

- Provides support to ensure that wildlife concerns related to forest management are addressed in the plan

Fisheries:

- Ensures that the plan is consistent with fisheries and lake management plans.

Provides timely input, development and review into:

- The selection process for areas of operations, with regards to wildlife/fisheries values;
- Access planning with regards to wildlife/fisheries values/tourism;
- AOC prescriptions (including all water crossings) to ensure fish habitat, water quality and environmental guidelines are followed and incorporated into road construction and use-management strategies.

MNRF Resource Liaison Specialist – Jennifer Pine

- Ensures all Indigenous consultation requirements are met for each community
- Lead, Co-ordinate, implement, and document discussions with Indigenous communities and/or organizations regarding participation in the planning process
- Coordinates the preparation of required reports with assistance from the plan author and Indigenous representatives, specifically; 1) the Aboriginal Background Information Report, 2) the Report on the Protection of Identified Aboriginal Values, and 3) the Summary of Aboriginal Involvement.

Local Citizens Committee Member representative to the Planning Team – Marg Zajac/Betty McGie

- Monitor the planning process on behalf of the LCC.
- Act as a liaison between the planning team and the LCC.
- Assist in the verification and updating of the values maps.
- Ensure that local interests and the concerns of the LCC are presented to the planning team.
- Assist with the presentation of information at consultation opportunities and Information Centres.
- Present LCC summary reports to planning team and update LCC regarding planning team activities.
- Ensure that the required FMP related LCC reports are prepared and submitted by the LCC to the planning team on time.

Industry Representative – Steve Thuerig

- Participates in the review of planned harvest areas and road corridors as a member of the planning team.
- Monitors the planning process on behalf of the Sustainable Forest License holder.
- Acts as a liaison between the planning team and company.
- Ensures that the interests and the concerns of company are recognized.

Industry Representative – Don Larmer

- Participates in the review of planned harvest areas and road corridors as a member of the planning team.
- Monitors the planning process on behalf of the Sustainable Forest License holder.
- Acts as a liaison between the planning team and company.

- Ensures that the interests and the concerns of company are recognized

Hardwood Industry Representative – Pierre Brouzes

- Participates in the review of planned harvest areas and road corridors as a member of the planning team.
- Monitors the planning process on behalf of hardwood users
- Acts as a liaison between the planning team and hardwood users.
- Ensures that the interests and the concerns of hardwood users.

Data Analyst – Jon Peroff

- Provides professional and technical advice concerning the Company's Geographic Information System (GIS), and lead in the development of Information Products (maps, coverage, and data) associated with the Forest Management Plan.
- Ensures that Information Products associated with the plan meet the requirements of FIM and the FMPM.
- Lead role in conducting planning analysis to determine cutover and disturbance size distribution, and stand level residual.
- Lead role in the company in the exchange of digital information and products between the Company and the MNRF.

Indigenous Community Representatives – Peter Rasevych, Juanita Starr, Jesse Gaudette, TBD, TBD, TBD, TBD, TBD

- Facilitate the collection of Aboriginal Values Information from the community for the Aboriginal Background Information Report.
- Assist in the preparation of the Report on the Protection of Identified Aboriginal Values.
- Ensure that the Community's interests are effectively communicated to members of the planning team.
- Assist in coordination of the Customized Consultation Program, if the community chooses to participate in the Customized Consultation Program.

MNRF Analyst – Kamala Rupakheti

- Works with planning team to prepare/review the inventory, map products and review any spatial analysis.
- Works with planning team to resolve issues.
- Assists plan author as required.
- Checks the information products associated with the plan and meet the requirements of FIM 2017 and the FMPM 2017 (e.g; harvest volume and area calculations etc.).

Although MNRF supervisors do not participate as members of the planning team and are not always listed as plan advisors or reviewers, they assist and enable the planning process and plan production as outlined below:

MNRF Resource Management Supervisor – Zachary White

- Responsible for ensuring that the MNRF districts provide adequate resources, requested by the project manager, to ensure that the plan proceeds according to schedule.
- Inform the District Manager when an issue requires attention.
- Provides advice and support to the District Manager on issues pertaining to planning resources and issue resolution.

- Provides advice and support to reporting staff and the planning team on issues pertaining to planning resources and issue resolution.

MNRF Regional Resource Management Planning Supervisor – Mark Austin

- Provides professional and technical advice regarding overall MNRF operations.
- Responsible for ensuring that the MNRF region provides adequate resources, requested by the project manager, to ensure that the plan proceeds according to schedule.
- Provides advice and support to the District Manager on issues pertaining to planning resources and issue resolution.
- Provides advice and support to reporting staff and the planning team on issues pertaining to planning resources and issue resolution.

Appendix 2: FMP Production Schedule

Key dates

Stage 1 - Invitation to participate	September 24, 2018
Stage 2 - Review of Proposed Long-term Management Direction	~August, 2019
Stage 3 - Information Centre: Review of Proposed Operations	~December, 2019
Stage 4 - Information Centre: Review of Draft Forest Management Plan	~June, 2020
Stage 5 - Inspection of the MNRF-Approved Forest Management Plan	~October, 2020

(o) Statement of Environmental Values

Ministry of Natural Resources and Forestry
Environmental Bill of Rights
Consideration of MNRF's Statement of Environmental Values

Consideration of MNRF's Statement of Environmental Values Briefing Note
Nagagami Forest 2021-2031 Forest Management Plan

Description of Proposal:

The Nagagami Forest is located within the Ministry of Natural Resources and Forestry's (MNRF) Administrative District of Wawa, which in turn is administered regionally by the Northeast Regional office in South Porcupine.

Of the 448,168 hectares in this forest, approximately 389,301 hectares are considered productive forest lands. These productive forest lands can be found in Hill's site region 3E which is entirely within the Boreal Forest Region of Ontario. Predominant tree species found in this area include jack pine, black spruce, poplar, white spruce, white birch and balsam fir with smaller amounts of cedar and larch found intermittently throughout the forest.

The Nagagami Forest is licenced to Hornepayne Lumber Limited Partnership under Sustainable Forest Licence (SFL) Number 550047. As such, the responsibility of forest management planning is held by Hornepayne Lumber LP in consultation with the MNRF and the general public. First Resource Management Group Inc. (FRMG) is a resource management company that has been hired to provide forest management services, on behalf of Hornepayne Lumber LP, to carry out its forest management planning responsibilities.

Communities within, or in close proximity to this forest, include Hornepayne and Hearst. There is an MNRF office located in Wawa with the office of the Sustainable Forest Licence holder being located in Hornepayne.

The anticipated dates the plan will be in effect are for the ten-year period from April 1, 2021 to March 31, 2031.

1. Each of the following principles of resource stewardship (as outlined in MNRF's Statement of Environmental Values) must be considered in the context of this proposal.

☒ **A sound understanding of natural and ecological systems and how our actions affect them is key to achieving sustainability.**

Through preparation of the Forest Management Plan (FMP) in accordance with the *Forest Management Planning Manual* (FMPM) the plan incorporates indicators of sustainability. The *Forest Management Guide for Boreal Landscapes* directs the FMP on the amount and arrangement of different types and ages of forest on the landscape to help provide habitat features for wildlife, birds, fish and plants. The *Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales* requires the FMP to provide protection for sensitive or special features and ensure the conservation of soil and water resources. The simulated range of natural variation provided from Ontario's Landscape Tool for the Nagagami Forest provides

the basis for establishing landscape pattern targets. The FMPM requires the FMP to examine landscape pattern based on the frequency distribution (clear cuts and wildfires) by size class. The template incorporates expressions of landscape processes which serve as measurable indicators of forest sustainability.

☒ **As our understanding of the way the natural world works and how our actions affect it is often incomplete, MNRF staff should exercise caution and special concern for natural values in the face of such uncertainty.**

The plan makes use of MNRF's approved forest management guides to mitigate, minimize, and prevent potential adverse effects of forest operation on values (e.g. water quality, fish habitat, caribou habitat, moose habitat, marten habitat, and raptors). Some of these guides include: *Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales*, *Forest Management Guide for Boreal Landscapes, Management Guidelines for Forestry and Resource-Based Tourism,* and *Forest Management Guide for Cultural Heritage Values*. MNRF's forest management guides are based on best available science. Where information was limited, conservative direction was prescribed in the guides. This could be considered as following the precautionary principle. Also, where there is direction with a high degree of uncertainty effectiveness monitoring is undertaken providing the basis for adaptive management.

☒ **The finite capacity of our natural systems should be recognized in planning and allocation decisions**.

This plan recognizes forests have natural limits in terms of their capacity to produce timber and, by extension specific types of wildlife habitat. This is incorporated into the plan by using the Sustainable Forest Management Model (SFMM) computer modelling tool which outputs an "available harvest area" based on the social, environmental and economic inputs provided by the planning team. The model selects optimal silvicultural prescriptions that meet desired future forest conditions and objectives. Determining the most effective treatment will require consideration and understanding of the site. This plan has also incorporated the results of the Boreal Forest Landscape Disturbance Simulator "Range of Natural Variation" analysis of landscape features, processes and habitat.

☒ **Natural resources should be properly valued to provide a fair return to Ontarians and to reflect their ecological, social and economic contributions.**

Determining Crown timber rates is not an FMP component. Continued provision of sustainable timber resources through this FMP provides economic value to Ontarians. Social, economic and ecological value of other forest resources (habitat, tourism, cultural heritage, etc.) has been recognized and considered in this FMP. Strategies and prescriptions have been developed to ensure continued contributions of non-timber resources to the province of Ontario.

☒ **Participation in resource management by all those who share an interest is a necessary ingredient, particularly in support of communities who must balance economic diversity with other needs. Those affected by proposed changes must have access to information and opportunities to provide input to decisions that affect their lives.**

The public consultation, and Indigenous consultation and involvement process for the FMP provided opportunities for Indigenous (First Nations and Métis) communities and the public to access information and become involved with planning of forest operations. Indigenous communities were provided the opportunity to participate on the FMP planning team and Local Citizens' Committee and provided an opportunity to develop a customized consultation approach. First Resource Management Group played a major role on the planning team including being the author of the plan. Other planning team members included representatives from Indigenous (i.e., First Nations and Métis) communities, forest industry, MNRF and the Nagagami Local Citizens Committee (LCC). The Desired Forest and Benefits meetings were used to inform participants of the background information to support the preparation of the FMP. It provided a forum for participants to share their respective interests in the management of the forest, and to understand what the community desires and needs from the forest are. In addition, specific meetings with parties/groups impacted by the FMP, especially Indigenous communities and the LCC, which represents various interest groups, were also held. Decisions proposed during the planning process can be appealed through an issue resolution process or through a request for an individual environmental assessment.

☒ **Applied research and sharing of scientific and technological knowledge and innovative technologies must be fostered to support the sustainable development of natural resources.**

This FMP was prepared using existing models and supporting tools such as Ontario's Landscape Tool (OLT), SFMM, Evaluate Forest Residual Tool (EFRT), Water Classification Tool (WCT), and Model Inventory Support Tool (MIST), to measure and assess the forest against simulated ranges of natural variation with respect to indicators described in the Landscape Guide. Also, Geographic Information Systems, satellite and Lidar imagery, and other science-based guides assisted in the determination of forest sustainability during the preparation the plan.

☒ **An ecosystem approach to managing our natural resources enables a holistic perspective of social, economic and ecological aspects and provides the context for integrated resource management.**

The Nagagami 2021-2031 FMP employs strategies to support an integrated approach to management and recognizes the impact of forest management activities on the entire ecosystem. The FMP recognizes that in some areas no harvesting is permitted and in other areas normal harvesting activities need to be modified to mitigate, minimize or prevent impacts on forest ecosystems or known values. Operational prescriptions and conditions for Areas of Concern (AOC) and Conditions on Regular Operations (CRO) were developed to guide operations and have been applied to mitigate, minimize or prevent the potential effect of forest operations on these values and important ecological features to retain their integrity.

Planning was completed by a multidisciplinary planning team tasked with the responsibility of ensuring decisions took into consideration all known forest values. Use of the SFMM model and Ontario's Landscape Tool, were used to model the effects of various management objectives and wildlife habitat strategies, while qualitative social and economic description analysis was used to consider potential impacts of management objectives and strategies in order to provide for the best mix of social and economic benefits.

☒ **The planning for and management of natural resources should strive for continuous improvement and effectiveness through adaptive management of natural resources.**

Forest management is conducted through an adaptive management cycle. The FMP implements most recent policy, information sources, science, and analysis tools developed through continuous learning. Ontario's FMP process requires evaluation of current and previous plans and the assessment of achievement of objectives, including analysis of effectiveness of Local Citizens Committees (LCC).

☒ **In order to achieve sustainable development, environmental protection must be an integral part of the development process and cannot be considered in isolation.**

Identification of forest structure and composition (e.g., forest resource inventories), species at risk (SAR) and habitat values, and the development of management objectives to address the key elements of this FMP. Key inputs of this FMP are the use of updated values information, direction in MNRF's approved forest management guides, and decision support systems (i.e. models). This information provides for the evaluation of strategies and the development of management prescriptions or conditions that promote healthy ecosystems, sites, and natural populations. FMPs are prepared in an open and consultative fashion with Indigenous communities, forest industry, other stakeholders, and public.

☒ **From both a sound business and environmental perspective, it is less costly and more effective to anticipate and prevent negative environmental impacts before undertaking new activities than it is to correct environmental problems after the fact.**

This plan was developed in compliance with MNRF's legal and policy framework for forest management which provides direction to prevent, minimize and mitigate potential adverse effects on the environment when undertaking of forest management.

The *Crown Forest Sustainability Act* (CFSA), and its regulated manuals, provide a comprehensive legal and regulatory framework for forest management in Ontario. The FMP has been developed in compliance with MNRF's legal and policy framework for forest management which provides direction to mitigate, minimize or prevent potential adverse effects of the undertaking of forest management activities on the environment. The FMP was also in alignment with the MNRF guides to protect Species at Risk.

☒ **Rehabilitating degraded environments is an important aspect of resource stewardship.**

Identification of forest structure and composition, habitat issues and concerns and development of strategies to address these concerns are key elements of this FMP. The FMP makes use of MNRF's approved forest management guides, and decision support tools to evaluate strategies and develop management prescriptions that promote healthy ecosystems, sites, and natural populations. Silviculture strategies for the regeneration and rehabilitation of depleted forest stands are incorporated in the FMP. These strategies reflect approved treatments for specific conditions described in the *Forest Management Guide to Silviculture in the Great Lakes - St. Lawrence and Boreal Forests of Ontario*. Renewal standards included in the silviculture ground rules are consistent with projected future forest conditions and yields.

Operational prescriptions and conditions are included in the FMP to mitigate the creation of non-productive land and rehabilitation of existing non-productive land.

Consideration of Principles:

2. Indicate under 'Opportunities for Consultation' how in the context of this proposal MNRF provided for:

- An open and consultative process when making decisions that might significantly affect the environment; and
- Opportunities for involvement of Aboriginal people whose interests may be affected by decisions that might significantly affect the environment.

Opportunities for Consultation:

Formal Public Consultation

In accordance with the 2017 FMPM (and the Phase-in Conditions of the 2020 FMPM), formal public consultation has occurred to-date at four stages during the preparation and review of this plan:

- Stage One – Invitation to Participate;
- Stage Two – Review of Proposed Long-Term Management Direction (30 days);
- Stage Three – Review of Proposed Operations (60 days); and,
- Stage Four – Review of the Draft Forest Management Plan (60 days)

MNRF provided direct written notices to stakeholders and the general public at each stage of the planning process as required by the FMPM.

An additional stage will occur prior to FMP implementation (Stage Five: Inspection of the MNRF-Approved Forest Management Plan) which will begin by issuing a public notice which advises the public that the MNRF-approved FMP is available for inspection. This notice will be issued upon approval of the FMP by the MNRF Regional Director.

All comments and submissions received from all stages of public consultation to-date have been considered as part of the decision-making process by the planning team. A written response has been provided to all written comments and submissions (or information has been sent), and upon request, to all verbal comments for the FMP. All comments and submissions are part of the public record. There is an opportunity during the preparation of the FMP to seek resolution of issues with the MNRF District Manager or the MNRF Regional Director. The last day to request the issue resolution process will be 15 days after the completion of the period for public review of the draft FMP.

Opportunities for Involvement of Aboriginal People

The FMPM (2017) has specific requirements to provide the opportunity for the development of a customized consultation approach with each Indigenous community (First Nations and Métis). The FMPM describes the approach for working with Indigenous communities to support their involvement in the forest management planning process in a manner that respects Aboriginal

and treaty rights, and that assists the Crown in addressing its duty to consult obligations, where triggered.

In accordance with the criteria identified in the FMPM, the District Manager identified each First Nation and Métis community in or adjacent to the management unit, whose interests or traditional uses may be affected by the preparation and implementation of the FMP. The following First Nation and Métis communities were determined to be in or adjacent to the Nagagami Forest:

- Brunswick House First Nation
- Pic Mobert First Nation
- Biigtigong Nishnaabeg
- Constance Lake First Nation
- Ginoogaming First Nation
- Long Lake #58 First Nation
- Métis Nation of Ontario (MNO)
- Red Sky Métis Independent Nation (RSMIN)

Each First Nation and Métis community in or adjacent to the Nagagami Forest was provided with the opportunity to develop a customized consultation approach for the preparation and implementation of the FMP. No formal custom consultation approaches have been identified. Each identified First Nation and Métis Council identified as having interest within the Nagagami Forest was provided the opportunity to be a member of the Planning Team and Local Citizens' Committee.

Early in FMP preparation, First Nation and Métis communities were encouraged to review and participate in the update of the First Nation and Métis Background Information Report. Brunswick House First Nation, Pic Mobert First Nation and Red Sky Métis Independent Nation updated their Background Information Reports. This evolving report documents a summary of the use of the natural resources on the Nagagami Forest, forest management related concerns for those First Nation and Métis communities, First Nation and Métis values, and a summary of involvement of First Nation and Métis communities in the preparation of the report. The Report on the Protection of Identified First Nation and Métis Values was updated following operational planning. This report documents proposed operations and road corridors of interest to the identified communities, First Nation and Métis and other values, a discussion of proposed operational prescriptions and conditions for First Nation and Métis values and a discussion of how First Nation and Métis values, including use of the forest, has been addressed by the planning of forest operations

Aboriginal values collected are kept confidential and are not displayed or shared with anyone outside of the community or MNRF, unless authorized by the community in which values were provided. A Summary of First Nation and Métis Involvement in the production of the 2021-2031 FMP has been prepared and resides with the MNRF at the Wawa District Office.

3. Indicate below under 'Additional Information' any other considerations of MNRF's SEV in the context of this proposal:

Additional Information:

The MNRF has taken into account social, economic and other considerations. These have been integrated with the purposes of the Environmental Bill of Rights (EBR). The broad objective of forest management on Crown land in Ontario and in this plan is to provide for the wise use of forest resources, sustainable over the long term. The planning process and MNRF's approved forest management guides ensure that environmental, ecological, social and economic values are identified, and measures are taken to mitigate, minimize or prevent potential effects on these values. A strategy of adaptive management allows for the consideration of recommendations from reporting, and new science findings to be incorporated into the FMP.

Harvesting activities are planned within the context of silvicultural systems and the sustainability of the resource is addressed through the use of computer modelling and professional knowledge to determine appropriate allocation levels. Sites that may be affected by operations, including cultural heritage values and resource-based tourism values, are protected by operational prescriptions and conditions for AOCs and conditions on regular operations for important ecological features. The health of the forest is maintained through regeneration activities and landscape diversity strategies. Indigenous communities and the public have a right to a healthy environment which is protected through the planning process. The planning process requires identification of environmental values and prevention or mitigation of potential damage to those values. This right is further protected through mandatory reporting of accomplishments, and associated compliance and effectiveness monitoring. These monitoring efforts will ensure the FMP is followed and future planning strategies are modified as required.

Other considerations have been addressed by adhering to the CFSA in preparation of the FMP. The FMPM requires the integration of social, economic, and ecological considerations in the preparation of an FMP.

Prepared by:

Tricia Young
District Planner, Wawa District
Ministry of Natural Resources and Forestry

Date:

I have taken into consideration the aforementioned in my decision to recommend approval of the 2021-2031 Nagagami Forest Management Plan.

Paul Bernier, R.P.F.
District Manager, Chapleau/Wawa District
Ministry of Natural Resources and Forestry

Date:

Note: The original signed version is available at the MNRF Wawa District office.

(p) MNRF DFO Water Crossing Protocol

Water crossing standards - Introduction

The Ministry of Natural Resources and Forestry/Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings, 2017 (the Protocol) provides a risk-informed Proponent self-screening approach for lower-risk water crossings that utilizes pre-determined and mandatory technical water crossing standards to direct routine water crossing construction and decommissioning activities in a manner that protects the productivity of Ontario's commercial, recreational or Aboriginal (CRA) fisheries or fish that support such a fishery. Adopting this type of risk-informed and modernized approach will allow government and industry stakeholders to focus resources towards planning and reviewing water crossing activities that pose a greater potential risk of serious harm to Ontario's CRA fisheries or fish that support such a fishery.

The approved water crossing standards in the Protocol have been developed collaboratively with input from the Ministry of Natural Resources and Forestry (MNRF), Department of Fisheries and Oceans (DFO) and representatives from Ontario's forest industry. They represent minimum levels of performance requirements that must be met by the proponent when constructing and decommissioning water crossings using a proponent self-screening approval framework.

The conditions and requirements included in the general and specific water crossing standards have been deemed by MNRF and DFO staff as the necessary mitigation measures required to classify the water crossing project as not likely to result in serious harm to CRA fisheries or fish that support such a fishery. If a proponent determines that the requisite water crossing standards that apply to their specific project can be implemented, they may proceed with their activity, so long as the water crossing standards notification requirements are met, and forest management approval processes outlined in this Protocol and the appropriate version of FMPM are followed.

In cases where a Proponent determines that the requisite water crossing standards that apply to their specific project cannot be implemented, a review and approval will be required by either MNRF and/or DFO as per the Protocol.

Failure to follow the requirements of these water crossing standards could result in compliance and enforcement actions under both the Fisheries Act and the Crown Forest Sustainability Act (CFSA).

Water crossings in which a water crossing standard is being proposed for construction or decommissioning will be approved in conjunction with the approval of, or revision to, the Annual Work Schedule (AWS).

SECTION 7 – APPROVED WATER CROSSING STANDARDS

These water crossing standards have been developed collaboratively with input from the MNRF, DFO and representatives from Ontario's forest industry. They represent minimum levels of performance requirements that must be met by Proponents when constructing and decommissioning water crossings using the proponent self-screening approval framework detailed in this Protocol.

The conditions and requirements included in the general and specific water crossing standards have been deemed by MNRF and DFO staff as the necessary mitigation measures required to classify the water crossing project as not likely to result in serious harm to CRA fisheries or fish that support such a fishery. If a Proponent determines that the requisite water crossing standards that apply to their specific project can be implemented, they may proceed with their activity, so long as the water crossing standards notification requirements are met, and forest management approval processes outlined in this Protocol and the appropriate version of FMPM are followed.

In cases where a Proponent determines that the requisite water crossing standards that apply to their specific project cannot be implemented, a review and approval will be required by either MNRF and/or DFO as per the approval framework outlined in this Protocol.

Failure to follow the requirements of these water crossing standards could result in compliance and enforcement actions under both the *Fisheries Act* and the *CFSA.*

Part 3.0 of this section details water crossing construction, maintenance and decommissioning best management practices and mitigation measures. Although not mandatory, it is highly recommended that Proponents consider these best management practices and mitigation measures in relation to the planning, design, construction, maintenance and decommissioning of water crossing. The tools and approaches contained in this section support Proponents in meeting the water crossing standards included in Part 1.0 and 2.0 in this section.

Part 1.0 General Water Crossing Standards That Apply To All Water Crossings

This general water crossing standard applies to all water crossings constructed or decommissioned under the authority of the CFSA for which a self-screening approval approach is being implemented. Additional measures that are specific to certain water crossing types or structures must also be implemented and are detailed in Part 2.0 of this Protocol.

General Standards

- The implementation of water crossing standards (i.e. type and location of project) must be consistent with the applicable and approved FMP.

- The implementation of water crossing standards must be overseen or carried out by individuals who are trained and competent to:

    - Understand the intent and objectives of the specification's standards;
    - ensure that specification's water crossing standards and appropriate mitigation measures are satisfactorily applied; and
    - Recognize when water crossing standards and appropriate mitigation measures have not been satisfactorily implemented and understand the requirements to report and correct any mistakes that have occurred.

- The project must be compliant with applicable water crossing standards and guidelines in the most recent versions of Ontario's forest management guide(s) that address the conservation of biodiversity at the landscape scale and the stand and site scales and MNRF's Crown Land Bridge Manual.

Design and Location

- The project does not include watercourse realignment.

- Projects are designed and constructed in a way that minimizes loss or disturbance to riparian vegetation. The removal of riparian vegetation must be restricted to the disturbance footprint required for the construction, maintenance and decommissioning of water crossings.

Erosion and Sediment Control

- Erosion and sediment control measures must be installed prior to the commencement of construction or decommissioning activities to prevent the release of sediment or other deleterious substances to the watercourse. Erosion and sediment control measures will be:
    - Effective and installed properly with respect to the site conditions;
    - Inspected regularly during the course of construction with any necessary repairs being made if any damage occurs;

- Maintained until the site has become stabilized through the permanent re-establishment of vegetation (i.e., a root mass has been established that ensures site stabilization), either naturally or through planting and tending activities within disturbed areas and approaches, and/or they have been stabilized with rip-rap, or appropriately sized non-erodible aggregate material.

- Fill material placed below the normal high water mark will be erosion-resistant and/or protected from erosion.

- Water crossings are to be constructed and decommissioned to help ensure that storm water runoff from bridge decks, side slopes, and road approaches and ditches are directed away from the watercourse and into a retention pond or vegetated areas to remove suspended solids, dissipate velocity, and prevent sediment and other deleterious substances from entering the watercourse. Erosion and siltation in ditch lines adjacent to watercourse crossing approaches are to be controlled by using sediment traps such as rock/soil dams or log jams as site conditions warrant.

- Crossing sites are to be stabilized during and post construction and decommissioning, including any material stockpiling, spoil, and/or other waste materials to prevent sediment or other deleterious substances from entering the watercourse. Cut and fill slopes around the water crossing structure and decommissioned sites are to be stabilized at a 2:1 slope or stable angle of repose for the materials used using site appropriate methods.

CRA fisheries or fish that support such a fishery

- At any time of year, the free movement of water and the passage of fish may not be blocked or otherwise impeded up and down stream of the crossing, with the exception of potential and temporary blockage due to water crossing construction/decommissioning activities.

- All in-water construction and decommissioning activities must abide by the appropriate fisheries in-water timing windows documented in approved FMPs and/or forest management guides in order to avoid disrupting sensitive fish life stages. In cases where the fishery community inventories at the location of the proposed project are not well documented, the most restrictive in-water timing window must be used.

- All in-water construction and decommissioning activities must be undertaken in an uninterrupted fashion and be completed in an appropriate timeframe so as to minimize the potential for site disturbance.

- The construction and decommissioning activities must not employ the use of any explosives.

Construction and Maintenance

- Machinery must be maintained free of fluid and fuel leaks.

- Machinery must be operated on land with tracks/wheels above the normal high water mark, or on ice in a manner that avoids disturbance to the banks of the watercourse and adjacent riparian vegetation areas.

- Machinery must be washed, refueled and serviced a minimum of 30 metres away from the watercourse. Fuel and other materials for the machinery are to be stored a minimum of 30 metres away from the watercourse to minimize the chance of any deleterious substance from entering the water.

- Removal of riparian vegetation must be restricted to the disturbance footprint required for the construction, maintenance and decommissioning of water crossings. Site-specific operational and/or safety concerns that warrant the removal of additional riparian vegetation will be determined on a case-by-case basis and will be kept to a minimum within the road right-of-way in order to help maintain the stability of watercourse banks.

- All debris resulting from construction and decommissioning activities must be removed from the work site following the completion of the undertaking.

- If machinery fording the watercourse is required during the course of construction activities, it will be limited to a one-time event (over and back) per piece of equipment that is essential to implementation of the project, and must occur only if an existing crossing at another location is not available or practical to use.

    - If minor rutting is likely to occur, watercourse bank and bed protection methods (e.g., swamp mats, pads) are to be used provided they do not constrict flows or block fish passage;
    - Grading of the watercourse banks for the approaches is not permitted;
    - If the watercourse bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation are likely to occur as a result of equipment fording, a temporary crossing structure or other practice must be used to protect these areas;
    - The one-time fording must adhere to the appropriate in-water timing windows; Fording must occur under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.

Part 2.0 Water Crossing Standards That Apply To Specific Water Crossings Structures/Practices

The following water crossing standards apply to specific water crossing structures and/or practices and must be implemented in addition to the general water crossing standards outlined in Part 1.0 of this document.

2.1 Water Crossing Standards for the Construction of Clearspan Bridges

This water crossing standard applies to the construction of clear span bridges and their footprints, including associated abutments, cribs and/or sill logs.

General Standards

- The conditions and requirements of the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

Design and Location

- Bridges must not be located on meander bends, braided watercourses, alluvial fans, or any other area that is inherently unstable and may result in the alteration of natural stream functions or erosion and scouring of the water crossing structure.

Erosion and Sediment Control

- Appropriate site-specific mitigation measures must be enacted to ensure the construction of clearspan bridges, including bridge cribs, abutments, and associated fill slopes are not subjected to the impacts of long-term or ongoing erosion. At a minimum, measures must include:
    - Clearspan bridges, including bridge cribs and fill slopes must be stabilized with appropriately sized non-erodible material (e.g., rocks, cobble sized stones). Rock used to stabilize crossings and watercourse banks will be clean, free of fine materials, and of sufficient size to resist displacement during peak flood events. The rock must be placed at the original watercourse bank grade to ensure there is no infilling or narrowing of the watercourse.
    - Fill material placed below the normal high water mark of the watercourse must be erosion resistant and/or protected from erosion.

CRA fisheries or fish that support such a fishery

- The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

Construction and Maintenance

- The bridge, including its abutments, must be placed entirely outside the normal high water mark.

- The construction of clearspan bridges must not result in the alteration of the bed or banks of the watercourse or infilling or narrowing of the watercourse channel.

2.2 Water Crossing Standards for the Decommissioning of Clearspan Bridges

This water crossing standard applies to the decommissioning of clear span bridges and their footprints, including associated abutments, cribs and/or sill logs. In certain cases, local site conditions may create a higher likelihood for potential damage to watercourse banks and/or fish habitat when bridges abutments, cribs, and/or sill logs are completely removed as opposed to leaving them in place. In these cases, Proponents must ensure that appropriate sedimentation and erosion mitigation approaches, in addition to any necessary public safety actions, continue to be implemented.

General Standards

- The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

- Decommissioning of water crossings will only occur if it is consistent with the approved road use management strategy in the applicable FMP and is scheduled for decommissioning in the current AWS (Table AWS-2).

Erosion and Sediment Control

- Upon decommissioning, including the removal of bridge abutments, cribs, and/or sill logs, the site must be stabilized and protected against erosion.

- Bridge abutments and cribs may be left in place if they are in good condition, stable for the long term, are not affecting watercourse or fish community dynamics, and are permissible in the approved FMP and/or AWS-2 table.

- Surface water runoff and road approaches and ditches must be directed away from the watercourse and into vegetated areas. Diagonal berms or waterbars must be installed where the erosion potential of the road approaches is likely to result in the road's gravel surface and underlying fill being deposited into the watercourse over time. Sediment traps used within ditch lines adjacent to the watercourse crossing approach should be replaced and/or maintained to their original condition at the time of crossing decommissioning.

CRA fisheries or fish that support such a fishery

- The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

Construction and Maintenance

- The decommissioning of clearspan bridges, including the removal of bridge abutments, cribs and/or sill logs will not result in the alteration of the bed or banks of the watercourse or infilling or narrowing of the watercourse channel.

2.3 Water Crossing Standards for the Construction of Open Bottom Arch Culverts

Arch culverts are open-bottom structures that typically span the width of the waterbody channel, require minimal in-water construction activities and result in minimal impacts to the banks of the waterbody.

General Standards

The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

Design and Location

- The arch culvert must not be located on meander bends, braided watercourses, alluvial fans, or any other area that is inherently unstable and may result in the alteration of natural steam functions or erosion and scouring of the water crossing structure.

- Culverts must be sized to a minimum Q25 design flow using MNRF water engineering/calculation software, or equivalent software programs deemed acceptable by the MNRF.

Erosion and Sediment Control

- Appropriate site-specific mitigation measures must be enacted to ensure the construction of arch culverts and associated footings and fill slopes are not subjected to the impacts of long-term or ongoing erosion. At a minimum, measures must include:
    - Stabilizing the crossing, including footings and fill slopes, with appropriately sized non-erodible material (e.g., rocks, cobble sized stones). Rock used to stabilize crossings and watercourse banks must be clean, free of fine materials, and of sufficient size to resist displacement during peak flood events. The rock must be placed at the original watercourse bank grade to ensure there is no infilling or narrowing of the watercourse.
    - Fill material placed below the normal high water mark of the watercourse will be erosion resistant and/or protected from erosion.

CRA fisheries or fish that support such a fishery

- The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

Construction and Maintenance

- The project cannot result in any excavation and/or reconstruction of the streambed.

- The crossing must be installed under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.

- The culvert must be secured on continuous footings outside of the normal high water mark and will be constructed according to the manufacturer's specifications using materials that are appropriate for the site and expected loads.

- Where footings are constructed with concrete, appropriate measures must be taken to ensure concrete materials do not encroach into the bed of the watercourse.

- The construction of arch culverts must not result in the alteration of the bed or banks of the watercourse or infilling or narrowing of the watercourse channel.

2.4 Water Crossing Standards for the Construction of Snow Fill and Ice Bridge Crossings

Snow fills and ice bridges, two types of water crossings that provide cost-effective access when lakes, rivers and streams are frozen, are typically used for temporary winter access in remote areas. Ice bridges are normally constructed on larger watercourses that have sufficient stream flow and water depth to prevent the ice bridge from coming into contact with the stream bed or restricting water movement beneath the ice. Snow fills, however, are temporary crossings constructed by filling the channel of a watercourse with clean compacted snow.

General Standards

- The conditions and requirements of the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

Design and Location

- The work must not include dredging, placing fill, or grading or excavating the bed or banks of the watercourse.

Erosion and Sediment Control

- No earth fill or aggregate is permitted below the normal high water mark of the watercourse. Crossings must be constructed of clean water, ice and snow that are free of dirt and debris.

CRA fisheries or fish that support such a fishery

- Snow fills and ice crossings must not restrict water flow within the watercourse where it occurs naturally during winter conditions, or otherwise completely obstruct fish passage at any time.

- The project must not be located within 100 metres of fisheries spawning or sensitive habitat.

Construction and Maintenance

- Appropriate seasonal conditions must be present (e.g., adequate depth of snow and ice, winter temperatures) to provide certainty that the construction and removal water crossing standards can be satisfactorily implemented.

- Aggregate or loose woody material cannot be used to top the crossing.

- If logs or corduroy are used to stabilize the approaches of ice and snow fill crossings:
  - The logs must be clean;
  - The logs may be securely bound together to facilitate removal and minimize site disturbance;
  - No logs or woody debris can be left within the watercourse;
  - Corduroy (if used) adjacent to the watercourse banks must be removed and placed outside the floodplain to help prevent a damming effect on the site. Corduroy that is frozen or embedded into the road approaches or watercourse banks must be left in place so as to not expose mineral soil adjacent to the watercourse. The remaining snow and ice can be left to melt in the spring. If required, remedial work will be carried out on the site after the crossing is removed to ensure that no logs or woody debris can wash back into the watercourse.
  - Logs may be placed on road approaches to assist in diverting runoff away from the watercourse; however, they must be placed outside of the floodplain and in such a manner as to ensure that they do not wash back into the watercourse.

- Sanding of snow and ice crossings must be kept to a minimum and within the bounds of operational health and safety considerations.

- Corduroy logs or brush mats must be installed on the approaches to the watercourse crossing when conditions are soft in order to avoid disturbing the banks and crossing approaches.

- If water is being pumped from a watercourse to reinforce the crossing, the intakes must be sized and adequately screened to prevent debris blockage and fish entrainment.

2.5 Water Crossing Standards for the Construction of Single, Small Closed-Bottom Round Culverts

This water crossing approval specification applies to the construction of single, round, corrugated, closed-bottom steel, aluminum, or plastic culverts that are less than or equal t

1200 millimeters (4') in diameter and do not require site-specific engineering approval (i.e., span less than three (9.8')), as per MNRF's Crown Land Bridge Manual, 2008.

General Standards

- The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

- The project does not:
    - Replace an existing open-bottom crossing (e.g., clear span bridge, arch culvert);
    - Replace an existing closed-bottom culvert that is larger in diameter than that being installed; or
    - Involve the installation of more than one closed-bottom culvert at the crossing location.

Design and Location

- Culvert crossings must be located, designed and constructed to minimize the likelihood of ongoing outlet scour, culvert undermining and/or the erosion of fill in order to provide for stable and non-perched crossing sites that can provide for fish passage.

- The culvert must not be located on meander bends, braided watercourses, alluvial fans, or any other area that is inherently unstable and may result in the alteration of natural stream functions or erosion and scouring of the crossing structure.

- Culverts must be sized to a minimum Q25 design flow using MNRF water engineering/calculation software, or equivalent software programs deemed acceptable by MNRF.

    - In cases where an unmapped watercourse is encountered during the construction of a road, and where a proper watershed analysis cannot be completed to determine the Q25 design flow, the culvert must be sized to ensure that it spans from bank to bank within the watercourse.

- Culverts must not be installed where the channel slope at the crossing location (i.e., physical rise over run of the culvert footprint prior to construction) is of a gradient greater than 2.0%.

- Culverts must not be installed where the slope of road approaches or either of the bank approaches is greater than 30%/17°.

- Crossing locations must be selected where culverts can be embedded below the grade of the watercourse bed. The amount of embedment should be determined by local conditions.

Erosion and Sediment Control

- Appropriate site-specific mitigation measures must be enacted to ensure the construction of the culvert crossing does not result in the ongoing erosion of fill. At a minimum, measures must include:
    - Both the inlet and outlet ends of the culvert must be stabilized with appropriately sized non-erodible material (e.g., rocks, cobble sized stones) to prevent erosion of the fill slope and the watercourse bed. Rock used to stabilize crossings and watercourse banks must be clean, free of fine materials and of sufficient size to resist displacement during peak flood events. The rock shall be placed at the original watercourse bank grade to ensure that there is no infilling or narrowing of the watercourse.
    - Fill material placed below the normal high water mark of the watercourse must be erosion resistant and/or protected from erosion.

CRA fisheries or fish that support such a fishery

- The project must not be located within 100 metres of fisheries spawning or sensitive habitat.

- The project must not be located within 500 metres of any brook trout spawning or upwelling areas.

- The project must not be located on any watercourses or tributaries that flow into, and are within 500 metres, of known naturally reproducing brook trout lakes.

- The combination of culvert size, length, slope and drainage area will not create accelerated water velocities that will consistently and predictably impede the passage of fish.

Construction and Maintenance

- The crossing must be installed under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.

- Both the interior and exterior of round, closed bottom culverts that are installed on CRA fisheries or fish that support such a fishery waterbodies must be corrugated to ensure structural stability and facilitate fish passage.

- The grade of the culvert must reflect the grade of the natural watercourse bed.

- Backfill must be adequately compacted around the culvert. Only clean sand or gravel can be used as backfill and must be compacted around the culvert in layers.

- Culverts must be the correct length to permit banks to be sloped at an angle of 2:1 or a stable angle of repose for the materials used.

2.6 Water Crossing Standards for the Decommissioning of Single, Small Closed-Bottom Round Culverts

This water crossing approval specification applies to the decommissioning of all round, closed-bottom steel, aluminum, or plastic culverts that are less than or equal to 1200 millimeters (4') in diameter.

General Standards

- The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

- Decommissioning of water crossings will only occur if it is consistent with the approved road use management strategy in the applicable FMP and is scheduled for decommissioning in the current AWS (Table AWS-2).

- If the construction of the crossing was originally reviewed and approved by MNRF and/or DFO, all applicable conditions of approval must be fulfilled.

Erosion and Sediment Control

- Upon decommissioning, the site must be stabilized and protected against erosion. Approaches to the watercourse should be stabilized at a 2:1 slope or stable angle of repose for the materials used using site appropriate methods.

- All exposed soil must be seeded and/or stabilized immediately following completion of activities. Erosion and sediment control measures must be appropriate for the site conditions and maintained until vegetation has become permanently re-established within disturbed areas and/or exposed mineral soils have been stabilized with rip-rap or appropriately sized non-erodible rock material.

- Materials removed or stockpiled during decommissioning (e.g. grubbing, overburden fill) must be deposited outside the floodplain and stabilized/protected against erosion to ensure material does not enter the watercourse.

- Surface water runoff and road approaches and ditches must continue to be directed away from the watercourse and into vegetated areas. Diagonal berms or waterbars must be installed where the erosion potential of the road approaches is likely to result in the road's gravel surface and underlying fill being deposited into the watercourse over time. Sediment traps used within ditch lines adjacent to the watercourse crossing approach must be replaced and/or maintained to their original condition prior to the construction of the crossing.

(q) Prescriptions for Harvest, Renewal and Tending and Conditions on Regular Operations (CROs)

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1) Generic Forest Operations Prescriptions

Harvesting activities are planned within the context of silvicultural systems and the sustainability of the resource is addressed using computer modelling, along with professional and planning team member knowledge to determine appropriate allocation levels. Sites that may be affected by operations, including archeological potential areas and resource-based tourism values, are protected by operational prescriptions and conditions for Area of Concern (AOC) and conditions on regular operations (CRO) for important ecological features. The health of the forest is maintained through regeneration activities and landscape diversity strategies. The planning process requires identification of environmental values and prevention or mitigation of potential damage to those values. Monitoring efforts through mandatory reporting of accomplishments, and associated compliance and effectiveness monitoring will ensure the FMP is followed and future planning strategies are modified as required.

Silvicultural Ground Rules (Table FMP-4) describe the silvicultural systems and types of treatments that may be used to manage a specific current forest condition to achieve a desired future forest condition. The sources of information for the table are the applicable silvicultural guide(s), such the Forest Management Guide for Boreal Landscape (2014), along with professional judgement, knowledge and experience from the planning team.

The most common harvest method to be implemented on the Nagagami Forest is clearcut silviculture system which involves removing most of the existing overstorey during a single harvest operation. It is the most successful method of harvest for promoting the regeneration of an even-aged stand in which new seedlings become established in fully exposed micro-environments. Natural regeneration of desired tree species occurs through natural seeding, sprouting, suckering, or layering. The success of natural regeneration depends upon the autecology of the targeted species and competitors, site conditions, and the growing conditions (light, seedbed, etc.) created by prior and subsequent treatments. In order to achieve successful regeneration in establishing conifer dominated stands, mechanical site preparation followed by artificial regeneration (planting) will be the typical treatment. Chemical tending with a glyphosate-based herbicide may be required two or three seasons following planting.

2) Conditions on regular operations

Based primarily upon the *Forest management Guide for Conserving Biodiversity at the Stand and Site Scales*, conditions on regular forest operations (CROs) have been developed to maintain or protect features found throughout the forest that are not addressed through area of concern (AOC) prescriptions such as furbearing mammal dens, wildlife and cavity trees. Conditions on regular forest operations also have been put into place to provide specific direction to prevent, mitigate, and/or rehabilitate disturbances that result from forestry operations like rutting and compaction. Many of these features and sensitive sites will be identified during the implementation of operations and appropriate directives will be applied while continuing to carry out forestry activities.

Most of the Conditions on Regular Operations (CROs) identified for the Nagagami Forest have been derived directly from the Stand and Site Guide with further input from the planning team in order to capture their desires on the Nagagami forest. For example, specific road and road network

decommissioning strategies have been discussed to preserve the perception of remoteness and ensure that the many remote tourism lakes on the Nagagami forest remain inaccessible by vehicular traffic.

[redacted]Bear Stand

Description

Bear stands are used in commercial bear hunting to hunt bears within licensed BMAs. These stands are manmade, temporary, often move and are utilized during the spring and fall bear hunt in mid May, June, late August and September. The following conditions were developed by the Planning Team and will apply to bear stands.

Conditions on regular operations, Roads, Landings, and Aggregate Pits

1) *HPL will advise the BMA holders of the proposed operating areas as part of the AWS public review process. BMA holders are responsible for advising HPL when planned operations are in the vicinity of the bear stands.*
2) *HPL will make reasonable efforts to review potential harvesting impacts on bear stands (identified by BMA holders) with BMA holders to develop mitigative measures prior to harvesting.*
3) *If feasible HPL will attempt to maintain residual timber around the bear stand and trail to the bear stand.*

[redacted]Biofibre Harvest

Description

Forest biofibre refers to forest resources from Crown lands that are not being utilized for other forest products (e.g. saw logs) and that are made available under an approved forest management plan.

Biofibre is comprised of:

- unmerchantable timber such as undersized wood, cull trees, or portions of trees.
- individual trees and stands of trees that are merchantable.
- trees that may be salvaged as a result of a natural disturbance.

Biofibre may be the primary (e.g., otherwise unmarketable stand of low-grade hardwoods) or secondary (e.g., undersized material after optimizing recovery of veneer and saw log) product of a planned harvest operation. Biofibre could potentially be used for bioenergy, wood pellets, and biochemicals.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Only harvested trees are available for biofibre harvest.
2) Biofibre harvest will be subjected to the same conditions as regular harvest.
3) Below ground portions of the tree and organic matter that is not part of harvested trees (including boles, branches, roots, bark, leaves, needles, debris, soil carbon, etc.) will remain on site. Movement of such material for access or silvicultural purposes is permitted.

[redacted] Caribou (Travel corridor)

Description

Conditions on Regular Harvest, Renewal, and tending operations

1) To increase the patch size distribution within the caribou travel corridor.
2) Silviculture in the travel corridor will be done in such a way as to favour conifer regeneration over mixed wood and hardwood regeneration (early tending or chemical site preparation) that is consistent with silviculture objectives, revenues and expenditures, and SGRs.
3) Tending treatments will be used to protect conifer regeneration and reduce brush and hardwood species and shrubs that are attractive browse for moose. Limiting browse that attracts moose will also help reduce the use of caribou areas by predators such as wolves and bears. Tending will also be used as required to control browse species in branch road corridors. Where appropriate, more than one herbicide application may be required to maintain the conifer component on competition prone, upland mixedwood sites. This may involve chemical site preparation and one or two tending treatments.
4) Operational activities will be scheduled to limit the number of times the travel corridor is accessed. Hauling, silviculture and road removal will take place in a timely fashion to shorten the duration of disturbance.
5) During harvest operations, residuals will be left on the site so that they will not promote the regeneration of undesirable species such as hardwoods, balsam fir and larch. Residuals will be retained mainly in clumps while minimizing forest edge.
6) Care will be taken to minimize rutting and compaction to prevent regeneration delays and increase of undesirable vegetation and species such as larch and balsam fir.
7) Harvesting poplar in the summer and minimizing exposure of mineral soil during harvesting will help reduce density and vigor of poplar regeneration. If summer harvesting is implemented, new road development will be minimized and when possible, hauling of wood will be delayed until winter to minimize the need for all weather roads and increase the use of poorer quality winter roads.
8) When building access roads within the caribou travel corridor, care will be given to avoid areas of preferred habitat and caribou values.
9) When feasible, all-weather roads will be constructed to avoid areas of higher relief, since these features (such as esker ridges and rock knobs) often contain an abundance of lichen and are potentially important winter habitat.
10) Planting of roads will be done in the same manner as in adjacent blocks. In some cases, retaining a portion of intact road bases on deep sandy soils may be desirable to encourage lichen regeneration.

The following strategies will be employed to ensure caribou are protected from harm and harassment during regular operations:

1) Forest workers will receive training to help identify caribou.
2) Forest workers will be responsible for reporting caribou sightings immediately to their supervisor who will contact NFMC who in turn will then immediately notify MNRF.

3) Forest workers will be required to stop or adjust operations as advised by MNRF to avoid harm or harassment of caribou. Mitigative measures will be developed with MNRF as required.

[redacted]Downed Woody Material

Description

Downed woody material refers to wood above the soil and on the ground: coarse woody material will be used to refer to sound and rotting branches, boles, logs, and stumps, generally ≥ 7.5 cm in diameter at the small end; fine woody material will be used to refer to stems and twigs generally < 7.5 cm in diameter at the small end.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Downed trees (or pieces of trees) present prior to harvest will be left on site (moving such trees for silvicultural purposes is permitted)
2) Non-merchantable or non-marketable wood that is felled during the harvest will also normally be left on site. However, if a biofibre market exists this material may be brought to roadside and utilized.
3) Stems retained as wildlife trees (per section xxvii) that fall down, or are felled for worker safety reasons, become downed woody material and, except in extraordinary circumstances, will be left on site. Moving such trees for silvicultural purposes is permitted.
4) Logging debris will be left on site at the stump where compatible with logging methods (cut-to-length processing) and markets (hardwood veneer only). However, other logging methods (full trees to roadside) may mean this material is brought to roadside where trees are processed. It can be disposed of by piling and burning, dispersal within the Harvest Block, or sold as biofibre, if a market exists.
5) Piles of woody material which are not forecast to be utilized can be burned.
6) Site preparation should retain some coarse woody debris on site and avoid long continuous windrows as much as possible.

[redacted]Erosion

Description

Erosion can be defined as the overland movement of soil particles by water, wind or gravity. Erosion can be the result of either natural causes or human alterations.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Forest operations will not be conducted on extremely steep slopes.
2) Skid trails will avoid steep slopes (>30% slope) where possible.
3) Skid trails will be kept to a minimum, with an emphasis on the protection of advanced regeneration.

4) Post-harvest prescriptions and renewal efforts will be carried out as quickly as possible on shallow soils or blow sand sites to encourage full site occupancy. This will minimize problems with erosion and loss of nutrients.
5) Decommission main skid trails constructed on steep slopes by installing water bars, diversion ditches, straw bales, etc. at appropriate intervals or critical landform junctures to filter runoff water through surrounding vegetation.
6) Minimize mineral soil exposure to that required for efficient operations and effective silviculture consistent with SGR being applied to the site.
7) Mitigate or rehabilitate areas of significant erosion that are transporting, or are likely to transport, sediment into a water feature.
8) Implement good road and water crossing construction and maintenance practices in accordance with the requirements in Section xxvi and xxv

[redacted]Fur Bearing Mammal Dens in Enduring features

Description

Dens in caves, excavated burrows, under large piles of coarse woody material, or other enduring features that are known to have been occupied by furbearing mammals (other than red foxes, skunks, wolves, and wolverines) at least once within the past 5 years. Direction applies to dens known before, or found during, operations.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Harvest, renewal, and tending operations are not permitted within 20 m of the den entrance.
2) New roads, landings, and aggregate pits are not permitted within 20 m of the den entrance.
3) Hauling and road maintenance operations are not permitted within 20 metres of occupied dens unless the road predates the den and is required for safety reasons or environmental protection.

[redacted]Furbearing mammal Dens in Transitory Features

Description

Dens in tree cavities, hollow logs, brush piles, or other transitory features that are known to be occupied by furbearing mammals (other than red foxes, skunks, wolves, and wolverines) and that are encountered during operations.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Known occupied dens encountered during operations will not be destroyed.
2) Reasonable efforts will be made to minimize disturbance of furbearers occupying known dens encountered during operations.

[redacted]Hydrological impacts

Hydrological impacts can be described as changes in the potential rates and/or patterns of surface and shallow groundwater flow through various parts of the forest ecosystem.

Text marked (Guideline) or (Best Management Practice) is from Stand & Site Guide Table 5.2.g

Conditions on Regular Operations, Roads, Landings and Aggregate Pits

1) Based on local conditions, explore reasonable alternatives to crossing organic and saturated mineral soils during the frost-free period. (Guideline)
2) Based on local conditions, take reasonable precautions to ensure harvest, renewal and tending operations will not result in disturbance of the forest floor that impedes, accelerates or diverts water movement within recognizable ephemeral streams, springs, seeps, and other areas of groundwater discharge that connects to lakes, ponds, rivers or streams. (Guideline)
3) Train field staff, especially equipment operators, in the recognition and significance of disruption of hydrological function. (Best Management Practice).
4) Use hydrological modeling tools (including LiDAR and other tools such as aerial photography) to help identify possible unmapped drainages, localized wet areas, mapped drainages that are misplaced or may not exist, or hydrological linkages (i.e. ephemeral streams, springs, seeps, and other area of groundwater discharge). The result obtained through the use of these tools should not be thought of as values requiring verification, but equally they should not replace normal field reconnaissance. (Best Management Practice)
5) If feasible, communicate the location and importance of these features to supervisors and operators in advance of commencing operations in the local area.
6) Where feasible, avoid building roads or skidding through areas of accumulated flow, particularly when near a water feature.

[redacted]Loss of Productive Land

Description

Loss of productive land can be described as the conversion of previously productive forest land to a long-term or permanently non-forested condition as a result of forest management operations. Some loss of productive land through the conversion to other land types (e.g., permanent roads) is inevitable in even the most efficient forest operations.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Minimize the amount of area being converted to non-forest (e.g., roads, landings, roadside slash accumulation) to that required for efficient operations.
    a) To minimize the area of productive land lost to unutilized woody material at roadside, one of the following will be done:
        i) Piled and burned and regenerated.

ii) Slash alignment and regenerated.

2) Exposure of bedrock should be minimized.
3) Ponding created by operations and roads will be mitigated where possible.

[redacted]Nests of Songbirds or Other Small Birds Containing Eggs or Young

Description

Known nests of songbirds or other birds containing eggs or young encountered during operation.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Nests of songbirds (or other small birds) containing eggs or young will not be destroyed, and reasonable efforts will be made to avoid disturbing the nest.

[redacted]Nests of species at Risk Identified During Operations

Description

There are ten bird species at risk known or suspected to occur on the Nagagami Forest. Five species at risk (i.e. Bald Eagle, Peregrine Falcon, Short-Eared Owl, Eastern Whip-poor-will, and the Bank Swallow) are managed with AOCS (EAG, PER, GNR, EWW, and BSC). The Remaining 5 species at risk (Canada Warbler, Common Nighthawk, Eastern Wood-Pewee, Olive-sided Flycatcher and Wood Thrush) are not protected through AOCs and will be addressed with the following conditions on operations.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Known nests and nesting sites defined in LIO for the Canada Warbler, Common Nighthawk, Eastern Wood-Pewee, Olive-sided Flycatcher and Wood Thrush will be protected with a 30-metre reserve to ensure they will not be disturbed or destroyed during operations.

2) If new (unknown) nests of the five SAR bird species not protected by an AOC are encountered During operations then a 30 metre AOC will be established to protect the nesting site.

3) If necessary further direction will be provided by MNRF biologists in a timely manner before proceeding with operations.

[redacted]Nests of Waterfowl and Grouse Containing Eggs

Description

Known nests of waterfowl and grouse containing eggs that are encountered during layout or implementation of operations. The following conditions will be applied during the nesting period in the spring and early summer.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Nests encountered will not be destroyed, and reasonable efforts will be made to avoid disturbing the nest.

[redacted]Non-forested Wetlands

Description

Non-forested wetlands include open wetlands, treed wetlands and brush and alder which are defined as mapped polygon types OMS, TMS and BSH. These features are normally associated with water and are often protected by AOCs. Brush and alder that is not wetlands such as old fields and roads are excluded. The boundary between non-forested wetlands and forest is defined where the canopy cover of trees ≥10-centimetre dbh is ≥25% or the canopy cover of trees ≥1.5 metres tall is ≥30%. The following conditions will be applied.

Conditions on regular operations, Roads, Landings and aggregate pits

1) No harvest, renewal, or tending operations are permitted that will result in significant damage to wetland vegetation or disruption of hydrological function. Operations specifically prohibited include:

    a) Machine travel during the frost-free period within 3 metres of those portions of the wetland dominated by open water or non-woody vegetation (vegetation communities with <25% canopy cover of trees, tall (≥1 metres high) woody shrubs such as alder or willow, or low (<1 metres high) woody evergreen shrubs such as Labrador tea or leatherleaf).

    b) Excessive removal or damage of sapling-sized trees (<10 centimetres dbh) and shrubs within 3 meters of those portions of the wetland dominated by open water or non-woody vegetation.

    c) Felling of trees during the frost-free period into, or within, 3 metres of those portions of the wetland dominated by open water or non-woody vegetation. Trees accidentally felled into those portions of the wetland dominated by open water or non-woody vegetation will be left where they fall.

    d) Operations that leave ruts, a significant area of exposed mineral soil, or disrupt hydrological function within the wetland itself or within the forest that is within 15 metres of those portions of the wetland. Ruts or significant patches of exposed mineral soil will be promptly rehabilitated.

2) No contamination of wetlands by foreign materials is permitted. Specifically:
    a) The use and storage of fuels will be carried out in accordance with the Liquid Fuels Handling Code.
    b) No equipment maintenance (e.g., washing or changing oil) is permitted within 15 metres of non-forested wetlands.

3) Landings are not permitted within the wetland itself or within adjacent forest that is <15 m from those portions of the wetland dominated by open water or non-woody vegetation.

4) Reasonable efforts will be made to avoid crossing wetlands with extraction trails during the frost-free period. During all seasons, crossings will be minimized and will follow the appropriate operating practices to minimize potential site damage and effects on hydrological function.

5) Reasonable efforts will be made to avoid construction of new all-weather roads within wetlands or portions of wetlands characterized by open water or non-woody vegetation. When construction of all-weather roads in wetlands is necessary, it will follow appropriate design principles to minimize risk of sediment entering the wetland and disruption of hydrological function.

[redacted]Nutrient Loss

Description

Nutrient loss can be described as the release and off-site transport of nutrients following forest management activities. The following conditions on regular operations have been developed to avoid nutrient loss.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits.

1) Implement the SGRs to avoid nutrient loss on susceptible sites.
2) Avoid full tree harvesting on shallow soils whenever possible.
3) Maintain slash and biomass within the harvest block as much as possible.

[redacted]Permitted Pits

There are a number of permitted pits within the boundary of the Nagagami not to be confused with forestry aggregate pits. Permitted pits are commonly referred to as category 9 pits. These pits have an established boundary, site plan, reports to be filed. The following conditions have been developed by the Planning Team and apply to all known or new permitted pits.

Conditions on Regular Operations, Roads, Landings and Aggregate Pits

1) Harvest may occur only after consultation with the permitted pit holder:
   a) Pit boundary markers are to be re-established if damaged or removed during operations
2) Renewal, tending, roads, landings, forestry aggregate pits and aggregate extraction areas are not permitted within the boundary of the permitted aggregate sites.

[redacted]Planned Road Construction and Maintenance outside AOCs

Description

The Road Use Management Strategies (RUMS) found in the *Supplementary Documentation of the Planning of Roads, and Roads in Areas of Concern* and table FMP-11 provide conditions on the location and construction of primary, branch, and operational roads in areas of concern, this section contains conditions of a more general nature that apply to the construction and maintenance of all roads on the forest.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Material moved during construction (e.g. grubbed or earth fill material) shall not block drainage courses.
2) Fill material for roads built below the high-water level, within the floodplain of a water feature, will be erosion resistant and/or protected from erosion.
3) Exposed mineral soil between the height of land and a water crossing, or within 100 metres of a water crossing, whichever is less will be trimmed to a stable angle and be protected from erosion so sediment will not enter the water after construction.
4) MNRF will ensure that the signs used to identify the use management strategies for roads are maintained.
5) Ensure all safety considerations have been incorporated into the road planning.
6) Have a monitoring program for roads or road networks and use appropriate mitigation to prevent or stop erosion in ditches, on steep slopes, etc.
7) When roads cross wetlands, cross drainage culverts will be installed as required to ensure that surface water is equalized on both sides of the road and impacts to hydrologic flow and wetland function are minimized.
8) Reasonable effort will be made to avoid crossing ephemeral streams, springs, seeps or other groundwater discharge that are connected to lakes, ponds, rivers, streams or small unmapped wetlands. If such areas cannot be avoided, construction and maintenance techniques and practices to minimize impacts to hydrologic flow and wetland function will be used. Natural water movements will not be impeded, accelerated or diverted.
9) Where ditches leading downhill from rock cuts pass over earth material, use techniques to protect the earth/rock interface from erosion.
10) Grubbing of low vegetative cover between the height of land (e.g., the high point on a ditch line) and a water crossing, or within 100 m of a water crossing, whichever is less, will be limited to that required to address engineering issues and safety concerns, such as the removal of hazards.
11) If blasting or explosives are required, the area to be blasted will be covered to ensure the blast material stays within the road right of way.
12) When constructing roads during the bird nesting season and occupied nests are encountered direction from Section x or FMP-11 will be followed.
13) Do not place windrows or grubbing materials across known migration paths of wildlife in a manner that could impede their travel.

14) Reasonable efforts will be made to ensure that recreational trails (e.g. portage, skidoo, trapline) are passable following forest management activities.

[redacted]Planned Road Construction and Maintenance inside AOCs

Description

Despite careful planning, some roads will traverse AOC's. The following provides direction intended to mitigate potential adverse effects that apply generically to all AOC's. Also reference AOC prescriptions for additional restrictions on roads based on the specific values associated with individual AOC's. The following conditions on regular harvest operations have been developed.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Before construction of any road in an AOC, ensure all considerations with respect to road planning, location, use management strategy and other mitigation techniques are consistent with the specific direction for the associated value as described in the AOC prescriptions (FMP-11).
2) Unless approved by MNRF, road construction and maintenance operations that may enter a water feature or that may potentially cause sediment to enter a water feature are not to occur in shoreline AOCs during periods of fish spawning, incubation, and fry emergence. For the Nagagami Forest these periods will be as follows:
    a. Cool water: Work in water will occur between June 16th and March 31st
    b. Cold water: Work in water will occur between June 16th and August 31st
3) Fill material used to build the road below high water level within the floodplain of a water feature will be erosion resistant and or protected from erosion.;
4) When new roads traverse residual forest within the AOC, the width of the cleared corridor will be as narrow as practical and feasible and will not exceed 20 metres. The AOC width can be widened to remedy a safety concern, provided the rationale is documented in the associated FOIP report.
5) To maintain drainage patterns and minimize the potential for sediment-laden roadbed or ditch run-off to reach a water feature, use cross drainage culverts whenever a road crosses a gully or other natural drainage feature.
6) To minimize potential impacts on fish habitat and water quality in shoreline AOCs:
    a. fill in or around a water feature will be erosion resistant.
    b. In erodible soils, it will be necessary to use erosion control techniques.
    c. Trees will be felled so they do not fall into water.
    d. Ditches will be designed so they do not discharge directly into a water feature.
    e. Ditches will be diverted to flow into the bush so that the water filters through natural vegetation before entering a water feature unless impractical to do so.
    f. Where it is not practical to disperse ditch water before the ditch reaches a water feature, mitigative measures will be required.
7) Roads built within 15 m of a water feature and not associated with a water crossing will:
    a. Use techniques and practices to reduce the possibility of roadbed erosion.
    b. Avoid grubbing.
    c. Design ditches to minimize the possibility of sediment entering the water feature.
8) Reasonable efforts will be made to ensure that recreational trails (portage, skidoo, trapline) are passable following forest management activities.

[redacted]Residual Forest Structure

Description

Residual forest is defined as free-to-grow crown productive forest that meets the following criteria:

- ≥35 years old OR ≥10 meters tall
- In patches that are ≥0.1 hectares in size
- Has a canopy closure ≥50% (Based on dominant and codominant trees)
- Species composition and size pattern must be like the pre-harvest stand.
- Unless otherwise specified in the FMP, harvested residual forest will normally have a species composition, average stem diameter, and average stem quality like that found in the stand before harvest.
- The sub-stand pattern will resemble older forest with small gaps, rather than a mixture of discrete young and old forest patches.
- Ideally, trees will be uniformly spaced. However moderate concentration to facilitate operations is acceptable.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Operational planning will
   a) Follow stand boundaries and/or natural features.
   b) Ensure that any point within a planned harvest area will have at least 25 hectares of mapped residual within a 500-hectare circle (or hexagon) about that point.
      i) **Mapped residual Forest** (i.e. fixed) includes:
         (1) Unallocated stands or portions of stands that meet the definition of residual forest.
         (2) Stands or portions of stands scheduled for harvest that will retain residual forest.
         (3) Residual forest within AOCs associated with known values.
      ii) Normally, additional mapped residual forest that is required during operational planning will be preferentially retained so it is connected to the shoreline of a lake, pond, river, or stream that is within, or directly adjacent (<200m) to, the planned harvest area with a preference for areas of hydrological linkage (e.g., ephemeral streams, springs, seeps, groundwater discharge, etc.). Otherwise, additional mapped residual may be connected to known values, located to encompass uncommon forest types, or located consistent with expected disturbance behavior.
      iii) A minimum of 5 hectares of the mapped residual within any 500-hectare circle (or hexagon) will belong to a patch greater than 5 hectares.
   c) Implementation of the harvest plan will ensure that any point within a new clearcut harvest area will have at least 0.5 hectares of residual within a 50 hectares circle (or hexagon) about that point.
      i) **Point residuals** are patches retained, consistent with the 50-hectare assessment criteria of the Stand and Site Guide (Table 3.2c), which are no smaller than 0.25 hectares. Patches that have been retained must meet defined residual forest standards following operations.

Points will be mapped on operator working maps whereby the point residual can be located at the discretion of operator within the following parameters:

(1) Preliminary locations for all point residual patches will be numbered and portrayed on 1:10,000 operations map available to forest operators. Movement of the point residual patches is permitted within +/- 80 meters from the mapped point location.

(2) More than one patch can be used to achieve the target residual forest cover of 0.5 ha as long as it is a minimum 0.25 ha in size. Any additional residual forest cover patch retained as part of normal operations (e.g. inoperable area, unidentified value, unmapped forest areas) must be within 80m of the mapped position to contribute to that point residual patch.

(3) When locating point residual forest, no specific preference has been given to location, but it is expected that operators will consider other natural features on the landscape (e.g. hydrological linkages).

(4) During harvest block start up the contractor will be made aware of mapped point residual locations.

d) Operational planning will ensure the area of residual forest averaged over all planned clearcut harvest areas, using a 500-hectare moving window assessment, is greater than or equal to 20% of the crown forested area.

e) When measuring achievement of direction requiring a 50 hectare or 500 hectare moving window analysis, a point spacing or grid cell size of no more than 50 metres will be used. Movement of these mapped residuals will not require an amendment, revision, or special reporting. The following conditions will apply if movement of these mapped residual forest areas not to move.

i) The total available harvest area will not be exceeded for the FMP.

f) The conditions on Residual Forest Structure (as Identified in this section) will be followed.

g) When locating unmapped residual forest, preference will be given to locations connected to habitat features encountered during operations such as bird nests, furbearer dens, woodland pools, MAFAs, etc. When additional habitat features are not encountered, preference will be given to:

i) Uncommon forest types.

ii) Locations connected to known values.

iii) Locations consistent with expected disturbance behaviour.

h) Residual assessments for actual harvest areas will occur at the Annual Report stage with the help of supplemental aerial photography when available.

[redacted]Rich Lowland Hardwood Dominated Forest

Description

Mapped stands of rich lowland hardwood-dominated forest, and pockets of rich lowland hardwood-dominated forest (≥0.5 ha in size) encountered during operations.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) No harvest, renewal, or tending operations are permitted that exceed the rutting and compaction standards or disrupt hydrological function.

2) Harvest will follow direction for rich lowland hardwood-dominated forest found in MNR's silviculture guides.

3) Landings and aggregate pits are not permitted within rich lowland hardwood-dominated forest.

4) Reasonable efforts will be made to avoid crossing rich lowland hardwood- dominated forest with extraction trails during the frost-free period. During all seasons, crossings will be minimized and will follow the appropriate operating practices to minimize potential site damage and effects on hydrological function.

5) Reasonable efforts will be made to avoid constructing new roads within rich lowland hardwood-dominated forest. When necessary, road construction will follow design principles to minimize disruption of hydrological function.

[redacted]Road Decommissioning

Description

Roads and road networks are often decommissioned with the removal of water crossings. Planned Road decommissioning is detailed in FMP-18 and Road Use Management Supplementary Documentation.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) Where the road is unlikely to be required to conduct forest management activities, the road will be decommissioned:
    a. Road decommissioning has been planned and incorporated into the Road Use Management Strategies of the 2021-2031 Nagagami Forest FMP.
    b. Priority Areas for road decommissioning will be within:
        i. 2,000 metres of designated remote tourism main Lodge lakes.
        ii. 1,000 metres of designated remote tourism outpost camp lakes.
        iii. The caribou (boreal population) travel corridor.
        iv. The continuous zone (once harvest commitments within 'A' blocks have been met).
2) Decommissioning activities will be consistent with the approved use management strategy and decommissioning techniques will be carried out in accordance with the requirements of the Annual Work Schedule.
3) Stabilize slopes and areas of the road with known or identifiable hazards to prevent erosion and protect the public.
4) Decommissioning of roads will be done in conjunction with the decommissioning of any water crossing(s) associated with the road (if there are any) and at the same time cross drain culverts will be removed and the road bed will be stabilized to prevent erosion.

5) Materials which have been moved and piled during construction, such as grubbed or other earth fill materials will be re-distributed so they contribute to the productive land base.
6) MNRF will have an appropriate monitoring program to address environmental and or safety concerns.

[redacted]Rutting and Compaction

Description

Rut is a continuous trench or furrow that is ≥4 metres long and ≥30 centimetres deep created by machine wheels or tracks through soil displacement and/or compaction. When operating on shallow soils the lesser of depth to bedrock (large boulders or 30 centimetres) will be used.

Compaction is the compression of soil caused by a machine load that exceeds the strength of the soil to resist it. Compaction can occur independent of rutting through machine vibration and slipping tires. Rutting may occur independent of compaction, but in general a rut can be thought of as a visual proxy for compaction.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) No more than 50% of any 0.1 ha circle is permitted in ruts.
2) No ruts permitted that channel water into, or within 15 m of lakes, ponds, rivers, streams, woodland pools, or those portions of mapped non-forested wetlands dominated by open water or non-woody vegetation.
3) No more than 5% of any 20 hectare area is permitted in ruts on shallow soils (<30 centimetre).
4) No more than 10% of any 20 hectare area is permitted in ruts on all other soils (>30 centimetre).
5) The area of rutting and compaction will be minimized.
6) Harvest and site preparation will be scheduled for the appropriate season for the site. Sensitive sites will be cut in winter (or drier periods in summer).
7) During spring break-up, operations will be limited to frozen or dry ground conditions.
8) Where advanced regeneration is a significant contributor to future forest development Careful Logging Around Advanced Regeneration (CLAAG) the area in extraction trails will be minimized. On sites susceptible to rutting, achievement will be balanced against the increased rutting that may occur when extraction is concentrated on fewer trails.
9) High floatation tires or other low impact equipment will be used on organic sites, during the spring and fall.
10) When possible and feasible, roads will be built in advance of harvest operations so limited access is not a recurring reason for damaging susceptible sites.
11) A group of harvest blocks within economical floating distance will be scheduled in the annual AWS to provide operational flexibility to minimize the chances of rutting and compaction of susceptible sites.
12) If damage occurs, operations will shift to less sensitive areas.

[redacted]Salvage Harvest

The direction in this section will apply to all salvage operations, regardless of the origin or type of natural disturbance that led to the decision to engage in salvage operations.

Conditions on Regular Operations, Roads, Landings and Aggregate Pits

1) Salvage harvest will normally retain a minimum average of at least 25 stems/ha greater than 3 m in height and more 45 than 10 cm dbh. This is the minimum average for the harvest block (or minimum average per 20 ha if the harvest block is greater than 20 ha) contingent upon sufficient numbers and types of standing stems being available and, in a condition, suitable for retention.
2) Salvage operations will be conducted with consideration for strategic landscape objectives (e.g. caribou forest cover texture)
3) When finalizing boundaries of a salvage operation that results from wildfire, the area of undisturbed forest included in the salvage operation will be minimized.
4) When finalizing boundaries of a salvage operation that results from blowdown, insect infestation, or other factors (e.g., ice storms), the area of the salvage operation can include undisturbed forest. When salvage operations include undisturbed area, sectionsv xviii, xxvii, and iv will apply.
5) The trees retained following salvage operations will have a range of distribution patterns (relatively even-spaced to some clumping), recognizing operational limitations, and subject to the availability of standing trees.
6) Adjust the timing of entry and/or other operational factors to minimize unnecessary site disturbance that could potentially result in ecological damage (e.g., avoid salvaging a swamp in the frost-free period).
7) Reasonable efforts will be made to avoid leaving potential windrows or crushing of downed woody material.

[redacted]Trails

Description

Trails and portages provide traditional access routes to fishing, hunting, trapping areas, canoe routes or registered recreational trails (OFC snowmobile trail). These features are not always mapped and are normally identified during layout and operations or by users of the trails.

Conditions on Regular Operations, Landings, and Aggregate Pits

1) MNRF or the trail owner or user is to identify trails to HPL during the AWS review stage.
2) Trails to be marked prior to harvest. If the trail cannot be found, HPL will request the assistance of the trail owner or user.
3) Harvesting operations will ensure that trees or logging debris are not left on the trail after felling and trail remains marked after operators are complete.
4) If cultural heritage or archeological values are found, then the APA or CH AOC will be applied.

5) No mechanical site preparation will be allowed across the trail.
6) New aggregate pits are not permitted within 15 metres of a trail bed, unless prior acceptance by trail representative is obtained.

[redacted] Snowmobile trails

Description
Trails owned and maintained by the Ontario Federation of Snowmobile Clubs

Conditions on Regular Operations, Landings, and Aggregate Pits

Where the snowmobile trail crosses areas selected for operations, operations will mitigate the impact on the trail by:

- Contacting the Snowmobile Club by December 1st 19 to review and discuss potential conflicts
- Keeping the trail open and free of debris.
- Posting trail crossing signs on roads in areas where the trail crosses an operating area or road.
- Posting operations signs on the trail where the trail crosses an operating area or road.

[redacted] Water crossing Decommissioning, Rehabilitation, and Replacement

Description

The following conditions will be applied the decommissioning and rehabilitation of water crossings. Sections of these standards that are relevant to the replacement of previously installed water crossings will be applied accordingly.

Conditions

1) AWS-2 will identify which water crossings are scheduled for decommissioning as part of the annual AWS for MNRF fisheries review.
2) If decommissioning of a road or road system is being considered, all water crossings on that road or road system will be assessed. Water crossings that will no longer be maintained will be formally decommissioned in an environmentally sound manner and approved by MNRF. Decommissioning will include the removal of all water crossings for the segment of road being decommissioned and signage will be placed at the start of the road warning the general public that the road is decommissioned.
3) During decommissioning, workers will prevent contamination of a water feature by foreign materials such as lumber, nails, logs, brush, fuel and oil.
4) Decommissioning and rehabilitation operations that may enter a water feature (in-water work) or that may potentially cause sediment to enter a water feature are not to occur during periods of fish spawning, incubation, or fry emergence according to timing restrictions identified in water crossing AOCs, unless approved by MNRF.
5) HPL will monitor operations and mitigation techniques to prevent the harmful alteration, disruption, or destruction of fish habitat, the impairment of water quality, and problems related to fish passage.

6) Fill material placed below the high-water level within the floodplain of a water feature will be erosion resistant and/or protected from erosion.
7) Any exposed mineral soil between the height of land and the water crossing, or within 100 m of the water crossing, whichever is less, will be trimmed to a stable angle and be protected from erosion so sediment will not enter the water.
8) Upon completion of decommissioning, any temporary fill, construction materials, culverts, and refuse Will be removed from the construction area and disposed of in a satisfactory manner.
9) Following decommissioning, on-site inspections will be made by HPL to confirm the standards are being met. Problems will be reported to MNRF immediately.
10) For decommissioned water crossings that have not been removed, have a monitoring program to identify and mitigate safety and environmental issues.
11) These standards are applicable to previously installed water crossings when they are replaced.
12) HPL will evaluate the following criteria to determine if/how a water crossing will be removed:
    a) Biological
        i) History of beaver activity
        ii) Sensitivity of fish species
        iii) Whether the structure is currently an impediment to fish migration or may be an impediment to fish migration in the future.
        iv) The presence of critical fish habitat and the likelihood.
        v) Whether removal activities would cause damage to fish or fish habitat.
    b) Water Quality
        i) In the event of a washout or erosion problems, will additions to natural background levels of suspended sediments affect downstream fish habitat or other values.
    c) Engineering
        i) The type of the water crossing structure (e.g. culvert).
        ii) The length of time the structure was designed to be functional (e.g. whether the crossing has been designed for a 10-year or 100-year storm event).
        iii) The expected life of the materials used in the construction of the crossing structure.
        iv) Whether the fill material is similar to the streambed/stream bank material.
        v) Whether the road will allow for floodwaters to pass without washing out.
        vi) The amount and type of fill used in construction of the water crossing.
        vii) Impact of removal of the crossing on the use management strategy of the associated road or road network.
        viii) Costs of removal.
    d) Safety
        i) If the water crossing structure failed or if a washout occurred, would a hazardous situation result.
13) Ensure the schedules for water crossing and road or road network decommissioning are coordinated Decommissioning of water crossings is related to decommissioning of roads.
14) Decommissioning of the water crossing will be consistent with the vehicular traffic expected by the use management strategy for the road or road network.
15) Where the water crossing has been removed fording will be an option provided there will be no damage to the stream.
16) The appropriate technique for the conditions encountered at each water crossing will be utilized to minimize disturbance of the water feature and the potential for erosion and sedimentation during and after decommissioning.

[redacted] Water Crossing Design, Location, Installation, and Maintenance

Description

The direction in this section is applicable to all water crossings (i.e., temporary and permanent) and all road categories (i.e., primary, branch, operational) unless more specific information is provided (e.g., direction is for a temporary, winter-only crossing). The following conditions apply to the design, installation and maintenance of water crossings.

Conditions on Water Crossing Design, Location, Installation, and Maintenance

1) Culvert and bridge opening size will be determined by hydrologic and hydraulic analyses.
    a. A water crossing structure with a single span greater than 3 metres is considered a bridge.
2) All permanent culvert and bridge crossings shall be sized to a minimum Q_{25} design flow standard:
    a. Temporary winter bridges that will be removed before the spring freshet are not required to be designed for the 25-year flood (Q_{25}).
3) Crossings will be constructed in accordance with the direction and standards described in the Ministry of Natural Resources and Forestry/Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings
4) AWS-1 will identify which water crossings that are scheduled for construction as part of the annual AWS for MNRF fisheries review.
5) Selection of the type of water crossing structure, its location and its capacity to pass water and allow for the movement of fish, will consider:
    a. Possible negative effects on the form and function of the undisturbed natural channel and its floodplain.
    b. The fish species present and the impact of the crossing structure on them, as required by the Fisheries Act.
    c. Whether the water crossing is over navigable waters
6) Avoid crossing in areas which affect known critical fish habitat, such as fish spawning, feeding, over-wintering, or nursery areas.
7) Avoid steep high banks or sites where actively slumping banks are evident.
8) Choose a site where the road approaches are favorable and earth cuts are not required within 100 m of the water's edge.
9) Those responsible for installation and maintenance will monitor operations and select operating practices, materials, and mitigation techniques at each water crossing to prevent any serious harm to fish. Section 35 of the Fisheries Act prohibits the death of fish or permanent alteration to, or destruction of fish habitat.

[redacted] Wildlife Trees and Cavity Trees

Description

Wildlife trees are left after harvesting to form part of the residual forest structure, like a wildfire or blowdown natural disturbance event. Wildlife trees will normally consist of wind-firm live trees, dead dying trees (snags), super canopy and veteran trees (large old white spruce), cavity trees (poplar and cedar), diversity trees (white pine, red pine, black ash, or red maple) and stubs. Wildlife trees will be measured based on any given 20 hectare area within a harvest block. The block area will exclude the areas within roads, landings and roadside work areas.
Wildlife trees must be ≥10 cm dbh and ≥3m in height unless the direction specifies:

- That 'large' stems or stubs are to be retained. In this case, the minimum dbh is ≥25 cm

OR

- That cavity trees, mast trees, scattered conifers, veteran trees, or super canopy trees (generally ≥60 cm dbh) are to be retained. In this case the minimum dbh is ≥25 cm.

Conditions on Regular Operations, Roads, Landings, and Aggregate Pits

1) When available, retain an average of ≥25 trees per hectare that are ≥10 centimetres diameter at breast height and ≥3 meters in height.
2) When available, retain an average of ≥10 large trees (minimum dbh is normally ≥25 centimetres) per hectare with at least 5 living trees.
   a) Large wildlife trees will be a mix of living cavity trees, stubs, super-canopy trees, veteran trees, diversity trees, and safe dead trees.
   b) Large wildlife trees should reflect the species composition of the stand. However, when available, trembling aspen and white spruce are the preferred species; white birch is also a suitable component of the wildlife tree mix.
   c) When the number of large wildlife trees averages less than 25 trees per hectare, additional wildlife tree requirements may be met by retaining small safe standing dead trees, small stubs, or any other living trees
3) Wildlife trees that fall to the ground, or are purposely felled for worker safety reasons, will be left for downed woody material.
4) Trees that are stubbed to no less than 3 metres in height can contribute to the 25 trees per hectare target. Ideally, no more than 50% of the trees will be stubbed.
5) Wildlife trees will generally be well dispersed. Retain an average of at least 15 individual stems per hectare with the remaining stems may occur in clumps;
6) Wildlife trees will be well dispersed. Clumps of 10 or more trees can contribute up to 10 trees per hectare to the 25 trees per hectare target;
7) Wildlife trees that are also cavity trees, veteran trees, super canopy trees or diversity trees will be retained as a priority. Wildlife trees will otherwise reflect the tree species, age and size class mixes of the particular harvest block
8) Reasonable efforts will be made to avoid knocking down standing wildlife trees during renewal and tending treatments.

[redacted] Woodland Pools

Description

Recognizable temporary bodies of open water encountered during operations that have a surface area ≥500 m2 (i.e., about 25 m in diameter if circular), are not ponds (i.e., <0.5 ha in size), and are not connected to a stream or associated with a mapped non-forested wetland/. Woodland pools hold water intermittently, do not support fish, and are not mapped, so they are only encountered during layout and implementation of operations.

Conditions on regular operations, Roads, Landings and aggregate pits

1) No harvest, renewal, or tending operations are permitted that will result in deposition of sediment within, or reduction of the water-holding capacity of, woodland pools. Operations specifically prohibited include:

    a) Machine travel within 3 m of the high-water mark of pools during the frost-free period.

    b) Excessive removal or damage of sapling-sized trees (<10 cm dbh) and shrubs within 3 m of the high-water mark of pools.

    c) Felling of trees into pools or within 3 m of the high-water mark of pools during the frost-free period. Trees accidentally felled into pools will be left where they fall.
    d) Disturbance of the forest floor that leaves ruts or a significant area of exposed mineral soil within 15 m of the high-water mark of pools. Ruts or significant patches of exposed mineral soil will be promptly rehabilitated.

2) No contamination of pools by foreign materials is permitted. Specifically:

    a) The use and storage of fuels will be carried out in accordance with the Liquid Fuels Handling Code.

    b) No equipment maintenance (e.g., washing or changing oil) is permitted within 15 m of the high-water mark of pools.

3) Landings and aggregate pits are not permitted within 15 m of the high-water mark of pools.

4) Unmapped residual patches will preferentially be connected to pools. When connecting residual patches to pools, trees will be retained in and within 3 m of the high-water mark to provide overhead shade, and residual forest will be retained within at least 15 m of the high-water mark to provide amphibian cover.

5) New roads are not permitted within 15 m of the high-water mark of pools unless there is no practical or feasible alternative and appropriate mitigative measures are taken to minimize the risk of sediment entering pools and disruption of hydrological function (see Section 5.1).

(r) Nagagami Forest Compliance Strategy

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1.0 Introduction

This compliance plan, which outlines the forest compliance strategy on the Nagagami Forest for the period April 1, 2021 to March 31, 2031, has been prepared in accordance with the MNRF Forest Compliance Handbook (Revised 2014), which became effective for planned operations in 2015.

2.0 Compliance Trends

During the first eight operating years (2011-2019) the Company conducted a total of 284 inspections and the MNRF conducted a total of 115 inspections for a total of 370 forest operation inspections carried out. Of the 272 Company reports 24 were not in compliance and 17 of the 103 MNRF reports. Most non-compliances have been related to utilization. There are two main reasons for the utilization non-compliance being issued;

1) *Heritage conifer pulp* – Olav Haavaldsrud Timber Company Ltd (OHT) was not effectively utilizing all the small diameter conifer that was being encountered by the Nagagami Forest harvesting operations. Poor conifer pulp markets caused OHT to place a priority on sawlog deliveries to their mill. OHT management directed to defer the utilization of the non-sawlog conifer until the Becker Cogeneration facility was on-line and could consume the material as biofiber. As a result, practises that were contrary to the Scaling Manual occurred with respect to small diameter conifer. Contractual, financial, and other process issues caused a serious delay to the planned Startup of the cogeneration facility which compounded the conifer pulp utilization issue.

2) *Closure conifer* – In November 2015, the Haavaldsrud sawmill suspended all company operations thus leaving harvested timber stranded in the recent and ongoing harvest blocks. The harvested timber was in various stages of process at the time of the suspension: unskidded full tree; and, or full tree / treelength / processed at roadside. The unutilized timber was ranked as an operational issue for tracking purposes. On April 11, 2016, the Haavaldsrud sawmill was placed into Receivership, thus relinquishing all prior management rights with respect to their traditional ongoing operations.

The Haavaldsrud sawmill has since been sold and is now operating as Hornepayne Lumber Limited Partnership. Hornepayne Lumber has developed a plan to address the past conifer utilization issues. They have made considerable progress in utilizing both the heritage conifer pulp and closure conifer and continue to merchandise these materials.

All instances of non-compliance are treated seriously and may result in more training when required and communicated with contractors working on behalf of Hornepayne Lumber. Hornepayne Lumber continues to train and monitor contractors working on the Nagagami Forest. Annual refresher training is provided to all contractors shortly after the AWS has been

approved. Before harvesting starts in a new block, a start up meeting is conducted between FRMG and the harvesting contractor to review the FMP requirements.

Various staff members including professional, technical and supervisory staff of the licensee and its contractors, contract compliance inspectors, and professional and technical forestry staff of the MNRF will monitor forest operations for compliance with the Forest Management Plan and the regulatory framework and any applicable standards and requirements. The compliance monitoring program comprises all means by which operations are inspected for compliance and includes inspections conducted as part of the licensee's supervisory responsibilities, quality control systems, standard operating procedures or requirements for forest certification, surveillance audits and ad hoc assessments of forest operational activities. These monitoring activities will complement the formal compliance inspections for which reports are submitted to the Forest Operations Information Program (FOIP) and will be an integral part of the monitoring program. The monitoring program will also include area inspections by MNRF staff, an assessment of aerial photography, analysis of annual reports and individual inspections when required. The monitoring of forest operations is further described in the Annual Work Schedule, which outlines compliance reporting areas and the timing, frequency, and methods to be used to monitor the forest operations that are scheduled for that year.

Compliance performance will be communicating to the Local Citizens Committee during the review of the Annual Report and will take place on an annual basis.

3.0 Compliance Goal

The goal for forest compliance is "to encourage and ensure adherence to rules and requirements which contribute to the sustainable management of Ontario's forests." (A Forest Compliance Strategy, 2007 OMNR)

The goals for all forestry operations on the Nagagami Forest are:

1. To reduce and seek to eliminate all non-compliance.
2. To monitor forest operations, encouraging and ensuring that all applicable Government regulations and standards are met or exceeded.
3. To ensure immediate corrective/preventative action is taken in the field when incidents of non-compliance are identified.
4. To implement continuous improvement in all activities and pursue the highest standard of forest practices.

In cases of non-compliance, the incident will be promptly noted, recorded, and reported to the MNRF, following The Forest Compliance Handbook directives and procedures. Appropriate action is taken within the organization to prevent future occurrences of a similar nature.

4.0 Background

The compliance strategy will assist in improving operating practices. It will guide and direct all licensees and contracted activities to ensure compliance with the regulatory framework.

5.0 Compliance Objectives

MNRF's Forest Compliance Strategy encompasses all legislation and policy that pertains to forest operations on Crown land. The objective of the Forest Compliance Strategy is to ensure compliance with rules, standards and requirements that are designed to protect the forest ecosystem while allowing for the realization of benefits which do not compromise the long-term health of the forest ecosystem.

Ensuring that forest operations achieve this objective requires a comprehensive compliance strategy that involves MNRF, licensees, contractors, and operators. A system that incorporates education, training, information exchange, strict supervision, a system of operational controls, independent review, work inspections, documentation of results, analysis of the root cause of problems, the implementation of mitigative measures and a process that fosters continual improvement is required to achieve compliance goals. Forest compliance monitoring, which is the focus of this section of the Contingency Plan, is but one component of a comprehensive compliance strategy.

The following three inter-connected compliance monitoring strategies will help to achieve forest compliance goals:

1) Ensuring that the forest compliance monitoring program reflects the complexity of forest ecosystems and framework provided by plans, manuals, directives, procedures, and guidelines.
2) Ensuring that compliance monitoring activities are conducted efficiently, effectively and in a timely manner.
3) Ensuring that appropriate fees are collected, good performance is recognized, and appropriate remedies are applied.

The desired outcome is to develop and implement a system of continual improvement on the Nagagami Forest that incorporates inputs from MNRF, industry and the public and reduces the instances of non-compliance and works towards the prevention of non-compliant activities.

Compliance Objectives for all forestry operations on the Nagagami Forest are as follows:

1. Resource Protection

1.1 To make the well-being of the forest ecosystem a priority in compliance planning and implementation.

1.2 To ensure that forest operations (access, harvest, renewal, and maintenance activities) will not impair or negatively affect forest sustainability.

1.3 To continuously evaluate the impact of forest operations on the natural environment and take all necessary corrective action to mitigate impacts and avoid future impacts.

1.4 To contribute to the protection of the forest against fire, disease and insects through prevention and remedial action.

2. Overcoming Historical Compliance Problems

2.1 To actively monitor forest operations and undertake analysis and evaluation of results and take corrective action as required.

2.2 To proactively overcome compliance problems.

3. Continuous Improvement

3.1 To develop operating benchmarks (calibration) in forest operations to measure continuous improvement and performance.

3.2 To develop and implement an action plan to remedy recurring problems.

3.3 To develop and contribute to a compliance database to assist in performance evaluation.

4. Training and Education

4.1 In an effort for continuous improvement the licensee will work closely with their harvest and silviculture contractors and staff to ensure they are well trained and understand their operational responsibilities.

4.2 Periodic specific procedural training should be undertaken for subject areas such as:

(a) Careful logging practices;

(b) Sites sensitive to harvesting practices such as steep slopes and fine textured soils;

(c) Operations in the vicinity of areas of concern;

(d) Road construction and in the installation of water crossings; and areas where there is a direct interaction with other resource users.

5. Communications

5.1 To maintain and develop methods of communication that ensures continued open and productive communications between the licensee and the MNRF regarding compliance of forest operations.

5.2 To ensure compliance reporting reflects the nature and complexity of forest operations in a thorough and timely manner.

5.3 To develop and implement methods that ensure MNRF is continually apprised of the current status of operations following timelines identified in the Forest Compliance Handbook .

6.0 Risk Analysis and Management

A risk assessment and management approach will be used at the AWS stage to set monitoring priorities for the activities scheduled for the upcoming year. This assessment will consider the historical operational performance of the licensee or contractor that will conduct each operation, the risk characteristics of the proposed operation, and the systems designed to detect, control, and mitigate risk. This approach will recognize the monitoring activities and inspection systems employed by each licensee that are part of regular operational controls that contribute to the requirements of certification or that are implemented to collect specific operational information or document activity. The focus of this approach is to achieve the best risk management decision in the planning and allocation of compliance monitoring resources, given all the other mitigating measures put in place, and in so doing, strike the appropriate balance between:

- Minimizing the likelihood of non-compliant occurrences;
- Minimizing the probability of the failure of monitoring systems to detect a non-compliance; and
- Minimizing the amount of or adequately mitigating any loss or damage resulting from non-compliance.

7.0 Strategies and Actions

The overall strategy for compliance programs on Crown lands will be “To ensure compliance with rules and requirements that are designed to protect the forest ecosystem while allowing for use which does not compromise the long term health of the forest ecosystem.”

The following outlines the basic supporting strategies for the Compliance Program objectives:

1. To ensure that all forest operations (harvest, access, maintenance, renewal) are supervised by competent industry personnel and conducted by operators that have been trained in work practices that are designed to maximize compliance with plans and legislation for

protecting and maintaining the long term health of the forest ecosystem. (Contributes to the achievement of objective 1.)

- Educate personnel regarding government legislation/policy and licence policy to promote an attitude that fosters an awareness of environmental, forest management, and compliance issues in their specific tasks.
- The licensee will develop and implement a training program that will train forest workers in proper techniques of forest operations so that all operations follow approved guidelines/manuals/plans. New employees will be trained in a timely fashion and continued training for all staff will be scheduled and documented to ensure all staff remains competent in their work practices.
- Establish in the minds of all forest workers that the well-being of the forest ecosystem is a priority.
- Keep abreast of legislation and policy development (with the assistance of the MNRF) to ensure that new requirements are promptly incorporated.
- Maintain training records for forest workers to ensure they have the appropriate and relevant type of training.
- Keeping abreast of, and implementing where appropriate, new technology and techniques that would enhance environmentally sound forest practices.
- The FRL holder will ensure that the layout staff and foreman/certified inspector have the required maps, photos, equipment, and technology to carry out operations.
- Only MNRF approved AWS maps which identify the FMP 11 prescriptions to be implemented because of detailed AOC planning are to be used for block lay-out or harvesting activities.
- All AOC prescription boundaries are located and marked in the field by trained technical personnel that are familiar with the various guidelines used to prepare AOC prescriptions
- The licensee will hold start-up meetings with operations staff (company and/or contractor) to familiarize operations personnel with additional requirement for protection of values.
- After the completion of the block layout, the layout staff will prepare a map for the foreman illustrating the Global Positioning System (GPS) block layout track as it corresponds with the approved harvest block boundary. This will verify that the block boundaries are properly located. Any discrepancies will be documented and addressed in accordance with the intent of the Forest Management Plan.
- Before forest operations can begin, foreman is to ensure the layout is identified on the operations approved map and verify the ribbons at time of start up with the forest operations operator (e.g. feller buncher operator, bulldozer operator).
- All new foremen will receive a formal orientation briefing in which approval maps will be reviewed, discussed, and clarified. Foremen and layout staff are required to use

appropriate tools such as GPS, compass, hip chain, aerial photographs, and maps to ensure the accurate location of all lines.

- If layout staff experience problems related to the interpretation of maps, photo, or local magnetic attraction, the MNRF must be consulted for clarification.
- No boundaries are to be cut at night. It is also advisable for operators to communicate between shift changes to discuss the specifics of the area being harvested.
- A copy of the approved map of the area being harvested is always to be kept in the feller-buncher or skidder.
- Foremen are to hang more flagging along boundaries where rough terrain is encountered, especially along AOCs.

The effectiveness of this strategy will be measured through regular compliance audits conducted by certified inspectors.

2. To monitor forest management operations to determine the degree to which all applicable rules, regulations, operations, conditions, etc. are implemented and to report on the findings (contributes to the achievement of objectives 1, 2, 3, and 4.).

- All forest workers will be required to promptly report instances of non- compliance that they encounter as per the Forest Compliance Handbook.
- Employees that are trained & Certified Inspectors are to visit forest operations, observe work performance, undertake detailed measurements, note, and assess performance levels and communicate their findings to licence and record reports in FOIP database.
- An annual plan of action will be prepared that identifies compliance priorities and a monitoring schedule will be developed (Refer to section FOR 07 02 04 in the Compliance Handbook).
- If an operational issue is identified, a compliance inspection will be carried out and a report of the inspection will be filed in FOIP as per section FOR 07 03 05 in the Compliance Handbook.
- In the instance of non-compliance, MNRF should keep good communication with the licensee and determine next actions to be taken. Part VI - Remedies and Enforcement in the Compliance Handbook is to be consulted for directions.

3. To analyse the results of the monitoring program to develop/modify annual training requirements and priorities and assess progress (contributes to the achievement of objectives 2 and 4.).

- Prior to the preparation of the annual compliance schedule, the licence holder (s) and / or the MNRF may identify recurring compliance problems, if such problems exist. These compliance problems may be highlighted as priorities for the Forest Operations Inspection Program in the annual compliance schedule.

- MNRF will conduct Forest Operation Inspections on all licence directed forest management operations. The frequency of inspections will be proportional to the risk of the activity in potentially causing harm to the sustainability of the Forest.
- Work together with MNRF to ensure that there is a permanent record maintained of compliance monitoring results for inspections not reported through FOIP.
- Consult with MNRF regarding environmental mitigative measures.
- Joint inspections will be encouraged to ensure consistent interpretation of standards by the licence holder and MNRF inspectors.

4. To co-operate with MNRF and other regulatory agencies to ensure that the Compliance program is efficient, effective, and appropriate (contributes to the achievement of objectives 1, 2, 3, and 5.)

   - Developing a spirit of co-operation in sharing information to minimize duplication of certain tasks.
   - Provide advice to company staff and MNRF policy makers regarding compliance matters.
   - Carry out joint inspections to facilitate a transfer of science and technology.
   - Invite MNRF personnel to participate in licence(s) / contractors workshops and training sessions.
   - Attend MNRF training sessions.

8.0 Roles and Responsibilities

The successful implementation of this strategy is dependent on all staff involved in compliance being adequately trained and understanding their specific roles. Collectively there is a commitment to ensure that all forest operations are carried out in accordance with the approved Forest Management Plan.

The following outlines anticipated roles and responsibilities under a system where there is no SFL holder (or equivalent management entity) or long-term licensee. Roles and responsibilities may, and probably will require review and revision in each AWS due to the impermanent nature of the current operating environment. Licensees are responsible for conducting Forest Operation Inspections on all harvest and access activities on their licence area.

There are several specific functions related to the preparation and implementation of the compliance plan. The following positions within MNRF will be responsible for the described responsibilities:

MNRF Forestry Technical Specialist:

The MNRF will take the lead role in preparing the annual compliance plan. The Forestry Technical Specialist will be responsible for the compliance plan preparation with assistance from operations staff. This position is the lead for compliance related matters on the unit and will be the primary contact for any industry issues. The Forestry Technical Specialist will ensure compliance performance on the forest is communicated to the local citizens committee for their review.

MNRF Technician – Certified Compliance Inspector:

The inspector is responsible for inspecting and reporting forest operations (at the level specified by the district team and/or as specified in the AWS). Will conduct audits and field verification of operational issues. Will be responsible for ensuring all issues are followed up on and tracked for compliance.

MNRF Resources Management Supervisor:

The supervisor approves MNRF reports submitted in FOIP,

Forest Industry Participation and Responsibilities

The degree to which individual licensees will participate in the compliance monitoring program will depend on the capabilities of the licensee and the responsibilities delegated to the licensee through conditions on the licence or other instruments.

Licensees will provide information to MNRF at the AWS stage that outlines the roles and responsibilities of their staff (and contractors) and describes how they will fulfill their compliance monitoring responsibilities. The licensee will identify the position within their organization that is responsible for:

- Conducting forest operations inspections and submitting reports through FOIP. Industry inspectors must be certified and will be given an MNRF FOIP account. The licensee will provide MNRF with a list of certified inspectors that will conduct work on their behalf and will keep MNRF informed of any changes to the list.
- Approving inspection reports prior to submission through FOIP.
- Communicating with MNRF on all compliance related matters.
- Implementing corrective actions or mitigation.
- Submitting “Status of Operations Reports” (described in section 4.7.1.7).
- Providing MNRF with annual and season updates on their operating plans.
- Ensuring that FMP requirements are communicated to contractors and operators.
- Ensuring that operators are adequately trained.
- Documenting and maintaining training records for each employee or contract operator.

9.0 Notification of the Status of Operations

For the proper assessment and evaluation of operational compliance, MNRF must be made aware of all operations on the forest. Notification of operations is for information purposes only and aids MNRF when consulting with forest stakeholders and clients. For the Nagagami Forest an "Operations Notification Table" format will be utilized for notifications.

The Operations Notification Table is to be updated weekly and will indicate all operations on-going on the unit. It will also serve as a start-up notification for any new activity if submitted within the five-day requirement period. Any change to a block's operational status will necessitate submission of this table, highlighting the change, to MNRF. Both notifications will be sent by e-mail to the MNRF Forestry Technical Specialist and certified inspector. This information should be filed and easily accessible by other staff (i.e. Management Forester).

The reporting timelines below are minimums and must be followed for all operations. In cases when it is required to release blocks (or portions of) to permit another forestry activity to occur within the area this table must be provided in advance of the start of the other activity.

• **Start-Up:** The Licensee must provide written notification to the MNRF prior to or within 5 working days of the beginning of a new operation.

• **Suspended:** The Licensee must provide written notification (as per the compliance plan) to the MNRF prior to or within 20 working days of suspending an operation or activity. A suspended operation is one where the operational activities must be delayed and are not complete and therefore cannot be assessed for some aspects of compliance. That notification must clearly describe the operation being suspended, its location, and specify why the operation is being suspended and when it is proposed to be restarted. Operations may not be suspended for more than the balance of the period of the current AWS and one further AWS period.

• **Release:** A Release is where a licensee wishes to provide the MNRF a "Release to MNRF for compliance audit" for any part of an operation's Compliance Reporting Area. This release must be in writing. A Release Notification is required no less than 10 working days prior to the commencement of any new operation. A Release Notification must be clear and specific about what is being released, the area being released and why the release is being provided. This may be done where the licensee wishes to:

- Commence a new operation on that area such as renewal (e.g. mechanical site preparation or slash pile burning);
- To acknowledge harvest is finished but the wood has yet to be hauled:
- To allow compliance to be assessed for that portion of the operation that is finished.

In this context, a "release" is a confirmation by the licence holder that the activity(ies) being released is finished on that portion of the area identified for release, is without operational issues, and is available to MNRF for audit.

It is possible to suspend a harvest operation because it cannot be considered complete pending the haul of the wood and at the same time provide MNRF a Release Notice for the harvesting activities so that site preparation can be undertaken.

- **Completion:** Notification that an operation for a compliance reporting area is complete is normally accomplished by filing a "completed" compliance inspection report in FOIP. In circumstances where the compliance monitoring risk management strategy identifies that no compliance inspection is planned to be conducted and FOIP report filed, then a written Completion Notice must be filed.

10.0 Prevention, Avoidance, and Mitigation

It is the responsibility of forest managers to take action to prevent and avoid potential operational issues in a decisive, timely and appropriate manner, thereby mitigating any loss or damage, or correcting the situation and ensuring a compliant status.

Emphasis will be on prevention of undesirable activities or occurrences and mitigation of any loss or damage. The root cause of an undesirable activity or event will be determined, and appropriate action prescribed. Action will be consistent with the potential for non-conformance to legislation and the ability to adapt so that non-compliance does not become a recurring problem. This positive action will be delivered by forestry industry staff and will focus on learning and adapting to ensure that it does not occur again.

Where an undesirable activity has occurred, the licence holder will be responsible to ensure that the actions described in this section are implemented. In areas with high values, such as waterways and wildlife habitat, the MNRF will verify the identified Operational Issue. MNRF may then determine and assign corrective action as appropriate. In instances where the Industry inspector determines a situation to be clearly non-compliant, the direction will be that work will stop on that part of the operation and the inspector will submit a report of an Operational Issue.

Where any Industry operating personnel, during ongoing monitoring of operations, identify a situation they believe could be an Operational Issue(s), they will undertake one of the following actions:

- If there is a violation of the approved FMP or AWS, (including supporting guidelines) or a threat to the environment, immediately stop the operation and take the necessary steps to stop further possible non-compliance/ harm.

- Report the situation to the MNRF immediately, who will conduct a formal compliance inspection. The certified inspector will determine if the situation is a violation of an approved plan or a threat to the environment and what further action to take.
- If the situation cannot be immediately corrected, the certified inspector (MNRF or/ and licensee) will submit a report to be approved in FOIP that documents their findings with an Operational Issue created. Ensure that the issue is identified to the MNRF and other regulatory agencies as appropriate. (Section FOR 07 03 05 - Refer to the flowchart in The Forest Compliance Handbook.)

11.0 Compliance Reporting Area(s)

A Compliance Reporting Area is the area of land described for the purposes of planning and implementing forest compliance inspections. It also forms the geographic basis for which a forest operations compliance inspection report will be submitted to the FOIP or a written Completion Notice will be filed.

Forest operations will be grouped into Compliance Reporting Area(s) (CRA) for each operation type (access, harvest, renewal, and maintenance), based on the characteristics of the operations and the operational complexities of the specific areas of the forest that are involved. The simplest operational division for the Nagagami Forest is defined as an operating block.

Compliance Reporting Areas (CRA) will have a map created each year or carried forward from the previous years approved map. Industry and MNRF compliance staff will work together to come up with the areas and coding system, keeping in mind once a block or CRA is operated in the block identifier cannot be changed.

In areas where the total proposed harvest area exceeds 500 hectares the harvest area will be broken down into CRAs of less than 500 ha. When completing FOIP reports these CRAs can be reported on individually or grouped together but keeping in mind the 20 day no activity reporting timeframe.

Each AWS will provide greater detail on how access, renewal, harvest, and maintenance areas for the upcoming year are to be grouped.

12.0 Monitoring Compliance of Forest Operations

The timing and frequency of monitoring activities conducted during actual forest operations is described in Section 4.7.1.5 to support the achievement of compliance objectives developed from the Forest Management Plan. See the Forest Compliance Handbook FOR 07 03 04 and FOR 07 03 05 for more details.

In addition to the timing and frequency of monitoring activities detailed above, the licensee may opt to modify its reporting requirements for the following unique situations:

- Seasonal site conditions or market situations may not permit the completion of harvesting operations within a CRA or block, while these operations have been completed in another portion of the same area. In this type of situation, the licence holder may elect to release a portion of the area before the next stage harvest operation begins. This will permit renewal operations to commence within the completed area. Further details will be laid out in the AWS so that they are clear to both the MNRF and industry inspectors.
- For CRAs consisting of high productivity upland mixed wood stand types, the licence holder may choose to reduce the Compliance Reporting Area size so those areas blocks can be inspected and approved for renewal operations to minimize potential competition through immediate start-up of site preparation immediately after notification by MNRF. Further details will be laid out in the AWS so that they are clear to both the MNRF and industry inspectors.

In the future, if a unique, unusual, or new operational situation arises in relations to Compliance Monitoring, approaches will be described in detail in the AWS to ensure clarity to both the MNRF and industry inspectors.

The general functions related to the compliance inspecting and reporting processes are detailed in Section 8.7.1.6. Details concerning the identification of inspectors and approvers and any other special considerations related to monitoring compliance of forest operations will be identified in the applicable AWS and is updated by the licence holder annually.

A Monitoring and Operational Issue Management Process flow chart in section FOR 07 03 05 page 17 in the Forest Compliance Handbook is available for additional assistance. The chart provides direction and overview on the management process of inspection and operational issues related to Compliance Monitoring. MNRF and industry certified inspectors should refer to this chart as an aid to ensure proper procedures are taken when operational issues are identified.

The online version of The Forest Compliance Handbook is the official document. An approved Forest Management Plan is the official document and supersedes other legislation as it may outline special conditions to AOC's and operating practices. All certified inspectors should refer to this version to ensure that the latest updated information is being used. It is the inspector's responsibility to ensure they are referring to the most up to date Forest Management Directives and Procedures found in the handbook and are aware of any other changes made to the document.

For purposes of reporting operating issues, procedures for the measurement of rutting, the retention of wildlife trees and the retention of unmapped residual forest will be as described section 13.0 of the Supplementary Documentation unless the MNRF and Licensee agree in writing to a mutually acceptable alternative procedure.

(s) MNRF Northeast Region Utilization Strategy

Northeast Region

Creating Forest Operations Opportunities in Low Market Conditions Strategy

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FINAL

August 5, 2020

Regional Operations Division

Ontario Ministry of Natural Resources and Forestry



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1. Executive Summary

Low markets for forest products have been a prevailing issue in the Northeast Region particularly over the past 10 years coinciding with the impacts of mill closures and curtailments during the US housing market recession of 2008. This strategy builds on past efforts to develop solutions that address a lack of markets for certain wood products and tree species. In recognition of these challenges, the Ministry of Natural Resources and Forestry (MNRF) Regional Operations Division, under the direction of the NER Regional Director, formulated a forest industry and government working group to evaluate the current effectiveness of the Strategy. During this review current practices occurring across the region were examined, and new solutions to more effectively address ongoing low market challenges across the Region were developed.

Solutions put forward through use of this Strategy must ensure the implementation of effective silviculture practices and the overall sustainability of the forest as the highest priorities. Further to this, this strategy is compliant with the current policy framework and does not seek to modify or deviate from that direction.

The Northeast Region has a variety of local and unique challenges within each of the Districts. This Strategy provides streamlined solutions and direction to handle these challenges while allowing local flexibility to address a lack of markets.

This document contains four key components to assist both MNRF staff and forest industry in implementing collaborative utilization solutions:

- Determination of Markets
- Risk Evaluation – Timeline and decision support
- Forest Operational Prescriptions
- Risk Based Monitoring and Reporting

It is expected that during implementation, all parties, MNRF, Sustainable Forest License managers (SFLs) and Forest Industry will work together for the common objective of encouraging forest operations solutions and addressing challenges together, where they exist.

2. Purpose of Creating Forest Operations Opportunities in Low Market Conditions Strategy

Since the early 2000's the Canadian forest industry has faced challenges resulting in job losses and decreases in timber volumes harvested (MNRF, 2019). Declining demand in the pulp and paper and lumber markets (StatsCan, 2018), combined with increased costs for labour and energy have contributed to the downward trend (Boan et al., 2018) despite a forecasted global increase in forest products by 30% in 2030 (WWF, 2012). In this changing climate, economic factors become magnified. Mill closures across the province leave fewer destinations for timber to be processed and the costs of hauling and road building have made some wood volume economically infeasible to harvest namely small diameter conifer, birch and poplar. These impacts are most felt where stands have a mixed species composition. Un-marketable yet merchantable volume is being left on site which poses several problems including: contravention of the Crown Forest Sustainability Act 1994

(CFSA) and other MNRF Manuals and Guides; barriers to forestry operations; short and long-term wood supply to mills; lost forest revenue and negative perception from the public.

As global and regional market conditions shift during economic cycles, there is a need to have a flexible system in place to handle utilization challenges that is effective, minimizes risk, provides value to decision-makers and can occur with the necessary speed to support business decisions by forest industry on markets. These principles are echoed in the 2019 Ontario's Forest Sector Strategy. The Northeast Region Creating Forest Operations Opportunities in Low Market Conditions Strategy (the Strategy) has been developed in response to forest utilization issues as a result of persistent market challenges that affect the ability of many forest licensees to market certain tree species or wood products.

This Strategy builds on the implementation of a series of guides and strategies during the last two decades: *Towards Resolving Utilization Issues 1999, Northeast Region Operations Guide for Marketability Issues 2008 and 2013*. The previous versions were developed in response to the shortage of markets for low quality hardwoods across part of the northeast region. At the time of development, markets were forecasted to improve for this product type; as such, the main purpose of the previous Strategy was to provide a temporary solution to the challenges facing forest operations. With the persistence of market shortages for low quality hardwoods and the more recent downturn in the conifer pulp market, the problems of utilization as a result of low markets have expanded in scale and impact to most, if not all, license holders across the Northeast Region. As such, this Strategy serves to provide the following:

- Linkages to *Areas for Action: Putting More Wood to Work* from the "Blueprint for success: Ontario's Forest Sector Strategy – Draft"
- Tools that enable forest operations to continue in times of uncertainty without compromising the silviculture objectives and sustainability while ensuring optimum utilization of marketable forest products.
- Longer term solutions while addressing planning requirements for utilization put forward in the Forest Management Planning Manual (FMPM) see Appendix 2 - *Modelling Low Markets in the Proposed Long-Term Management Decision*;
- A means of tracking and monitoring areas harvested under application of the Strategy.

The objective of this document is to offer tools to continue harvest operations during times of market related challenges by providing direction for developing operational prescriptions for sites with utilization issues as a result of low-market conditions. Prescriptions will be created based on the guiding principles, and minimum considerations of this document. This strategy is meant to provide consistent, defensible, risk-informed direction for utilization across the Northeast Region. This approach also provides flexibility at the management unit level to develop appropriate forest operations prescriptions and effective silvicultural techniques while ensuring the sustainability of the forest. The Strategy is summarized in Appendix 1 – *Strategy Procedure Summary Flowchart.*

3. Legislative and Policy Context

This Strategy will comply with the legislation, policy, manuals and guides that direct forest management in Ontario. The strategy is compliant with the policy framework and seeks to complement and enhance this framework in cases where stands with high components of unmarketable fibre are to be harvested.

Prolonged challenges finding markets for various species and wood products across the northeast region and in many areas throughout the province has made it challenging for forest operations to access fibre and comply with the current utilization standards outlined in the scaling manual. This Strategy provides the ability to deviate from the utilization specifications in the Scaling Manual when it has been proven at the management unit level that limited markets or no market exists for the identified species or products. A risk management approach, imbedded in the Strategy, incorporates various levels of monitoring and reporting to provide assurance to the public, stakeholder and Indigenous communities that forests are being managed in accordance with the policy framework. As per the Scaling Manual, the approach of this Strategy will be documented in the Forest Management Plan (FMP).

The legal context of the Strategy is implemented under the *Crown Forest Sustainability Ac*t (CFSA). As a requirement of the CFSA, forest management planning and forest operations follow the requirements of the four regulated manuals (Forest Management Planning Manual, Forest Information Manual, Forest Operations and Silviculture Manual, and Scaling Manual) and are supported by direction in forest management guides. Excerpts from these foundational documents are listed below to help frame the discussion around wood utilization.

FMPM 2020 – Page B-22, Section 4.3.6

> *Any volumes that are in excess of the projected industrial wood requirements for the management unit will be identified as unutilized harvest volume. The text will also include a discussion of the sources of, and reasons for, unutilized harvest volumes. Anticipated effects on the achievement of management objectives and progress toward the desired forest condition, if the projected unutilized volumes are not utilized, will be documented in the text. The plan text will contain a statement that projected unutilized harvest volumes remain available for utilization to support industrial proposal. Reference FMP-14.;*

Scaling Manual 2017 (Page 90):

> *Minimum utilization standards have been designed to promote good forest management by ensuring optimum utilization of Crown forest resources on harvesting operations.*
>
> *The minimum utilization standards must be followed on all forest operations unless otherwise described in an approved Forest Management Plan. For example, merchantable trees and/or wood fibre may be left at a harvest site in order to satisfy silviculture and habitat requirements or because of market related issues associated with a certain species or product.*
>
> *Leaving merchantable trees at the harvest site because of market related issues must not jeopardize the silviculture or habitat objectives of*

that harvest site. Reasons for leaving merchantable trees and/or wood fibre in specific areas within a forest must be described in the approved Forest Management Plan.

Failure to comply with minimum utilization standards unless otherwise described in the Forest Management Plan is a wasteful practice. No person shall cause wasteful practices in forest operations.

Forest Operations Silviculture Manual, 2017 Page 8(a):

f) Avoiding Wasteful Practices
Wasteful practices are defined in relation to the minimum utilization standards for the province. These standards have been designed to promote good forest management by ensuring optimum utilization of forest products on harvesting operations. Poor utilization of forest products may result in loss of revenue, lower productivity or higher regeneration costs or may cause inferior or undesirable trees to remain on the site.

Forest Management Guide for Silviculture in the Great Lakes-St. Lawrence and Boreal Forests of Ontario (2015) (Silviculture Guide)

Section 3.1.1-page 21 Clearcut definition:
Most of the overstory trees are removed over a short period of time to create a fully exposed microenvironment of a new even-aged stand. General Characteristics: even-aged future stand, regeneration established in >70% full sunlight.

Section 3.1.3.2-page 34 Residual Tree Retention:
The quantity, species and quality of residual trees retained after harvest will be consistent with the silviculture objective for the site (Guideline). In cases where…residual retention that is not consistent with silviculture objectives, the practitioner will have to decide to either defer the harvest until such time as the full prescription can be applied, OR, make a pre-harvest adjustment to the silviculture objective (and prescription) to one that is consistent with projected post-harvest conditions.

Section 6.0 Adaptive Management; subsection 6.2.2-page 268 Trial Areas:
The intent of a trial area is to allow for the initial exploration of an idea, on a limited basis, with minimal administrative encumbrances. Individual trial areas may be undertaken to increase operational efficiency, improve achievement of objectives (i.e. forest condition), improve cost effectiveness, minimize adverse effects, demonstrate an expected failure, or any other number of reasons.

Forest Management Guide for Boreal Landscapes (2014)

> *Section 3.5.2.1 Stand and Site Level Direction for Woodland Caribou Habitat page 51:*
> *Minimize the amount of residual forest and prevent conversions to mixedwoods or hardwoods in all harvest blocks (e.g., to the extent possible, residual forest will be associated only with AOC prescriptions or CROs (Conditions on regular operations); see Sections 3.2 of the stand and site guide (OMNR 2010) for further information on stand pattern, composition and structure)*

Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales

> *Section 3.2.2.1 page 14-23:*
> *Residual forest is a forested patch that generally functions more as habitat for wildlife that inhabit older forest than as habitat for wildlife that inhabit younger forest. Refer to Table 3.2b in the Guide for the quantifiable definition of residual forest that can be used to determine if an existing stand, or the result of a planned harvest, can be considered residual.*

4. Guiding Principles

Guiding principles when dealing with market related utilizations issues:

4.1 Forest sustainability must be paramount in all considerations. Strategies developed to deal with low market issues will adhere to all relevant MNRF manuals, regulations and guidelines as well as professional standards of practice.

4.2 Practices must neither impede nor compromise the silviculture or habitat objectives described in the forest management plan. The utilization direction outlined in this document is intended to provide the necessary steps to ensure successful regeneration of target species through the control of residual stand composition and structure.

4.3 All stands harvested under this strategy are expected to achieve the specified silviculture objective; failure to meet renewal standards will require remedial silviculture treatments. It is incumbent on the forest manager to enact mitigation measures to ensure the future forest condition will regenerate according to the Silviculture Ground Rule. Therefore, the renewal program and associated charges need to reflect the implementation of this strategy at the management unit level.

4.4 SFLs and the MNRF will work collaboratively to deliver the best possible outcomes through knowledge sharing, learning, fairness and accountability.

4.5 Adaptive management acknowledges the uncertainty in forest management outcomes and creates management plans that allow for learning while managing. Innovation and new approaches to managing stands with unmarketable fibre left on site will be encouraged through the establishment of silvicultural trials and their subsequent monitoring and reporting of outcomes and effectiveness.

4.6 The MNRF and Sustainable Forest Licence (SFL) holders are responsible for following the laws, approved plans and operational practices. The MNRF ensures that forest operations conducted on Crown land conform to government standards, guidelines and rules and confirms action is taken to correct negative impacts to the forest should they occur.

4.7 Practices that will increase the recovery of marketable products and reduce the production of non-marketable forest products should be developed.

4.8 Product merchandizing decisions are driven by forest product market conditions prior to or at the time of harvest and should consider both local and regional market conditions as well as valued-added opportunities by species and forest product.

4.9 Forest managers should investigate the potential for operating previously harvested areas for the unutilized fibre before operating new, untouched blocks, with similar fibre, as a means of promoting recovery and meeting Forest Management Plan objectives, on partially merchandized areas.

4.10 This strategy does not prevent the continued search for permanent markets or users of current merchantable yet unmarketable timber. The MNRF and Forest Industry are partners in the effort to sustainably use the Province's available wood supply.

5. Implementation

Upon approval of this strategy it will replace the 1999 *Towards Resolving Utilization Issues Final Report and the* 2008 and 2013 *Northeast Region Operations Guide for Marketability Issues* documents. This strategy will be included in all forest management plans currently under preparation either in an appendix or implementation toolkit. It will be referenced in the FMP text as per B-22 section 4.3.6 and in the Annual Work Schedule (AWS) text as per D-7 section 3.2. of the Forest Management Planning Manual (FMPM). The Annual Report (AR) will discuss progress towards utilization of volume and implications to wood supply as per page E-4 section 2.2.1 of the FMPM.

All forest operation prescriptions undertaken using this strategy must have an appropriate Silviculture Ground Rule (SGR) that addresses the conditions specific to utilization. An existing SGR may be used where appropriate; however, an administrative amendment may be required to incorporate a new SGR that addresses the utilization challenges (e.g., heavy mechanical site preparation as a means of slash management, partial harvesting with underplanting of conifer species, etc.)

If the planning team identifies that current plan production is too far progressed, or the forest management plan has been recently approved, it is recommended that the strategy will be included through an administrative amendment. It is anticipated that all forest management plans will seek the most expedient and cost-effective way to immediately include this strategy into their forest management plan.

In some instances, prior to implementing this Strategy, a determination of markets and risk assessment of proposed treatment solutions documentation package will be submitted to the

District Manager. Upon approval of the supporting documentation, areas to be treated under this strategy must be clearly identified as 'low market areas' at a Forest Unit (FU) and/or harvest block level in the AWS and Annual Report for tracking (i.e., throughout text, tables and geodatabases) and to enable MNRF to consolidate the information annually to be presented to the forest industry and MNRF managers. The AWS will also include this text:

"Should domestic markets, or other circumstances relevant to the local Utilization Strategy change during the term, this Strategy, or blocks authorized under it, may be cancelled or amended through written notification from the District Manager."

It is expected that discussions between the MNRF District Manager and the SFL or forest manager will occur prior to a written notification being issued. SFL and MNRF staff are encouraged to conduct joint site visits before, during and after operations where feasible and/or time allows. The aim is to ensure that joint understanding, collaboration and consensus is developed. It is further expected that calibration of operations will be required during implementation and these joint visits will ensure understanding of acceptable levels and desired outcomes. The goal is for collaboration between all parties to create positive results.

6. Strategy Decision-Making

The following section outlines the process for Strategy implementation

6.1 Determination of Market Demand for Species and Products

Determining the local presence or absence of a market for wood fibre for various species and products is a prerequisite to the use of this Strategy. Consistent direction for both MNRF and industry forest managers, outlining the requirements to prove the absence of markets for a species or product type is necessary to make decisions across the region on strategy implementation. The forest industry licensee is responsible for seeking market opportunities for their licence and or management unit. The MNRF may assist the forest licensee/forest management company in identifying potential markets to utilize unmarketable species, however, it is the responsibility of the forest licensee to demonstrate that limited markets exist.

In some cases, the lack of markets for a species or product is a long-standing and well-known concern. When there is agreement between the SFL manager and District Manager that this is a systemic and long-term market deficiency it is documented in the FMP, as well as treatment solutions and no further effort to prove lack of markets is required. It is recognized that under utilization of the Available Harvest Area (AHA) could potentially impact the future forest condition and desired forest benefits. The extent and implications should be evaluated through scoping runs during the preparation of the Long-Term Management Direction. This documentation should form part of the Risk Assessment analysis of the LTMD as required under the 2017 FMPM. The approach recommended by this strategy is detailed in Appendix 2 - *Modeling Low Markets in the Development of the Proposed LTMD*.

When unexpected low-market conditions arise during the implementation of an FMP, sufficient evidence of wood market limitations must be submitted in writing by the SFL manager and/or licensee to the district manager for annual review and approval. Supporting

rationale should demonstrate that a lack of markets for a species/product justifies the implementation of measures outlined in this Strategy. Proving lack of markets for fiber can be a time-consuming and difficult exercise. The four requirements below should form the basis of the supporting rationale to maximize District review efforts. Bullets indicate suggested contents to meet the requirement.

1. Species and product quality of the unmarketable fibre
    - the forest unit(s) affected by market conditions
    - the block locations in the AWS
2. Investigation of markets
    - Provide a list of mills within a reasonable market distance that have been contacted to source the unutilized fibre;
    - Any advertisements relating to the availability of fibre
    - Opportunities to conduct product trials within company operations
    - Supporting evidence showing the economics of wood flow
3. Supporting information from Forest Industry Division (FID)
    - Management Unit Available Wood Report
    - Information on markets
    - Implications to any affected wood supply agreements and or commitments
    - Wood measurement implications
4. Description of social/economic impacts as well as potential impacts on the long-term management direction.
    - Discuss the implications of not selling the fibre

At the discretion of the district manager, insufficient evidence may prevent a licensee from moving ahead with the implementation of this strategy.

6.2 Risk Evaluation

Solutions derived to deal with market challenges need to be properly assessed to determine the level of associated risk. The Silviculture Guide serves as a good first step in this process, whereby planning requirements for high probability of success, low probability of success and not recommended treatments, methods or systems are outlined.

The risk ranking procedure is as follows and is simplified in Table 1:

6.2.1 Low Risk

- Application of harvesting or silviculture treatments that have a demonstrated history of success (i.e., successful achievement of regeneration standards) on the management unit. Treatments previously identified through silviculture assessments and submitted as part of the annual reporting process.
- Treatments designated as having a high probability of achieving the future forest objective given the site characteristics, current forest condition, and operational realities, consistent with the Silvicultural Guide.
- Low risk treatments are outlined in the FMP.

6.2.2 Medium Risk

- Treatments categorized in the silviculture guide as having a low probability of success or not recommended and have been previously implemented through the means of exceptions monitoring or silvicultural trials. Monitoring data for these treatments must show a demonstrated history of success (i.e., achievement of regeneration standards outlined in the SGR) on the management unit.
- A new treatment for a management unit, but there are known successes on other management units in the region. Sufficient silviculture assessment data is required to show success.
- Previously applied treatments will be assessed as to whether to continue with these treatments

6.2.3 High Risk

- Treatments that have a demonstrated history of failure as documented in previously reported silviculture assessments;
- Treatment or method is absent from the Silviculture Guide;
- High risk treatments must be pre-approved by the MNRF as beneficial to the body of knowledge and enhancing adaptive management;
- High risk treatments must be designated as 'trial areas' and will follow the requirements for such, outlined in section 6.2.2 of the Silviculture Guide (e.g., limited in size and occurrence, project plan required, etc.)

Table 1. Risk Assessment for Decision Making

	Low Risk	Medium Risk	High Risk
Treatment in Silviculture Guide	✓		
Experience with Treatment Success	✓	✓	
Requires Early Monitoring (M) or Trial Establishment (T)		M	T

7. Operational Solutions & Best Practices

This strategy outlines Best Management Practices (BMPs) that may be used by forest practitioners to help address local utilization issues. The practices described in this section and the decision chart tool in Appendix 3 serve as examples for consideration. Forest Managers and MNRF Districts will work together to determine the appropriate operational solutions. These BMPs have been successfully implemented in locations within the Northeast Region or from recent, applied science addressing utilization challenges. They fit in two categories a) avoidance of areas where excessive fibre will be deferred and b) mitigation of utilization issues through harvest and silviculture strategies.

7.1 Considerations for the Clearcut Silviculture System.

7.1.1 Avoidance Best Management Practices

Where possible, all other options and opportunities should be exhausted to address utilization issues- prior to operating in a harvest area that has high components of unmarketable fiber. This section describes alternatives that can be explored. These alternatives are not suitable in all cases (e.g. a deferral could cause a stand to degrade further and making future management even more difficult). Professional and experienced local judgement is paramount in deciding the best paths to proceed.

7.1.1.2 Deferrals

When scheduling areas for harvesting consideration of the component of unmarketable fibre should be clearly understood. As a guide, if a significant amount of the available volume of a stand cannot be utilized due to markets, a decision to defer from harvest should be seriously considered. Inoperable stands, due to high content of unmarketable fibre, should be delineated and excluded from scheduling.

7.1.1.3 Block Creation, Selection and Stratification

Block boundaries should be identified to exclude areas where components of unmarketable fiber exist. This may allow operations to proceed without the need of other components of this strategy. Depending on the stage of planning for each FMU, this delineation can be created during FMP and/or AWS preparation.

7.1.1.4 Age Class Selection

Rotation age selection during the forest management plan development should consider available markets for forest products. Selecting age-classes that maximize merchantable product volumes and yield should be encouraged (i.e. veneer content in relation to rotation age).

7.1.2 Mitigation Best Management Practices

Mitigation measures should seek to:

- Create a healthy forest that satisfies the requirements of the identified desired forest and resulting benefits such as timber production, wildlife habitat, the conservation of biological diversity, and aesthetics.
- To ensure a continuous and predictable supply of high-quality sawlogs and veneer bolts by maintaining and enhancing timber quality and yield
- To maintain or improve the forest genetic base that will be used as a seed source for the future forest.

7.1.2.1 Encourage Fuelwood Use

For harvest blocks that are expected to have personal or commercial fuelwood interest, (near towns, good access), unmarketable fibre should be made available for use as fuelwood. Information products associated with all areas scheduled for harvest will identify this specific block as a location where fuelwood can be obtained. To assist in the utilization of fuelwood from these areas; factors such as; timing of harvest, wood species, logging equipment used in harvest and road accessibility and piling at roadside to avoid advanced regeneration disturbance can be managed to promote opportunities.

7.1.2.2. Second Pass

Areas identified as first pass harvest require a second pass for the treatment to be considered complete. The second pass harvest should be carried out within three years of the initial harvest, when possible. This time period is to allow operational/seasonal flexibility. Second pass harvesting to complete these areas should take precedence over approving new harvest areas once markets are available. A secondary treatment option should also be identified should the second pass harvest fail to occur; this may include retaining the partial harvest residual stand structure with regeneration to the appropriate species

7.1.2.3 Stand Improvement Activities

Efforts should be made to reduce the component of unmarketable fiber to improve the future forest condition. These activities can be wide-ranging from felling trees to remove undesirable seed sources; purposely destroying (e.g. trampling with skidder traffic) regeneration of undesirable species (e.g. excessive Balsam Fir); leaving quality desired species standing as a seed source and many other activities.

7.1.2.4 Coarse Woody Debris- Logging Slash

Unmarketable fibre may be left on site to contribute to coarse woody debris objectives at the stand level. Coarse woody debris on harvest sites requires management at the local, site level, by qualified forest practitioners. Depending on the amount and size of accumulated tops, slash and pulpwood left on site to decompose naturally, there may be obstructions to wildlife movement and forest renewal may need to be mitigated. For example, efforts to break up and redistribute the fiber may be necessary and site preparation may be necessary to ensure adequate planting spots and seedbed areas.

7.1.2.5 Residual Management

In some cases, unmarketable fibre in a scheduled block may not be uniformly distributed across the harvest area. In these cases, it may be possible to leave clumps of unmarketable trees, at a sub-stand level and proceed with operations, without use of this strategy in the remainder of the block. MNRF and forest industry are encouraged to work together to identify potential bypass areas when possible. Decisions should consider the component of immature or undersize stems, concentration of cull contained and tangential benefits to biological diversity values, landscape pattern targets, minimize windthrow, and other forest users.

7.1.2.6 Management Options for Boreal Mixedwood Forests

Market shortfalls for poplar and birch species and/or product types can present challenges for boreal mixedwood management. A recent study investigating acceptable understory light levels as a result of increased tree retention provides insight for potential management options.

The study outlines maximum allowable retention levels for clearcut versus partial harvesting systems through the use of models described by Parker and Sharma (2018). The models developed through this research can be applied to stands where the number of residual trees left on site will be higher than expected. Meeting silviculture objectives as described in the guides remains a requirement; the models can be used as a tool to estimate a range of basal area, stand density and stand density index that will likely result in the successful regeneration of mixedwood species under the canopy of the residual trees.

7.2 Considerations for uniform shelterwood and selection silviculture systems

Shelterwood harvests are implemented through a series of stages, with the predominant focus today on two-cut and three-cut harvest cycles, whereby the regeneration cut is the first stage of management. In addition to creating the appropriate crown closure and light levels for regenerating crop trees, the intent of a regeneration cut is to thin from below, retaining the larger, higher quality trees while removing the smaller diameter trees that have been suppressed over time as well as stems of undesirable species. As a result, a significant proportion of the fibre removed from this type of harvest is typically of low quality. Shelterwood harvests scheduled during times of market shortages for low-end fibre should consider the following:

- If >70% of the available volume of a harvest cannot be marketed, defer from harvest. Ideally, deferred stands will retain their value until the next stand entry. Should it be determined that these stands will diminish in value prior to the next scheduled stand entry, consider harvesting with follow-up silviculture treatments.
- First and final removal cuts should be given higher priority for harvest when markets for low-end fibre are lacking. These removal cuts yield higher volumes of marketable sawlogs as most of the low-quality stems and undesirable species have been harvested in previous stages of management. During long-term downturns in market conditions, forest practitioners may need to balance the occurrence of regeneration cuts with final removal cuts.
- White pine and red oak shelterwood regeneration cuts and tolerant hardwood single tree or group selection cuts should maximize the felling of all eligible stems (i.e., aligning with principles from the Tree Marking Guide) regardless of market shortages for species or products. Apply silviculture treatments (e.g., mechanical site preparation or stand improvement) where appropriate to achieve objectives. Retaining the appropriate crown closure and creating a suitable seed bed is critical to ensure the establishment of regeneration at this stage of management.
- Tolerant hardwood stands typically yield a higher proportion of pulp vs. sawlogs. A market for hardwood pulp and fuelwood may be necessary to make these stands viable for harvest. In the absence of markets for pulp and/or fuelwood, tolerant hardwood stands should be reviewed on a stand-level basis.

8. Risk Based Monitoring and Reporting

The forest industry and MNRF are jointly responsible for assigning a level of risk associated with identified blocks impacted by low market challenges (see section 6.2 Risk-Evaluation). This decision will guide future monitoring and reporting requirements. It is recognized that market challenges for select species and products are persistent across the North East Region. In specific situations with market challenges, harvest blocks will be evaluated and assessed for risk on a case by case basis to determine the appropriate approach and to set the stage for success when implementing this strategy.

In addition to the silviculture assessment results reported, forest industry will be required to include documentation of survey methodology (i.e., documented in a manner that it can be replicated), provide a discussion of the treatment results including all contributing circumstances and make recommendations on modifying, improving or not proceeding further with identified treatments.

Silvicultural treatments carried out under this strategy are expected to achieve the silvicultural objective and subsequent regeneration standards regardless of the level of assigned risk. This is unlike the new provincial silviculture program whereby forest-level reconciliation of the regeneration assessment results is acceptable. Silvicultural assessment results indicating that the regeneration standards have not been met will require the forest industry to follow up with subsequent silviculture treatments. Failure to follow through with treatments, may result in the MNRF prohibiting the use of this strategy on the management unit. This decision will be considered under the authority of the District Manager.

8.1 Low Risk Treatments

Low risk treatments can be monitored using the existing silviculture assessment program but will be reported separately in the annual report.

8.2 Medium Risk Treatments

Medium risk treatments will require early monitoring and reporting. The purpose of early monitoring is as follows:

- To identify the need for early silviculture intervention and additional treatments should the results indicate that the regeneration standards in the SGR have not been met.
- To provide assurance that the treatment has a high probability of success in achieving the silviculture objective (i.e., target species composition and target site occupancy as defined in the regeneration standards of the SGR).

Monitoring will be done a maximum of three years post-harvest for stands regenerating naturally or a maximum of one year following the completion of silviculture treatments. Areas treated under the shelterwood silviculture system may be required to carry out early monitoring following the regeneration/seed cut, according to the parameters listed above. If monitoring indicates that the silviculture objective is unlikely to be achieved subsequent silviculture interventions may be required

The assessment method for early monitoring can include ground-based assessment plots, aerial ocular surveys and satellite imagery as examples. Monitoring will be developed jointly between forest industry and the MNRF to focus on the nature of the risk (e.g. stocking in relation to retained shade etc.).

8.3 High Risk Treatments

Monitoring required for high risk treatments will be required to carry out a silvicultural trial area consistent with the requirements outlined in the Silviculture Guide.

9. Annual MNRF/SFL Update Meeting

Annually, prior to the upcoming operating year, the SFL Managers and MNRF will meet to review and discuss the status of the strategy's implementation on the forest management unit. Particularly with respect to the Risk Assessment: they will consider any annual recommendations provided by the Regional Forest Industry/MNRF team, as they proceed with their risk assignment. Further to this, areas that have been identified as low-market areas will be reconciled at the end of year to determine the extent of the Strategy's implementation.

During this review period, treatments that have been previously designated as high risk that continue to show successful achievement of the silviculture objective and renewal standards are eligible to be downgraded to low risk, thereby eliminating the requirement for early monitoring. However, low probability and not recommended treatments identified in the Silviculture Guide will remain as such and associated monitoring requirements will be carried out accordingly. Treatments of higher uncertainty that continue to show successful achievement of the silviculture objective can be brought forward during the next review of the Silviculture Guide. For this reason, it is important that the regeneration assessment methodology provides sufficient rigour to support a potential change in treatment designation.

The annual review should include a discussion on the ability of the strategy to meet marketability challenges, silviculture objectives, the current state of market conditions, innovative practices employed and the effectiveness of the reporting and monitoring programs.

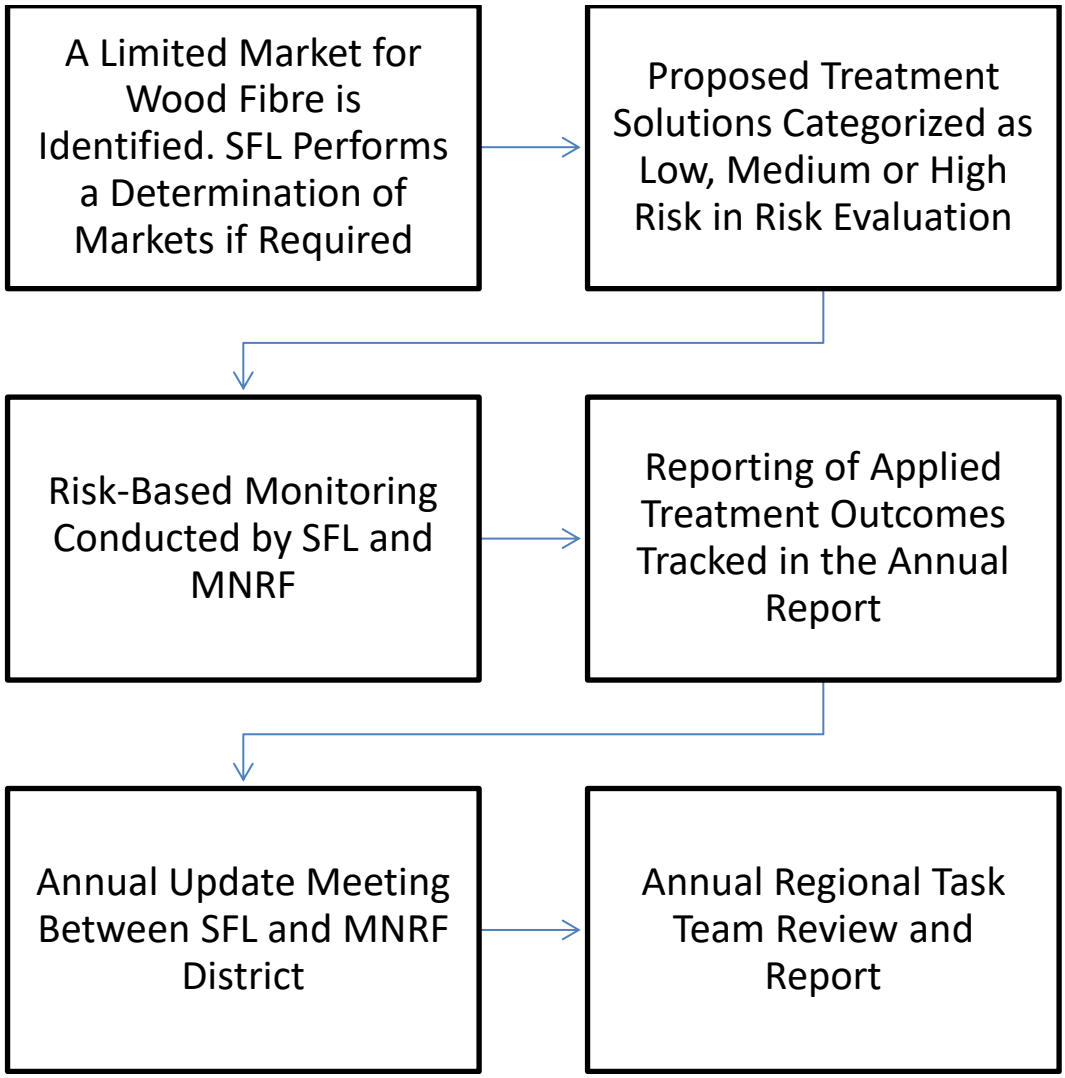
10. Task Team Annual Review and Reporting

The low market area reporting components of the annual reports will be extracted, consolidated and analyzed each year. This information will be used by a regional MNRF/Forest Industry task team at their annual meeting. The meeting will review the results of the monitoring and reporting and will examine successes and challenges of implementing this Strategy including: trends in frequency and location of low market blocks, monitoring, innovation, adaptive improvement and tracking new approaches to managing stands for the purpose of making recommendations to District Managers, Forest Managers and/or to the Regional Director. The task team will document the findings from their review for distribution to Forest Managers and NER MNRF District Managers.

This review and reporting can generate the following outcomes:

1) Recommendations to District Managers and Forest Managers regarding changes to the risk assessment for the region or for a specific management unit. These recommendations will be considered by the District Managers and the appropriate SFL forest manager when assigning risk determination.
2) Recommendations to the Regional Director on strategy changes/improvements amendments that should be considered. (e.g. new/changed BMPs).
3) Recommendations for research project funding.
4) Influence future forest management practices in Ontario through the application of adaptive management.

Appendix 1 - Strategy Procedure Summary Flowchart



Appendix 2 – Modeling Low Markets in the Development of the Proposed LTMD

The achievement of management objectives in the proposed Long-Term Management Direction (LTMD) assumes full utilization of all the Available Harvest Area (AHA) associated with the model harvest recipe: [MU, FU, AC, RI], (i.e. Management Unit-Forest Unit-Age Class-Renewal Intensity) by the receiving Mills. Therefore, underutilization of the AHA could potentially impact the future forest condition and desired forest benefits. Low markets for species group or product group is recognized as one of the potential risks that could influence the implementation of the proposed LTMD.

This Strategy recommends as part of risk assessment, that a utilization analyses be carried out during the development of the proposed LTMD. The investigation of markets will be completed in a wood supply analysis tool as harvest operations and the results evaluated to understand its implications on the achievement of management objectives.

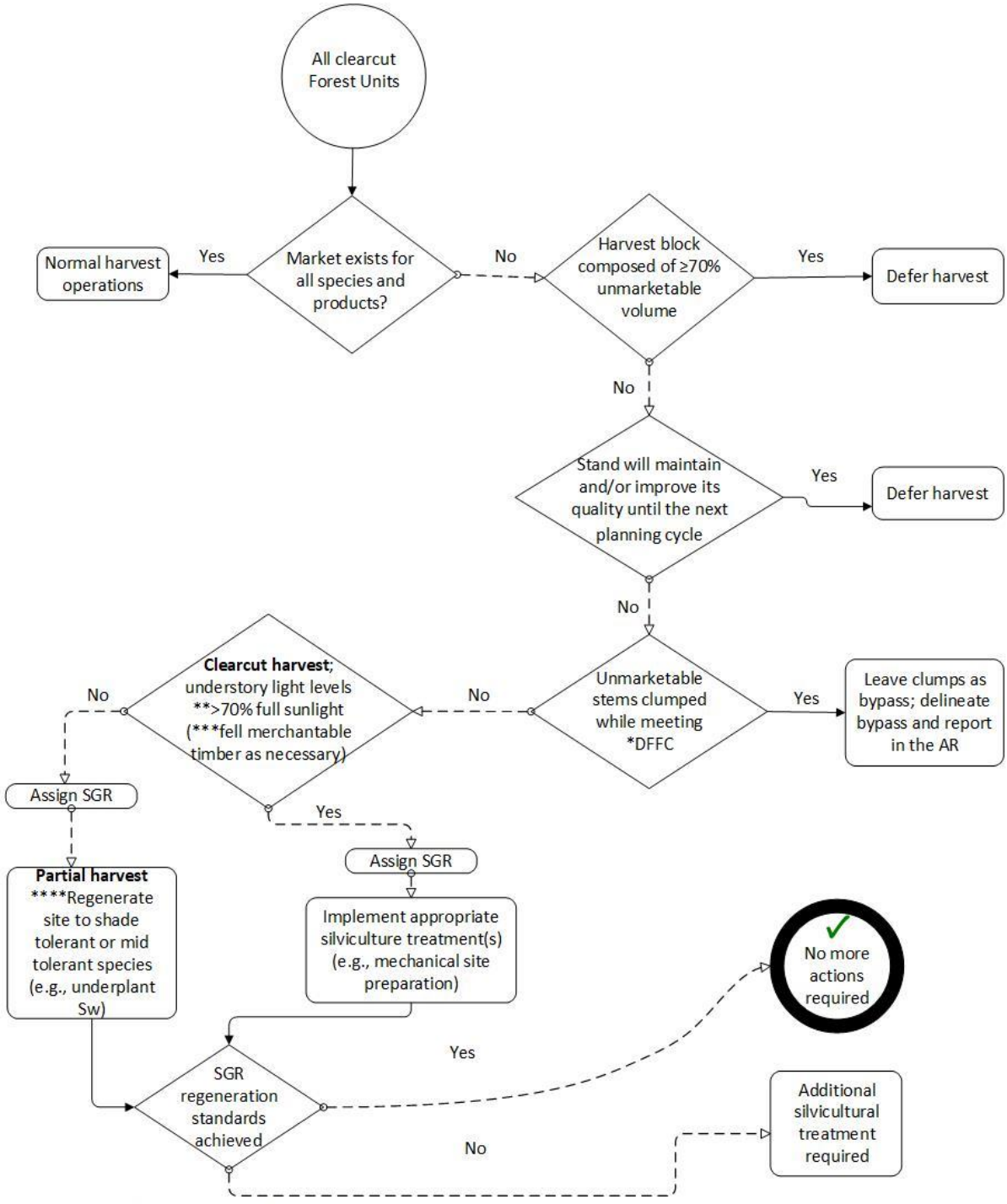
Planning teams are advised to investigate through scoping analysis, the potential impacts of not fully harvesting the AHA, as prescribed by the proposed LTMD. This is described in Part A Section 1.2.5.2 of the FMPM under Risk Assessment. Therefore, an assessment of the underutilized Hardwood/Conifers stands must be made to estimate the potential shortfall of harvest by forest unit. One method could include an analysis of historical wood utilization. The results of the analysis could be used to net down how much of the AHA will be harvested, and that estimate could be used to calibrate the amount and type of stands (or forest units) that would actually be harvested. That estimate would be used to create a scenario to evaluate the effect on the desired future forest condition, and achievement of FMP objectives.

Where utilization records are not readily available, planning teams are encouraged to conduct a series of investigations to determine a market threshold (percent net down) that supports objective achievement. The model results are then evaluated to understand the implications on the achievement of the management objectives. The following steps are recommended for consideration when preparing scenarios to run in a decision support keeping in mind that other possible scoping scenarios to determine the effects of under harvesting the AHA can be developed by planning teams with the assistance of Regional Analysts.

a) Simulate wood utilization or market conditions as harvest operations recipe [MU, FU, AC, RI]
b) Use historical utilization records as model input of % net-down of AHA
c) Perform the model verification run, evaluate and document the effects of the model results on the management objectives.

The result of these investigations will be an assessment of the risks associated with recent wood utilization and an evaluation of the potential implications on the achievement of management objectives associated with the LTMD. This will help to inform the planning team, and ultimately the Regional Director, as to potential risks associated with the proposed LTMD. The Regional Director can then choose to endorse the LTMD or require modifications to the LTMD prior to endorsement.

Appendix 3 - Deferral and Operational Decision Chart for the Clearcut Silviculture System



* Desired future forest condition (DFFC)

** Regeneration established in >70% full sunlight is included in the definition of the clearcut silviculture system as defined in the Silviculture Guide.

*** Merchantable timber as defined by the Scaling Manual. It is permissible to cut, fell and leave unmarketable fibre on site, provided appropriate silviculture treatments are carried out.

**** Partial harvest of a clearcut block, resulting in <70% full sunlight.

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(t) Documentation of Moose Emphasis Areas (MEAs)

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Appendix 1. Parameter Results of 19 Proposed Moose Emphasis Area Candidate 15

Preamble

After much deliberation, the Planning Team ultimately decided to incorporate designated Moose Emphasis Areas (MEAs) into this forest management plan primarily based on updated moose population data provided by the MNRF, which indicated current population estimates were below the objective levels for wildlife management units 21b and 22. Nineteen potential candidate areas were presented to the public during the review of proposed operations and four of the most suitable candidate areas were subsequently finalized into the Nagagami 2021-2031 draft Forest Management Plan. The main objective was to select large landscape areas that can support source populations for moose by meeting their various habitat components within the area. The Planning Teams main focus was to select MEAs that were best able to maintain or enhance a balance of current habitat conditions for moose (i.e. quality and abundance of browse and shelter) through operational planning of strategically placed residual cover and looking for opportunities to limit access by 4x4 vehicles. Habitat is maintained by ensuring a diversity of age classes and species of vegetation that provide habitat for moose. In addition, early and late winter concentration areas, aquatic feeding areas, mineral licks, and calving sites have also been examined.

1. Introduction

The Ministry of Natural Resources and Forestry (MNRF) is responsible for the protection and management of Ontario's cervid species as per the Cervid Ecological Framework (OMNR, 2009). Moose management is focused on maintaining sustainable populations through population and habitat management. Ontario's moose program is focused on ensuring sustainable moose populations and the ecosystems on which they rely, for the continuous provision of ecological, cultural, economic and social benefits for the people of Ontario.

Moose habitat is managed at the course level throughout the Nagagami Forest using Landscape Guide indicators. The indicators that most closely align with moose habitat are young, mature and old forest in terms of structure, composition and pattern. The intent of the coarse filter is to maintain biodiversity at the landscape level with opportunities for enhancement. Moose are habitat generalists and can use a broad range of forest conditions to meet their needs. In most cases, moving towards the type and distribution of habitats that is expected under natural disturbance patterns will also provide a suitable matrix of habitat for moose.

In some cases, certain aspects of the amount and arrangement of forest may be targeted for management. Large Landscape Patches (LLPs) with targets/objectives specific to Nagagmi Forest can be used to emphasise moose habitat within a specific geographic area. These LLPs (commonly referred to as Moose Emphasis Areas, or MEAs) should be implemented to achieve a specific goal related directly to moose habitat, where it is determined that the current system (i.e. the Forest Management Guide for Boreal Landscapes, MNRF, 2014) of meeting landscape level habitat objectives is insufficient.

As part of planning for the long-term management direction (LTMD) and operational phases of the Nagagami Forest Management Plan, a review of moose habitat on the forest was undertaken.

According to the Forest Management Guide for Boreal Landscapes, LLPs will be identified to meet biodiversity objectives and to allow for the efficient implementation of other guides. The Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (SSG) (OMNR, 2010) states that moose habitat, where appropriate, is to be enhanced in MEAs. MEAs will be strategically located in productive, nutrient-rich areas most likely to achieve a moderate to high density of Moose. The LLPs where Moose habitat management will be emphasized will contain targets for a range of young forest patch sizes for browse and a relatively high proportion managed as mixedwoods/hardwoods and mature conifer for cover.

Within the LLP the MEA will adhere to the following criteria:

i. 5-30% of the forest is browse-producing habitat (generally stands <35 years old and <10 m tall; or stands that have received a selection cut within 10 years or a shelterwood regeneration cut within 20 years);
ii. 15-35% of the forest is mature conifer-dominated forest; and
iii. 20-55% of the forest is hardwood-dominated or mixedwood forest ≥35 years old or ≥10 m tall, or recent partial harvest areas that meet the definition of residual forest.

In addition, road use management strategies for primary, branch and operational roads should consider access provisions. Following completion of forest management activities, efforts will be made to limit future use of the road by 4 x 4 truck using the most practical and cost-effective method(s) available. The method(s) used may include winter road construction and decommissioning methods such as ditching, berming, slash piling and water crossing removal which are listed in the Road Use Management Strategy section of the Supplementary Documentation 6.1 (i) Documentation of the Planning of Roads, and Roads in Areas of Concern and FMP-18. The decommissioning methods are further described in section 6.1 (q) Prescriptions for Harvest, Renewal and Tending, and Conditions on Operations.

There are access restrictions already in place throughout the Nagagami forest and it is imperative that moose habitat is evaluated within these areas to determine if much of the criteria for establishing MEA areas is already being met. Although the land use intent of these areas with current access restrictions is for inaccessibility and isolation for remote tourism industry (est. pre-1930s), it may also serve as a duel purpose in helping to protect the moose population. However, the purpose of implementing MEAs on the landscape is to look for opportunities to improve moose habitat and minimize the pressure of access. Road use management strategies are required to improve and enhance habitat for moose within MEAs, and opportunities to increase road use management strategies should be considered.

Frequency, timing and size of areas to be harvested within each candidate MEA impacts not only industry but other forest users. These were additional considerations looked at in greater detail before any determinations were made with regards to having MEAs on the Nagagami forested landscape.

2. Planning Team Decision Making Process for MEA Consideration

An original suite of 19 potential MEA candidates (Figure 1) were identified during 2 wildlife task team meetings. The criteria used to select the candidates were carrying capacity and areas of relative roadless primary, branch and operational roads (buffering the roads at 500 and 1000 metres). Private land was not included in the selection of MEAs, as it is generally not influenced by forest management. Candidate area boundaries were based mainly on landmark features (i.e. roads, water, private/park boundaries).

The goal is to select MEAs based on a productive forest target area of 10 to 15%. The wildlife task team decided that the area east of Highway 631 is to be considered because adjacent areas are to be managed for primarily for caribou (discontinuous and continuous caribou zones). The total productive land base east of Highway 631 of the Nagagami Forest is 236,113 hectares. Based on the total productive land base the goal was to achieve between 23,600 to 35,400 hectares as MEAs with a size range of at least 2,000 hectares in size but ideally to greater than 10,000 hectares.

Parameters that are used to help inform the decisions are listed in Appendix 1. If implemented, the final selection will include a consideration for a balanced spatial distribution promoting moose habitat connectivity and minimizing monetary impact to harvest operations and contractors. Access restrictions imposed by the Crown Land Use Policy Atlas (CLUPA) will also be considered. There are CLUPA access restrictions overlapping at least some of the candidate MEAs. Access controls in these areas include gates, water crossing removals and berms.

When selecting the final MEAs existing land use policy direction was considered when balancing the objective to improve the opportunities for moose habitat and considerations for access that could pose pressure on habitat quality. Provincial parks and conservation reserves were not excluded from the MEAs. MEAs were not removed from the selection process if they contained a portion of area that was not available for forest management because this area could still contribute to the cover requirements for moose habitat. However, if the majority of the MEA was within a provincial park or conservation reserve this provided rationale for removing the specific MEA from the final list as there would be limited opportunities for moose habitat improvement in those areas.

The habitat requirements of browse, mature conifer, and hardwood dominated or mixedwood were assessed for each candidate MEA at plan start and with 10 years of projected harvest to determine where improvements in moose habitat would likely occur (Appendix 1). Candidate areas that are showing movement towards the objectives for each habitat indicator will be considered high quality MEAs. The desirable level for browse habitat is moving towards a range of 5-30% of the MEA. The desirable level for cover habitat is that mature conifer dominated areas are moving towards 15-35% and hardwood dominated/mixedwood dominated areas are moving towards 20-55% of the MEA. Standard Forest Unit MEA indicator composition is as follows:

i) Mature Conifer: PR1, PW1, PRW, SB1, PJ1, PJ2, LC1, SF1, SP1
ii) Hardwood dominated/mixedwood: LH1, TH1, PO1, BW1, MW1, MW2.

Forest operations generally improve the amount and arrangement of browse habitat through harvest activities within a management unit. Proposed access and harvest areas were used to determine areas on the land base that most likely would see movement of the habitat indicators in the desirable direction.

The amount of wetland within each MEA was assessed. The wetland component should be within the range of at least 5 to 10% of the MEA. There were no instances on the Nagagami Forest where this was a limiting factor (Appendix 1).

The amount of Winter Cover was also assessed for each MEA. The projected Winter Cover amount should be greater than 15% across the MEA. There were no instances on the Nagagami Forest where Winter Cover was a limiting factor (Appendix 1). The sum of the following 4 queries were used to determine the extent of the winter cover component in the MEAs. For these queries, CCC is the % “PW" + "PJ" + "PR" + "SB" + "CE" + "HE" + "BF" + "SW" multiplied by the canopy closure.

i) High value species, high conifer canopy closure (HVHC)
(("CE" + "HE" + "BF" + "SW") >= ("PW" + "PJ" + "PR" + "SB")) AND "CCC" >= 60 AND "HT" >= 10
ii) High value species, low conifer canopy closure (HVLC)
(("CE" + "HE" + "BF" + "SW") >= ("PW" + "PJ" + "PR" + "SB")) AND "CCC" >= 30 AND "CCC" < 60 AND "HT" >= 10
iii) Low value species, high conifer canopy closure (LVHC)
(("PW" + "PJ" + "PR" + "SB") > ("CE" + "HE" + "BF" + "SW")) AND "CCC" >= 60 AND "HT" >= 10
iv) Low value species, low conifer canopy closure (LVLC)
(("PW" + "PJ" + "PR" + "SB") > ("CE" + "HE" + "BF" + "SW")) AND "CCC" >= 30 AND "CCC" < 60 AND "HT" >= 10

Local knowledge will also be taken into consideration when determining the final MEAs. Input will be sought from the public at the Stage 4 public review. Additionally, the Local Citizens Committee, Planning team and Indigenous Communities will be asked to provide their input and local expertise into the selection of MEAs.

Parameters that were used to inform decisions on reducing the candidate list were MAFAs, wintering areas, CLUPA, Provincial Parks, drivable roads (500 and 1000 m buffer), carrying capacity, winter cover, and the 3 habitat indicators (browse, mature conifer, hardwood/mixedwoods).

After comments are received regarding proposed harvest areas, refinements will be made through operational planning to the projected harvest areas and the selected MEAs habitat indicators will be reconfirmed. A comparison of the presence of habitat at plan start (2021) to after 10 years of projected harvest (2031) will be completed to determine alignment with the habitat objectives. Results of the compiled attributes are found in Appendix 1.

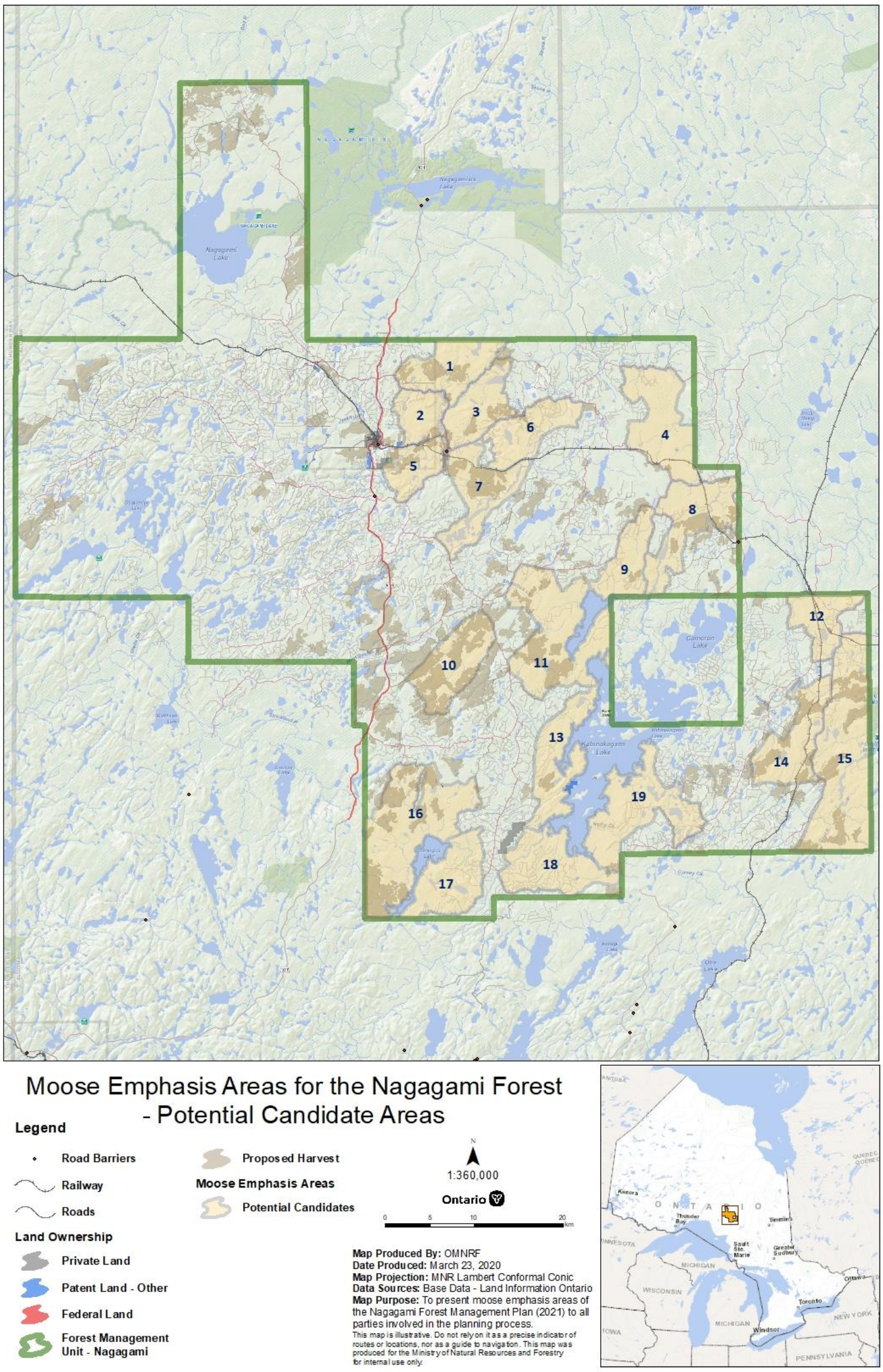


Figure 1. The 19 Proposed Candidate Moose Emphasis Areas on the Nagagami Forest.

3. Quality and Arrangement of Habitat

The amount and distribution of moose habitat in the Nagagami Forest was assessed using a spatial model. The model used to conduct an initial screening for potential habitat deficiencies or opportunities was the Ontario's Landscape tool (OLT) (Elkie et al. 2014). The model is based on Standard Forest Units defined by Holloway et al. (2004). The results can be presented in terms of predicted percent available habitat (within a fixed hexagon, how much habitat is suitable), or in terms of carrying capacity (how many moose the habitat could potentially support). The model does not consider additional factors including roads/access, mortality rates in excess of natural (e.g., road or rail mortality, hunting mortality). The carrying capacity (moose/km^2) is not intended to represent the actual number of moose on the landscape, but rather the capacity of the habitat to support moose populations without consideration of additional management decisions.

Moose habitat is a mosaic balancing several life history components of the habitat that they require such as open young (browsing and foraging), mature conifer (wintering areas), and wetlands for aquatic feeding. Although, moose aquatic feeding areas are generally not features that can be created through forest management activities.

Food (Forage/Browse)

Food is important for growth, reproduction and maintenance during the summer and winter months. Generally, forestry operations create feeding opportunities for moose particularly in the years post-harvest.

The OLT generates an average amount of food (kg/ha) based on ecosite, development stage, stand age, species composition and canopy closure. The growing season (foraging) and dormant season (browsing) results from OLT indicate that the amount is the same as historical levels or within the range of natural variation (Figure 2). This initial assessment using the Base Model Inventory also indicates a good arrangement of forage/browse habitat (Figure 3).

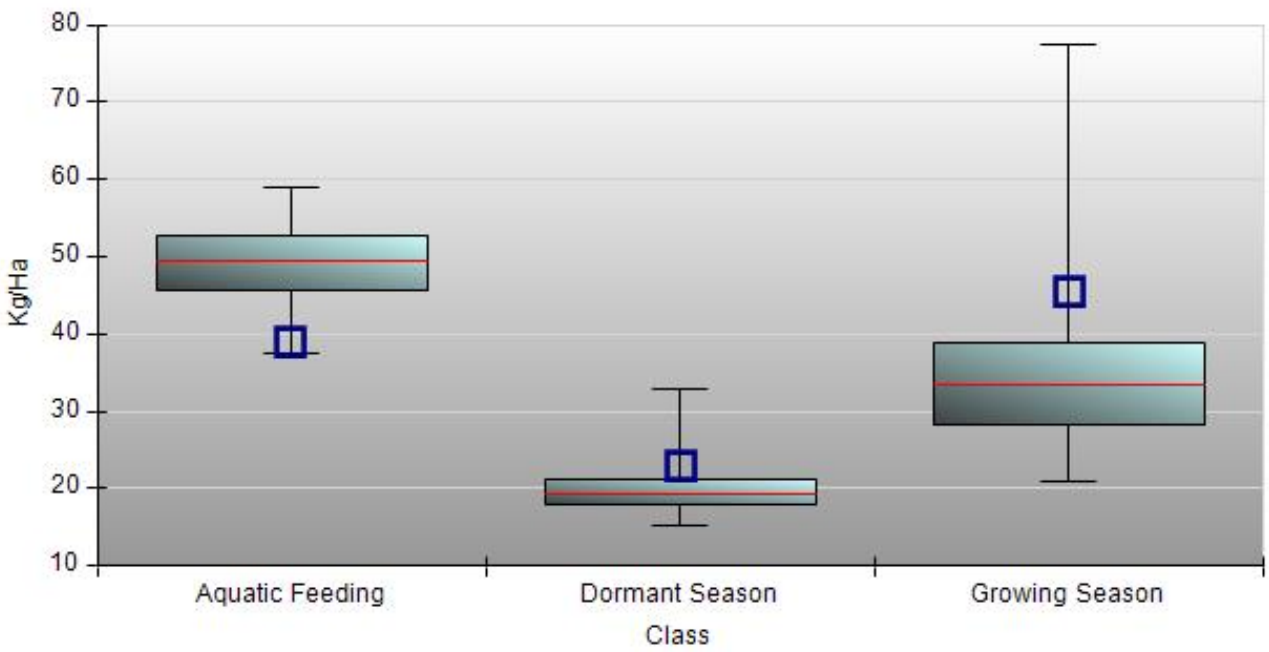


Figure 2. OLT results for amount of food (kg/ha) available for winter (dormant season-browse), summer (growing season-forage) and aquatic feeding areas in the Nagagami Forest. The box and whiskers illustrate the upper and lower limits of the range of simulated natural variation (the box portion is the mean or interquartile historical range). The blue squares represent the current (plan start) forest condition.

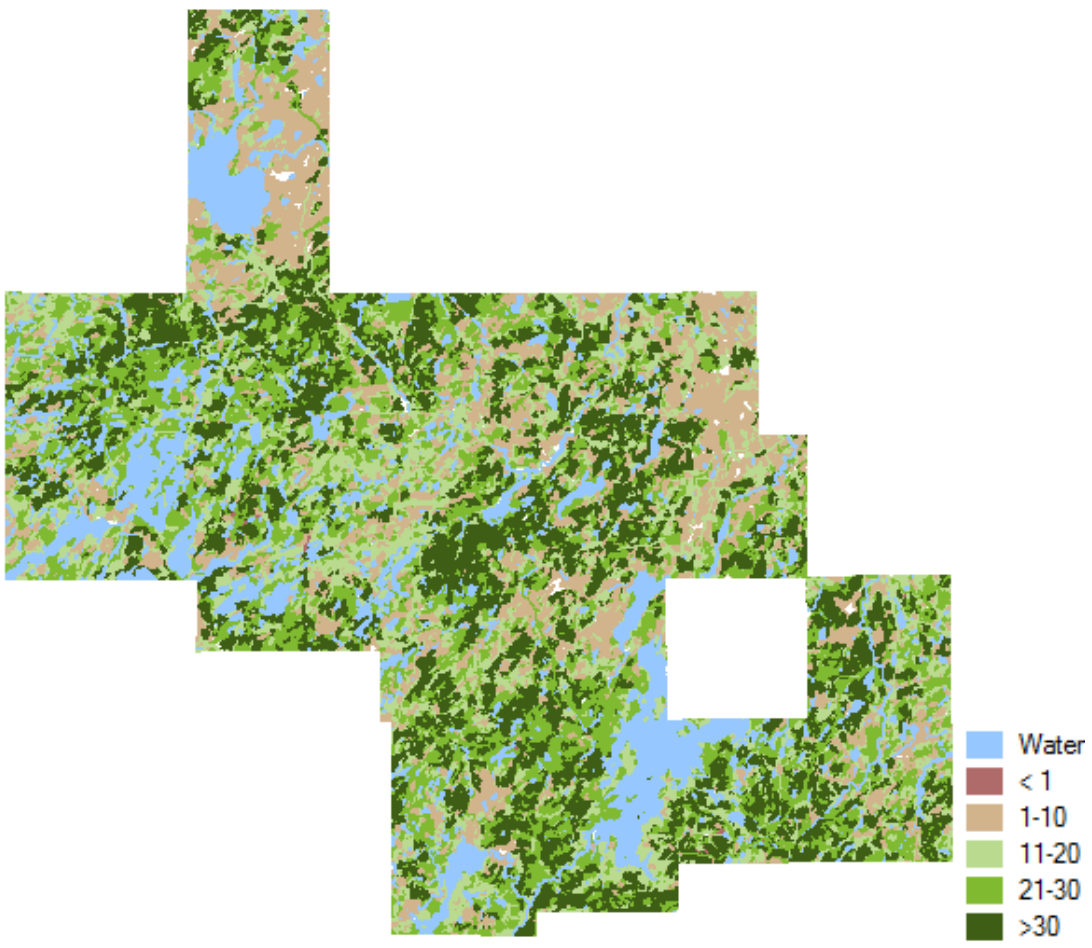


Figure 3. OLT spatial results for current winter (dormant season-browse) in the Nagagami Forest. The increment ranges are based on kg/ha of browse.

Cover

Wintering areas function to intercept snowfall, creating open areas beneath the canopy for ease of movement in high snowfall years. In addition, warm temperatures (> - 5 ^{0}C in the winter; > 15 ^{0}C in the summer), rather than cold temperatures, are thought to be the most stressful to moose and therefore seek cover under the tree canopy (Schwartz and Renecker 1998, Renecker and Schwartz 1998).

The OLT generates the average amount of cover (ha) based on ecosite, stand height, and stocking for Cedar, Hemlock, Balsam Fir, White/Black Spruce and Jack Pine. Indicators are then generated for summer (growing season), late winter (dormant season winter and conifer class) and early winter (dormant season winter). The amount of cover both during the growing and dormant seasons indicate there is lower than mean (interquartile) cover as the predicted historic natural range, however the results indicate that the forest is providing cover within historical ranges (Figure 4). This is further spatially illustrated by focusing on the dormant season cover component (Figure 5).

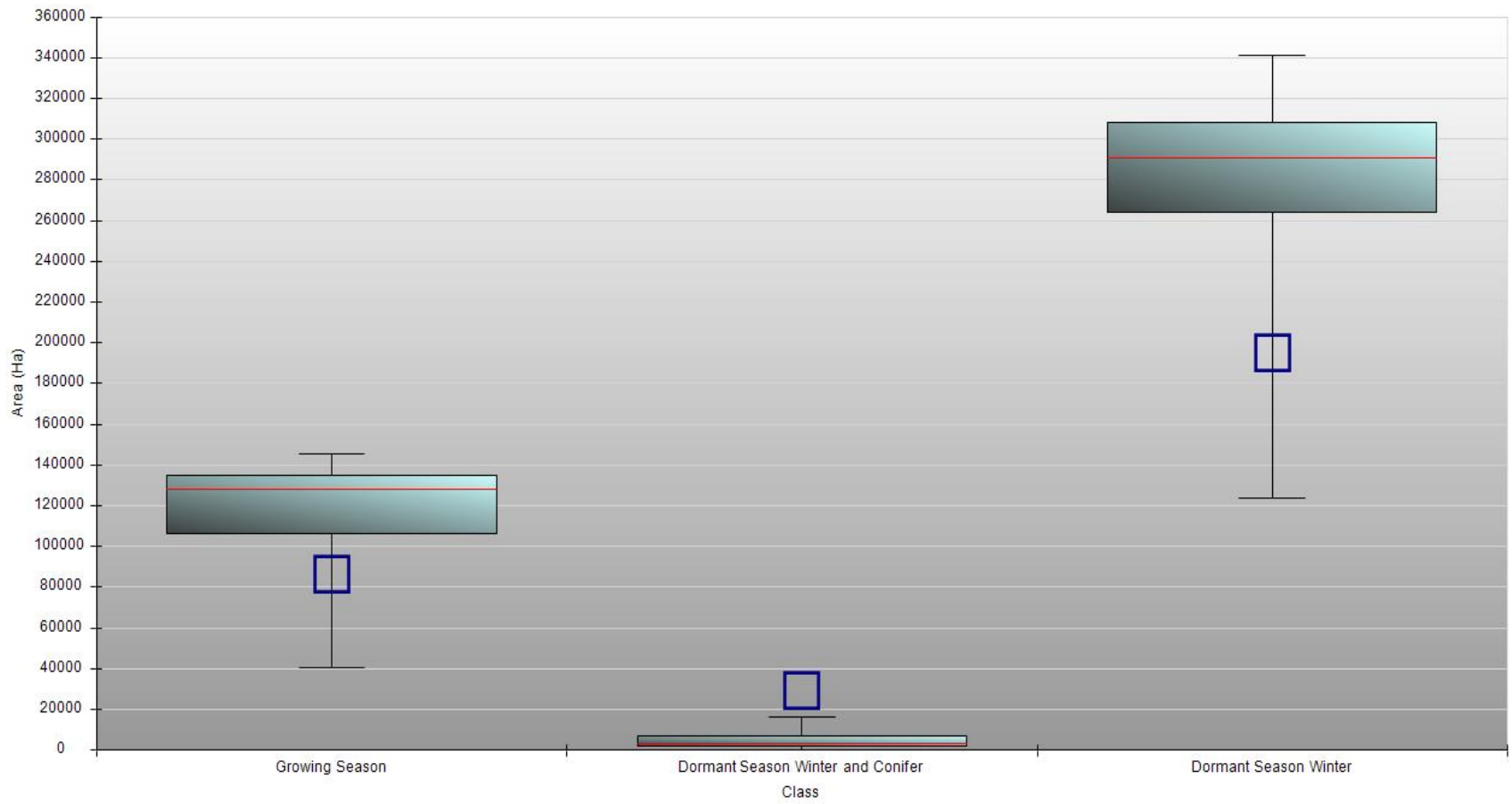


Figure 4. Nagagami Forest OLT results for amount cover available for winter (dormant season) and summer (growing season). Dormant season winter and conifer class is based on Cedar, Hemlock, Balsam Fir, White/Red Pines. Dormant and growing season is based on seral stages (immature, mature and old). The box and whiskers illustrate the upper and lower limits of the range of simulated natural variation (the box portion is the mean or interquartile historical range). The blue squares represent the current (plan start) forest condition.

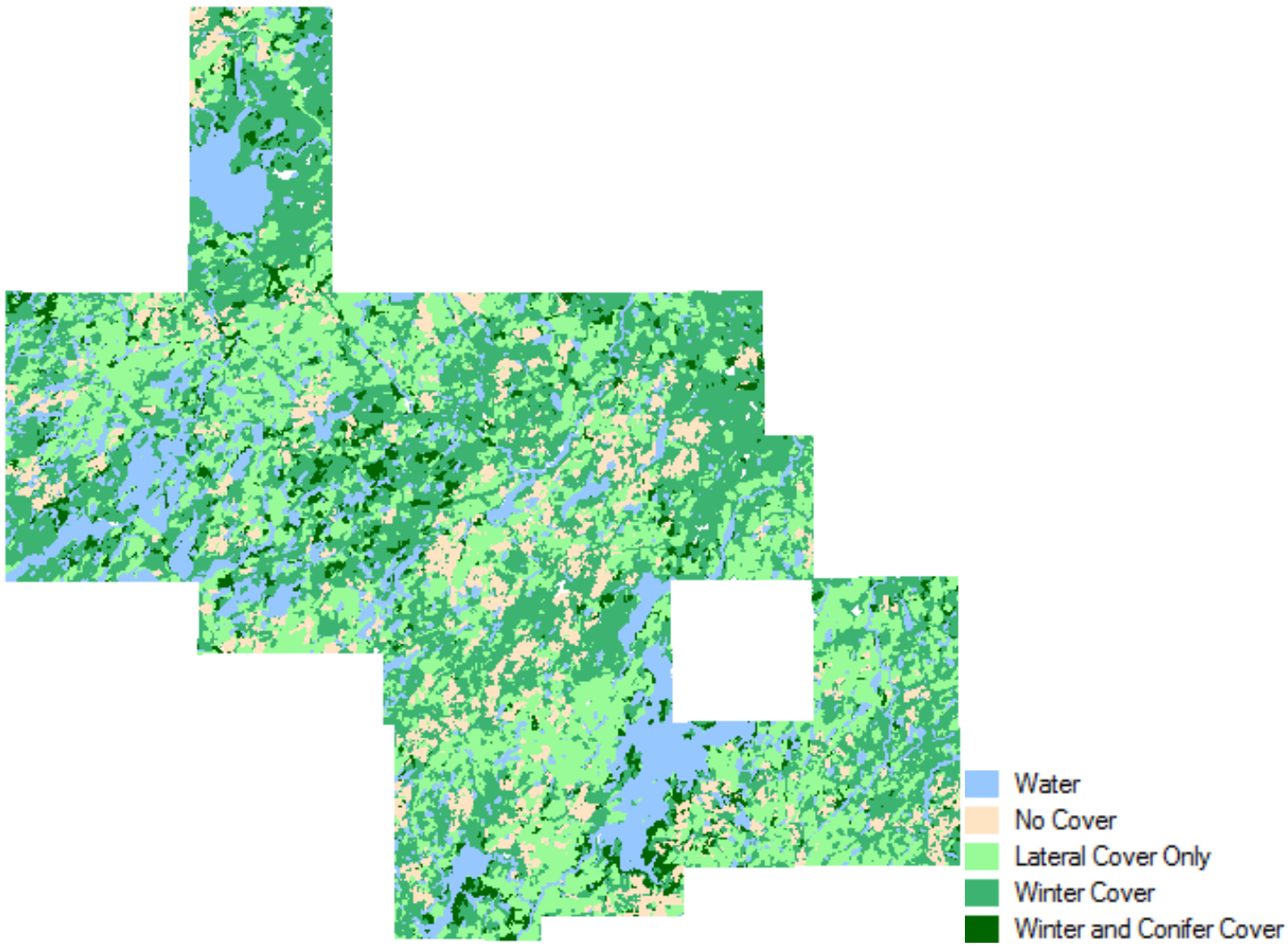


Figure 5. OLT spatial results for current winter (dormant season) cover in the Nagagami Forest.

Carrying Capacity

The OLT can produce results for the estimated number of moose the habitat could support, or in other words carrying capacity, based on the amount of predicted habitat for moose. The OLT model does not consider additional factors such as access and mortality/hunter success rates but is influenced only by the combination of food and cover components during the winter (dormant) and summer (growing). The carrying capacity (moose/km^2) is not intended to represent the actual number of moose on the landscape, but rather the capacity of the habitat to support moose populations without consideration of additional management decisions. The total carrying capacity for the Nagagami Forest is above mean historic conditions and is likely due to the higher browse/forage component (Figure 6). As depicted spatially, the forest can have higher densities of moose in the future if the cover component is increased as mentioned previously (Figure 7).

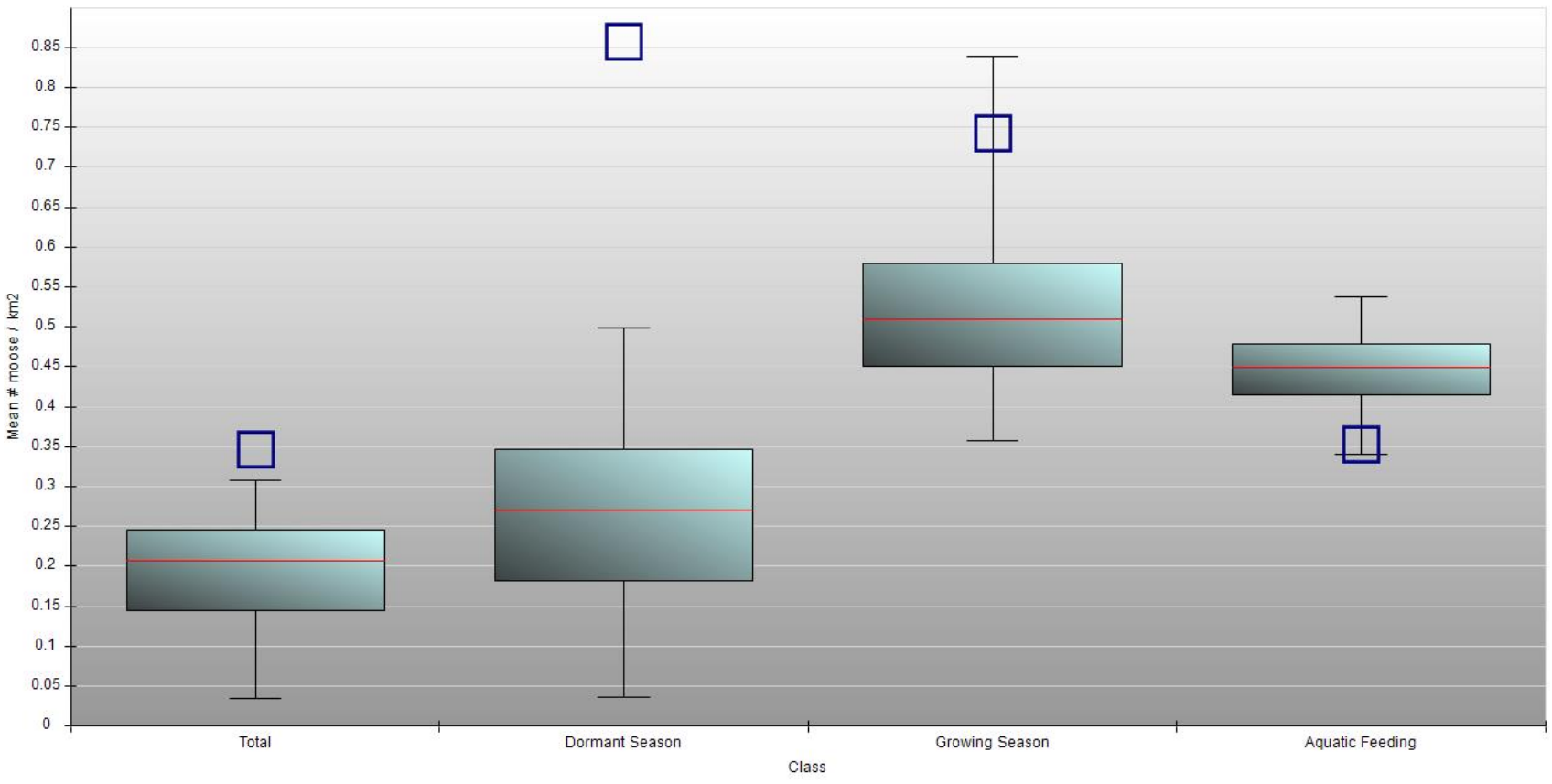


Figure 6. Nagagami Forest Moose carrying capacity (mean number of moose/km^2) for winter (dormant season), summer (growing season) and aquatic feeding areas. The box and whiskers illustrate the upper and lower limits of the range of simulated natural variation (the box portion is the mean or interquartile historical range). The blue squares represent the current (plan start) forest condition.

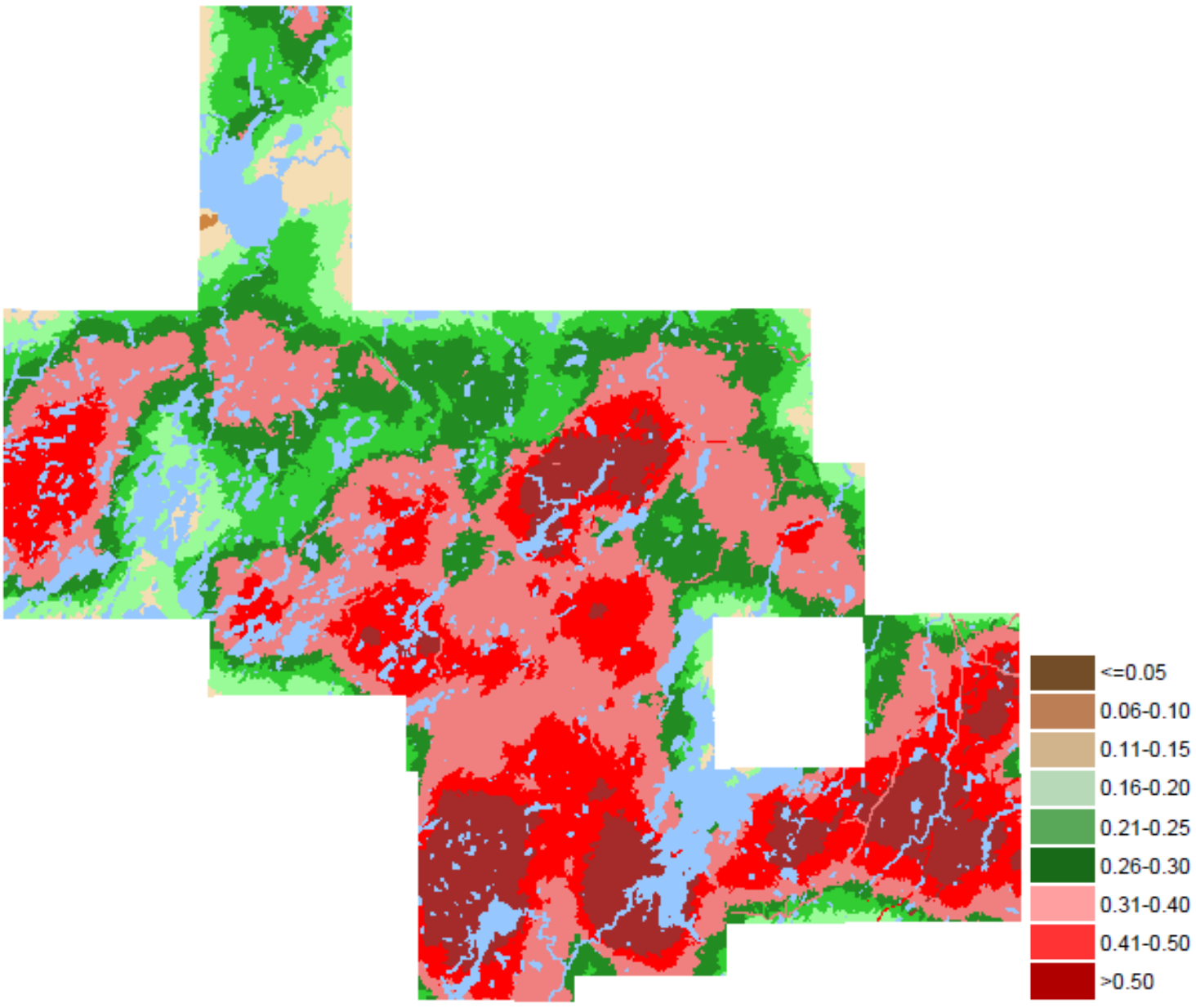


Figure 7. Nagagami Forest OLT spatial results for Moose carrying capacity. The increment ranges are based on predicted density (moose/km^2).

Moose Population Estimates and Targets

Moose may require special landscape consideration when non-forest management (i.e. population) objectives exist. MNRF manages moose populations at the Wildlife Management Unit (WMU) level. The Nagagmi Forest contains portions of 3 WMUs: 21B, 22 and a small portion of 32C (Table 1). Two of 3 WMUs are currently below the lower density objective set for 2030 (Table 1). Assessment of the moose population on the Nagagami Forest would suggest that the moose population is limiting in this area. The assessment supports the use of the fine filter level management for moose habitat within these units. This includes meeting targets associated with structure and composition, as well as pattern. Also included is the implementation of site-specific considerations, including the protection of features (mineral lick AOC) and consideration for higher quality Moose Aquatic Feeding Areas (MAFAs) when planning harvest near shorelines.

Table 1. Moose population 2030 objectives and current estimates within Wildlife Management Units that overlap the Nagagami Forest.

Wildlife Management Unit	2020 Moose Population Estimate	2030 Population Objective-lower	2030 Population Objective-upper
21B	2346	2400	3100
22	1326	1700	2100
32C	1598	not available	not available

Public Comment

At the Desired Forest and Benefits Meeting held for the Nagagami Forest members of the Local Citizens Committee and the public expressed support for improving moose conditions within the management unit. Also, there is a perception that the focus is on caribou habitat in the Nagagami.

4. Rationale for MEA Investigation

A recommendation was made to investigate further if MEAs may exist on the Nagagami Forest. The decision was made based on the habitat and population information already presented in Section 3. To summarize, the Planning Team recognised that the browse and cover component could be enhanced on the Nagagami Forest which would increase carrying capacity potential in selected MEA areas. In addition, the moose population is also currently under the lower objective targets for 2 of 3 WMUs and therefore would also benefit from the fine filter approach of implementing LLPs.

Further, public sentiment shared a similar request to implement moose habitat provisions to enhance the population. The public voiced their concerns regarding the moose population at the desired forest and benefits meetings and at the information centres.

Other considerations when selecting the MEAs were the adjacent forest management unit which are also undergoing or had undergone the MEA process. The adjacent unit considered was the Martel-Magpie forest. This approach attempts to balance spatial distribution for moose connectivity and to minimize the financial impact on licensees.

Ultimately, the goal of the selected MEAs is to provide source moose populations over time for the Nagagami forest and provide source connectivity to adjacent forests.

5. Habitat Objectives

For each one of the Large Landscape Patches identified for the purpose of emphasizing the moose habitat objectives outlined in FMP-10, the intent is to move towards the ideal habitat composition including browse and cover and reducing the impact of access on the quality of habitat available on the land base (Table 2).

Table 2. Moose Emphasis Area FMP-10 Objectives on the Nagagami Forest.

Objective	**Indicator**	**Desirable Level**	**Target**	**Measure**
Within Moose Emphasis Areas, manage the forest to create or maintain a forest composition most beneficial for moose	**Browse**-producing forest	5-30 %	Maintain or move towards	% of MEA identified as browse-producing forest
	Mature Conifer-dominated forest	15-35%	Maintain or move towards	% of MEA identified as conifer-dominated forest
	Mixedwood or Hardwood dominated forest	20-55%	Maintain or move towards	% of MEA identified as mixedwood or hardwood-dominated forest

6. Selected MEAs

Through discussions with the wildlife task team, the dimensions and locations of these candidates were changed from the original suite of candidates (Figure 1). OLT was then run again to generate the MEA habitat indicators (browse, mature conifer, hardwood/mixedwood) at plan start and projected 10-years into the future (Table 3). This ensured that the modifications to the boundaries and locations did not impact the habitat criteria sought. Four (4) of the 19 candidates were then chosen making up 14.9 % of the productive forest (Figure 8).

Table 3. The final short-list of habitat parameters and total area of the MEAs selected

Candidate MEA	**Total Area (Ha)**	**%BROWSE (5-30%)**		**%Mature Conifer (15-35%)**		**%Hardwood Mixedwood (20-55%)**	
		2021	**2031**	**2021**	**2031**	**2021**	**2031**
1	10424	25	35	46	42	27	22
2	7062	17	40	42	31	39	27
3	11926	43	24	27	29	14	20
4	5654	9	35	52	38	38	25

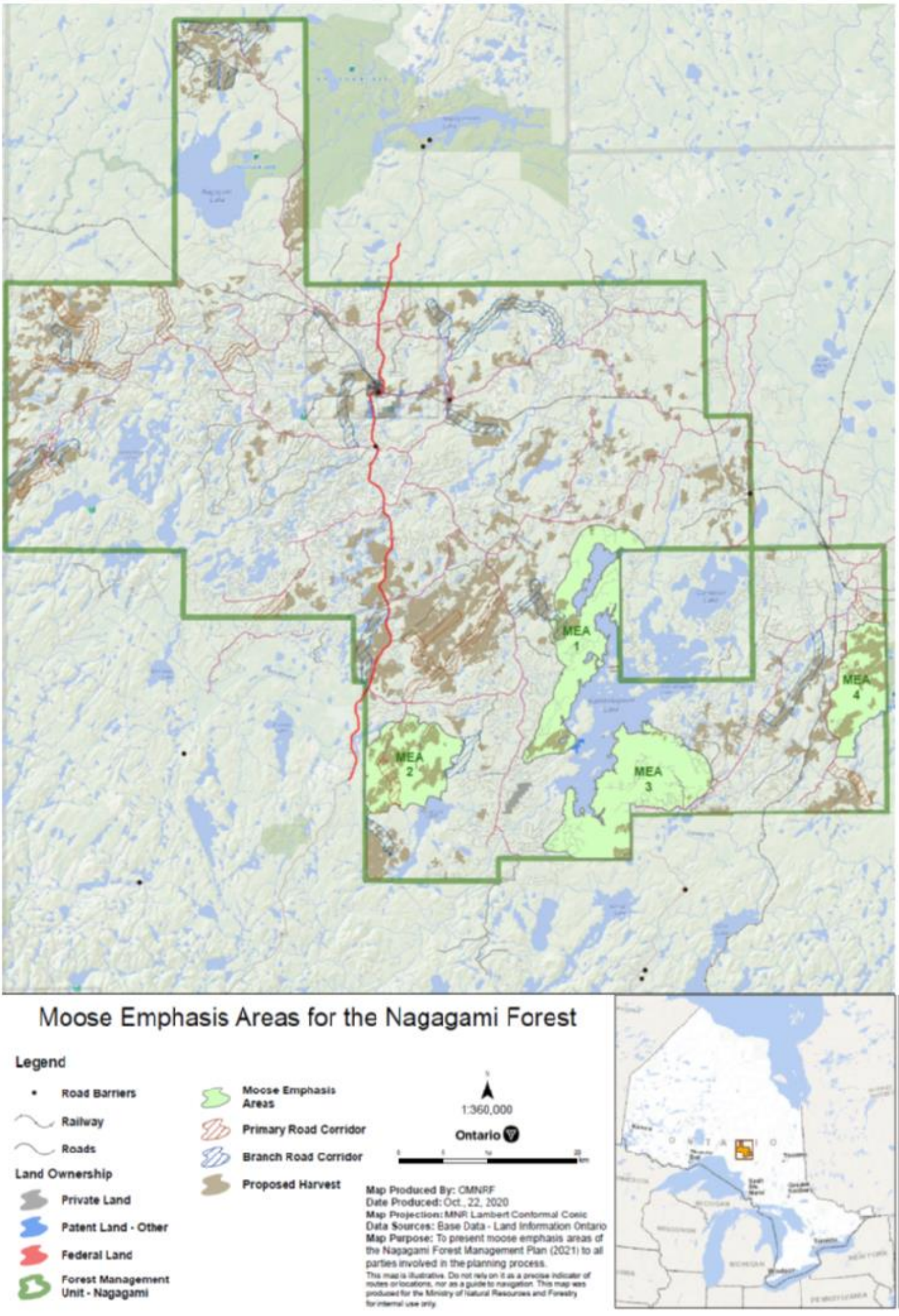


Figure 8,Selected Moose Emphasis Areas for the Nagagami Forest.

7. Residual Cover

Moose are habitat generalists and can use a broad range of forest conditions to meet their needs, though some habitats are preferred over others and habitat preferences change during the year. To achieve forest conditions in a managed forest that are similar to the conditions moose prefer and would encounter in a natural forest ecosystem, it may be desirable to apply the fine filter moose habitat management direction described in this section in some portions of moose range.

A residual planning exercise was conducted to identify areas of summer thermal cover and winter cover within planned harvest blocks for each Moose Emphasis Area. These residual patches were created to ensure the amount and arrangement of summer and winter cover within areas of operations meets the intent of the guidelines specified in table 3.3b of the stand and site guide (listed below).

Summer Cover:

Definition: (("HT">= 10) OR ("AGE_END" >=35)) AND ("PLANFU" = 'SBOG' OR "PLANFU" = 'LC1' OR "PLANFU" = 'PJ1' OR "PLANFU" = 'PJ2' OR "PLANFU" = 'SB1' OR "PLANFU" = 'SF1' OR "PLANFU" = 'SP1')

- **Amount:** ≥3% (15 ha) in any given 500 ha
- **Size and Distribution:** minimum 2 ha, 10+ ha preferred, in at least 2 distinct patches within any given 500 ha.
- **Location:** Summer cover habitat will normally be adjacent to MAFAs moose are most likely to use (i.e., ≤ 200 m, measured from the edge of the MAFA to the nearest edge of the patch of summer cover). Choose MAFAs based on information in Table 1. If such MAFAs are not present, suitable summer cover will be adjacent (≤ 200 m) to other MAFAs, or natural openings (e.g., beaver meadows). Link summer cover to immature, mature, old, or residual forests, particularly shoreline forests (See Sections 4.1 and 4.2.4). Linkages are considered adequate when the distance from the edge of a patch of summer cover to immature, mature or residual forests is ≤ 200 m and the terrain is traversable by moose (e.g., the terrain is relatively flat).
- **Characteristics:** Maintain or retain the best summer cover habitat available. In general, lowland conifer > upland conifer > lowland or upland hardwood > mixed woods. More specifically, high quality summer cover habitat is comprised of stands that are:
    - at least immature in age (i.e., ≥ 35 years; mature stands are preferred) and 10 m in height
    - have canopy closure ≥ 70%; and
    - have an open understory (i.e., the shrub density is low)

Winter Cover:

Definition: The following queries were used to assess the extent of winter cover within MEAs. These queries are ranked from highest to lowest quality (Note: For these queries, CCC is the % “PW" + "PJ" + "PR" + "SB" + "CE" + "HE" + "BF" + "SW" multiplied by the canopy closure.) :

i) High value species, high conifer canopy closure (HVHC)
((“CE" + "HE" + "BF" + "SW") >= ("PW" + "PJ" + "PR" + "SB")) AND "CCC" >= 60 AND "HT" >= 10
ii) High value species, low conifer canopy closure (HVLC)
((“CE" + "HE" + "BF" + "SW") >= ("PW" + "PJ" + "PR" + "SB")) AND "CCC" >= 30 AND "CCC" < 60 AND "HT" >= 10
iii) Low value species, high conifer canopy closure (LVHC)
((“PW" + "PJ" + "PR" + "SB") > ("CE" + "HE" + "BF" + "SW")) AND "CCC" >= 60 AND "HT" >= 10
iv) Low value species, low conifer canopy closure (LVLC)
((“PW" + "PJ" + "PR" + "SB") > ("CE" + "HE" + "BF" + "SW")) AND "CCC" >= 30 AND "CCC" < 60 AND "HT" >= 10

- Characteristics: Patches of winter cover will normally be mature conifer or mixed forest with a conifer canopy component that:
    - is ≥10 m in height
    - Is comprised of tree species that are capable of intercepting snow (see Table 2) (subject to availability and the applicable local or regional cervid strategy), and
    - has ≥60% canopy closure (a conifer canopy closure ≥30% may be acceptable if the conifer component has a high snow interception capability (see Table below) and tends to occur in clumps (i.e., ≥3-5 trees with interlocking crowns)). A conifer canopy closure of 60-80% is optimal so some partial harvest may be acceptable where appropriate; if partial harvest is conducted, clumping of residual trees is preferable to uniform spacing of residual trees.

Snow interception capability	**Species**
High	Hemlock, Red spruce, Cedar
Moderate	White Spruce, Balsam fir, White Pine, upland Black Spruce

Low	Lowland Black Spruce, Red Pine, Jack Pine

- **Patch size and distribution:** Patches of winter cover will be distributed within concentration areas so that:
  - any point within productive forest that does not meet the definition of residual will be <200 m from a patch of winter cover (i.e., 400 m cover-to-cover distance) that is ≥5 ha in size (≥10 ha preferred)
  - any point within productive forest that does meet the definition of residual will be <500 m from a patch of winter cover (i.e., 1000 m cover-to-cover distance) that is ≥2 ha in size (≥5 ha preferred).
- **Amount:** The size and distribution criteria noted above should result in approximately the following amount of winter cover within concentration areas.
  - ≥15% winter cover in areas where the dominant silvicultural systems used create forest that does not meet the definition of residual (e.g., conventional clearcut)
  - ≥2% winter cover in areas where the dominant silvicultural systems used create forest that does meet the definition of residual (e.g., single tree selection)

8. References

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Appendix 1. Parameter Results of 19 Proposed Moose Emphasis Area Candidate

Candidate MEA	Total Area (Ha)	Comments	Harvest Proposed %	%BROWSE (5-30%) 2021	%BROWSE (5-30%) 2031	%Mature Conifer (15-35%) 2021	%Mature Conifer (15-35%) 2031	%Hardwood Mixedwood (20-55%) 2021	%Hardwood Mixedwood (20-55%) 2031	drivable roads (1km buffer) %	drivable roads (0.5 km buffer) %	%CLUPA Enhanced Mangement Area	%Carrying Capacity (0-0.2 moose/km^2)	%Carrying Capacity (0.2-0.3 moose/km^2)	%Carrying Capacity (0.3-0.4 moose/km^2)	%Carrying Capacity (> 0.4 moose/km^2)	% Wetland (>5%)	Past 10 years %Harvest	% Winter Cover Precdicted (>15%)
1	4884	Browse component close to upper range. Close to Hornepayne, heavily accessed and used by ATV. Close to caribou continuous zone.	14.0	26	30	42	35	27	27	68	46	0	10	85	0	0	4	4	43
2	2727	Close to Hornepayne, heavily accessed and used by ATV. Close to caribou continuous zone.	3.8	22	7	51	49	25	27	89	68	0	0	93	1	0	5	1	60
3	4205	Browse component close to upper range. Close to Hornepayne, heavily accessed and used by ATV. Close to caribou continuous zone.	11.4	25	34	37	29	30	27	73	48	0	1	91	4	0	6	7	44
4	6345	Forest cover is primarily mature conifer, little amount of browse or potential to make future browse.	0.3	10	8	56	57	7	7	53	30	0	13	76	10	0	17	2	57
5	2939	Close to Hornepayne. Sawmill yard within MEA. Area is heavily accessed and used by ATVs. Close to caribou continuous zone.	7.5	1	10	28	41	39	34	69	44	0	0	76	20	0	7	0	52
6	4406	Good carrying capacity. Browse component above upper range and cover below lower range. Very little eligible wood - limited ability to manipulate forest cover. Close to Hornepayne, heavily accessed and used by ATVs. Close to caribou continuous zone.	0.7	36	11	26	26	18	20	94	74	0	0	1	24	72	7	8	39
7	4707	Good carrying capacity. Moose Late wintering areas. MAFAs (class 3 and 4).Large harvest area planned north of Shekak and Jackfish River. Close to Hornepayne, heavily accessed and used by ATVs. Close to caribou continuous zone.	19.3	20	36	50	37	27	21	65	33	0	7	4	11	76	18	7	47
8	5922	Good carrying capacity. Captures both sides of a major water features. Depletion of these areas will be contingent on the ability to maintain a good relationship with private land owner, as area east of this river is functionally unavailable to HPL. May consider splitting or removing this candidate.	11.5	19	23	47	39	17	17	93	59	0	26	43	33	13	11	3	49
9	3722	14% private land. Very little eligible wood in this area. Harvest not flexible, given that SB1, MW2, and MW1 make up most of the remaining forest cover.	2.9	16	15	39	38	18	19	96	74	0	0	52	23	0	9	0	48
10	5513	Good carrying capacity. Harvest scheduled for this area may be difficult to achieve indicators post-harvest. Due to the restrictions on SB1, MW1, and MW2, allocating this area requires that some areas to be left behind (to be allocated in the future) as they didn't fit into the strategic solution. This will certainly lead to the creation of edge habitat within this zone.	46.8	17	66	53	24	29	10	58	34	0	9	0	85	15	8	6	51
11	9913	CLUPA G1773. Balance of mature conifer, mature hardwood-mix cover, and browse (according to current allocations). Part of this area is functionally unavailable, may need to be adjusted.	13.7	22	36	56	47	20	16	63	39	100	18	18	36	35	19	7	47
12	3375	CLUPA G1729. Very little eligible wood. Straddles rail line. Town of Oba within.	0.0	21	4	52	54	18	23	91	60	26	0	35	20	24	10	1	50
13	5518	Good carrying capacity. Moose Late wintering areas. Browse component close to upper range. May consider removing, as the access restrictions are already in place with CLUAH remote tourism direction. Lots of eligible wood within the viewshed. South end, historic mining activity.	3.0	28	30	33	33	37	37	58	35	0	0	16	29	51	12	9	29
14	5224	Good carrying capacity. Abundant hardwood cover in the inventory. Area straddles Oba river and CN main line, so may need to consider revising. Area appears to have good carrying capacity at plan start and end.	20.2	15	32	44	33	39	30	65	35	6	0	0	0	95	8	0	41
15	12030	Good carrying capacity now and at plan end. Area part of the the Chapleau game reserve, where there are hunting restrictions. Adjacent to park on Hearst forest. Additionally, area captures a remote tourism outpost lake which has CLUAH access restrictions in place.	14.6	16	29	47	39	36	30	37	25	0	0	4	21	71	12	0	45
16	10626	Good carrying capacity. Moose calving site. MAFAs (class 3 and 4). Large area with lots of proposed harvest. Captures area that already has remote tourism access restrictions. Additionally, Breckenridge road is closed for two weeks during the gun moose hunt. Both of these should provide adequate access protection for Nameigos Lake. Concerns were offered about expanding the access restriction to such a large area, especially given what is already in place through crown land use planning (i.e. CLUAH). The east area (circled in green) captures a lowland swamp are which may not be conducive to moose given the lack of browse in this area.	24.4	14	39	47	33	36	26	27	14	0	0	2	4	92	15	4	45
17	5089	CLUPA G2694. Good carrying capacity. MAFAs (class 3 and 4). Browse component close to upper range. A bridge has been pulled out on the way into this area (circled in green), leaving the area south of Nameigos River challenging to access for the public and functionally unavailable to forest industry. Although the access restrictions preclude forest cover manipulation, the inaccessibility of this area may make it an attractive option.	0.0	28	20	44	48	14	17	78	54	100	0	0	49	48	14	3	38
18	5900	CLUPA G2694. Good carrying capacity. Browse component well above range and cover below lower ranges. Tourism has indicated they would like to see access restrictions implemented in this area. Currently, this area has access restrictions that only allow roads to be built to operational road standard, and must be decommissioned at or near the point of origin within 2 years of the completion of silviculture. Additionally, Mosambik is closed for the month of October (i.e during the moose hunt - bow and gun). Most of the wood in this area was harvested in the 70s and 80s. Recent harvest went back and 'cleaned-up' remaining stands. Area is mostly devoid of eligible forest cover, except for a single contingency block and 2 small patches of areas scheduled for harvest in 2021. Given the existing CLUAH access restrictions in this area and there is very little opportunity to manipulate forest cover, this may be a less desirable candidate.	0.2	53	19	17	19	14	20	80	68	100	0	11	16	72	8	11	19
19	7511	Good carrying capacity. MAFAs (class 3 and 4). Browse component above range. Very little eligible wood. The opportunity for forest cover manipulation is negligible. Additionally, CLUAH access restrictions cover most of this area. Group discussed potentially expanding this area further east in order to capture more eligible area.	1.0	36	21	34	38	13	21	72	48	0	0	7	36	51	7	2	32

(u) Primary and Branch Road Corridors and Other Maps of Interest

Nagagami Forest / Forêt d'Nagagami
Plan d'aménagement forestier 2021-2031
2021-2031 Forest Management Plan
FMP 2021 Road Use Management Strategy

Legend

- Access Control
- SFL Boundary
- Lake
- Patent Land
- Moose Emphasis Area
- Park/Conservation Area

Operational road boundary

- Regular
- Contingency

Roads

- Highway 631
- Primary road
- Branch road
- O
- M

Road Corridor

- Branch
- Primary

Road Networks

- Beaton
- Hornepayne Creek
- Kaby
- Kenogami Lumber
- Nameigos
- North Central
- Oba
- South Central
- White Owl

Nagagami Management Unit

Provincial overview showing the location of the Nagagami Management Unit in the context of other management units.

Kenora, Kapuskasing, Thunder Bay, Timmins, Sault Ste Marie, Sudbury, North Bay, Ottawa, TORONTO

Planimetric Base Features maintained and provided by the Ontario Ministry of Natural Resources and Forestry.
Dispositifs bas planimétriques maintenus et fournis par le Ministère des Richesses naturelles et des Forêts de l'Ontario.

Universal Transverse Mercator Projection, Zone 16.
North American Datum 1983 (NAD83)
Projection transverse universelle de Mercator Zone 16.
Système de référence géodésique nord-américain, 1983

First Resource Management Group Inc. does not guarantee the accuracy of the information on this map. First Resource Management Group Inc. ne guarantie pas la précision d'information sur cette carte.

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Produced
October 25, 2020

First Resource Management Group

N W E S

Original Document Scale 1:125,000

0 1 2 3 4 5 10 15 20 25
Kilometers

HORNEPAYNE LUMBER
— CARING FOR OUR FOREST —

Nagagami Forest / Forêt d'Nagagami
Plan d'aménagement forestier 2021-2031
Moose Emphasis Areas
2021-2031 Forest Management Plan

Legend

- SFL Boundary
- Townships
- Access Control
- Utility Line
- Railway
- Patent Land
- Park/Conservation Area
- Moose Emphasis Area

Roads

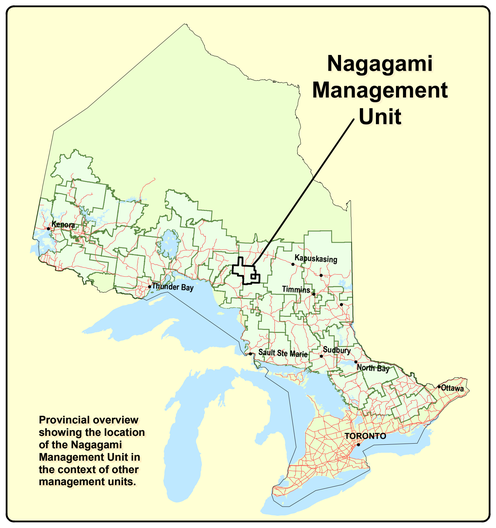
- Highway 631
- Primary road
- Branch road
- RC Centre Line

Road Corridor

- Branch
- Primary

HIAWATHA
NAGAGAMI
LESSARD
FOCH
WICKSTEED
HAIG
FARQUHAR
CHOLETTE
DREW
CHELSEA
LARKIN
LASCELLES
WOOLRICH
MATTHEWS
BAYFIELD
BEATON
LIPTON
DERRY
HAWKINS
BRECKENRIDGE
LIZAR
ERMINE
IRVING
NAMEIGOS
MOZAMBIK

MEA 1
MEA 2
MEA 3
MEA 4



Provincial overview showing the location of the Nagagami Management Unit in the context of other management units.

Planimetric Base Features maintained and provided by the Ontario Ministry of Natural Resources and Forestry.
Dispositifs bas planimétriques maintenus et fournis par le Ministère des Richesses naturelles et des Forêts de l'Ontario.

Universal Transverse Mercator Projection, Zone 16.
North American Datum 1983 (NAD83)
Projection transverse universelle de Mercator Zone 16.
Système de référence géodésique nord-américain, 1983

First Resource Management Group Inc. does not guarantee the accuracy of the information on this map. First Resource Management Group Inc. ne guarantie pas la précision d'information sur cette carte.

This map is for illustrative purposes only. It is not to be used as a precise indicator of routes, location of features nor as a navigational guide. Cette carte est pour la valeur d'illustration seulement. Il ne doit pas être utilisé comme carte routière, emplacement de caractéristiques, ni comme guide de navigation.

Produced
October 27, 2020

First Resource Management Group

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Original Document Scale 1:125,000

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Kilometers

HORNEPAYNE LUMBER
— CARING FOR OUR FOREST —

(v) Nagagami Forest Implementation Toolkit

IMPLEMENTATION TOOLKIT

Nagagami Forest Management Plan

April 1st, 2021 to March 31st, 2031



FIRST RESOURCE MANAGEMENT GROUP Inc.
agent for Hornepayne Lumber Limited Partnership

HORNEPAYNE LUMBER
— CARING FOR OUR FOREST —

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Module 1

Standards, Guidelines, and Best Management Practices

1.0 Standard, Guideline, and Best Management Practices

The *Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales* (and hereafter referred to as the *Stand and Site Guide* (SSG)) was used as the basis for developing the following conditions on regular operations. This toolkit uses the same characterization of direction within this guide including standards, guidelines, or best management practices. It is important to understand the differences between these three terms since they have different implications when implementing the forest management plan.

> ***Standard***: a component of a guide that provides mandatory direction
>
> ***Guideline***: a component of a guide that provides mandatory direction, but requires professional judgment for it to be applied appropriately at the local level
>
> ***Best Management Practice***: a component of a guide that suggests a practice or strategy to help implement the overall purpose of the standards and guidelines

Standards must be followed as written; there is no room for interpretation on the part of the forest managers, field supervisors and operators. Guidelines are also mandatory and must be followed, but require professional expertise and local knowledge in order to be implemented. They may be expressed as a range of values or may need to be implemented in different ways based on the site conditions or circumstances encountered. Best management practices are not mandatory direction, but rather are examples of practices that forest manager may wish to use. The list of best management practices is not intended to be exhaustive; forest operators may think of and implement other ideas or strategies. There is no requirement to use any of these best management practices, and a specific best management practice may not be applicable to local circumstances.

In some cases, guidelines include words or phrases such as ‘normally’, ‘reasonable efforts’, and ‘extraordinary circumstances’ to reflect the *Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales* (SSG) authors’ appreciation that situations may be encountered when the guideline cannot be implemented exactly as written. The last two phrases are explained in the glossary. The word ‘normally’ is used to indicate that the authors believe the guideline can be applied in the vast majority of situations.

These standards, guidelines and best management practices were used to assist in the development of the following Timiskaming Forest Management Plan conditions and procedures on regular operations and in some cases AOC operational prescriptions.

Module 2

Primary, Branch and Operational Road Conditions and Procedures

for the

2021-2031 Nagagami Forest Management Plan

2.0 Primary, Branch and Operational Roads

As the sustainable forest license (SFL) holder, a list of roads/road networks that are required for the purpose of forest management activities is identified in table FMP-19. Use management strategies for these roads are located in Section 6.1.4 through to 6.1.7 of the supplementary documentation.

As part of the Implementation Toolkit, this module describes the conditions and procedures on primary, branch and operational roads to be followed for road construction and crossing installation and removal procedures for both culverts and portable bridges when required on all, all-weather and temporary roads during the 2021-2031 FMP. These conditions and procedures will be used during forest operations scheduled as part of the annual work schedule during the period of this FMP.

This module assists in determining the appropriate course of action by:

- Defining the situation pertaining to the watercourse (new / temporary installation, type of installation, timing restrictions, repair, removal, mitigative maintenance, etc.
- Stream crossing structure (type, sizing);
- Maintaining natural drainage patterns;
- Techniques for appropriate installation and placement/replacement and removal of crossing structures;
- Managing Soil Disturbance (includes cut/fills and ditch line slope stability);
- Maintaining proper function of crossing structures;
- Managing road construction and forest management activities as they pertain to watercourse crossings. Strategic roads planning to minimize the number of times each water body is crossed, reducing the potential cumulative impact of water crossings to a system.

The module will ensure consistent planning and development of sites to:

- Maintain water quality, aquatic habitat and productivity.
- Reduce the risk of washout by managing blockage/change in stream velocity, soil moisture regime and ponding of water.
- Control soil erosion, compaction, destabilization, forest floor displacement, soil productivity and impact to wetland biodiversity.
- Maintain year-round forest management operations and reduce delays (excluding timing restrictions) associated with stream crossing and/or hydrological issues (i.e. beaver dams)

The FMP uses the following terms and definitions when describing roads and they are included to clarify the attached procedures:

Primary roads are roads built for long-term use that provide principle access for The management unit and are maintained and used as the main road system on The management unit, although there may be significant periods of time when specific primary roads are not required for forest management purposes.

Branch roads are, other than primary roads, that branch off existing or new primary roads or branch roads, providing access to and through or between areas of operations on the management unit.

Operational roads are roads within operational road boundaries (ORB), other than primary or branch roads, which provide short-term access for harvest, renewal and tending operations. Operational roads are normally not maintained after they are no longer required for forest management purposes, and may be site prepared and regenerated. They are used to access harvest blocks and built for shorter-term use for harvest and subsequent renewal operations. These roads may be un-surfaced or thinly surfaced. Culverts and/or bridges should be removed following operations as required consistent with the use management strategy for those roads.

Road Maintenance (existing road) - Includes those activities necessary to maintain or upgrade a road and road right of way for traffic use. Maintenance includes work within the road right–of-way such as brushing (mechanical or chemical), ditching, removal of merchantable timber widen or realign the road to accommodate safe log truck traffic, adding of gravel lift to widen or upgrade the existing road bed and replacing or upgrading of water crossing structures, applying of calcium to "sand boils" along portions of the road, as well as work required to clear debris within a distance of 4 meters from a blocked culvert inlet or conduct emergency repairs. Operators are reminded to refer and implement *DFO Protocol* as they relate to maintenance activities. Maintenance will only occur during the period of time when forest operations are ongoing, if required. Road maintenance work for the following activities does not require start-up notification or reporting:

1. Snow removal, grading and spot gravelling,
2. Brushing within the existing spoil banks that does not include removal of merchantable trees
3. Bridge cleaning and repairs that will not impact water quality,
4. Culvert cleaning including minor beaver damage,
5. Winter crossing removals,
6. Minor ditching which is less than 200 meters in total length and not closer than 100 meters from any stream or water body,

Existing forestry aggregate pits will be identified on operational maps at the AWS stage.

Operational Road Boundaries (ORB) – Variable width zones indicating the perimeter of the area from an existing road or planned road corridor to the harvest area. ORB's may also include skid trails where it is required to a) avoid operational restraints such as steep terrain and riparian zones directly adjacent to the block or b) provide a landing pad for harvested timber that is accessible by an all-weather road or c) be used as a primary skid trail established to take the place from a haul road. Development of new forestry aggregate pits and the use of existing forestry aggregate pits within the ORB is permitted.

2.2 Standard Operating Practices for Roads and Water Crossings:

Construction of all roads and water crossings are governed by the mandatory standards found in the *Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales* (SSG). The following list sets out standards that are considered mandatory to protect the natural environment when access roads and water crossings are built.

These standards must be adhered to by anyone planning, constructing, maintaining access roads or water crossing as part of timber management on Crown land in Ontario and their use should also be encouraged on access roads for purposes other than timber management (i.e. mining, access to private, etc.) on the Nagagami Forest.

2.1 Planning, Construction, and Maintenance of Roads Outside Areas of Concern

The direction for roads outside areas of concern include all roads that are planned, constructed, maintained and then decommissioned on Crown land on the Nagagami Forest, excluding roads within AOC's.

2.2.1.1 Standards

- Materials moved during construction, such as grubbed or earth fill material, will not be piled where they block drainage courses.

- Fill material for roads built below the high-water level, within the floodplain of water features, will be erosion resistant and/or protected from erosion.

- Any exposed mineral soil between the height of land and a water crossing, or within 100 m of a water crossing, whichever is less, will be trimmed to a stable angle and be protected from erosion so sediment will not enter the water after construction.

- MNR will ensure that the signs used to identify the use management strategies for roads (e.g. travel restrictions) are maintained. Operators should advise the SFL of any deficiencies when noted.

2.2.1.2 Guidelines for Forest Operators

- When all-weather roads must cross wetlands, provide frequent cross drainage culverts to ensure that surface water is equalized on both sides of the road and impacts to hydrologic flow and wetland function are minimized.

- When the road location and landings within the approved corridor are being finalized, avoid recognizable ephemeral streams, springs, seeps, and other areas of groundwater discharge that are connected to lakes, ponds, rivers, or streams and small unmapped wetlands (e.g., woodland pools). If these areas must be crossed, use construction and maintenance techniques and practices to minimize impacts to hydrologic flow and wetland function. Natural water movements will not be impeded, accelerated, or diverted.

- The clearing of landings should be of an appropriate size to accommodate the volume of timber harvested from the road right-of-way and/or other intended uses (e.g. stockpile, staging areas, etc.).

- Identify and prevent blockage to drainage courses (i.e., surface drainage) through appropriate use of cross drainage culverts. Some of these locations may best be determined the following spring, when ponding is evident at unpredicted locations along a new road.

- Where ditches leading downhill from rock cuts pass over earth material, use techniques to protect the earth/rock interface from erosion.

- Grubbing of low vegetative cover between the height of land (e.g., the high point on a ditch line) and a water crossing, or within 100 m of a water crossing, whichever is less, will be limited to that required to address engineering issues and safety concerns, such as the removal of hazards.

- Operators will employ blasting mats or other means to ensure rock or earth remains within the right-of-way when explosives and blasting are required.

- When constructing roads during the bird nesting season, and occupied nests are encountered, operators will follow direction in appropriate AOC prescription.

- Reasonable efforts (e.g., clearing of logging debris, avoid steep ditching) will be made to ensure that recreational portage routes and trails used for accessing and working trap lines are passable following forest management operations.

2.2.1.3 Best Management Practices

- Log landings, loading areas, and turn-around areas should be located on high ground to avoid rutting and blocking of drainage paths.

- Grubbed material should be piled and stored so that it can be used to assist in road decommissioning.

- In erodible soils on steep slopes, or near water features, long ditches without off-takes should be stabilized.

- Any wetland or peatland (e.g., bogs, fens) with organic layers over 2 m deep, without a good root mat, should be avoided because they are less likely to support the road weight, resulting in excessive settlement or displacement and impacts to hydrologic flow and wetland function.

- If wetlands (e.g., bogs) must be crossed to conduct forest operations, consider using temporary, winter crossings when the soil is frozen.

- If long windrows (e.g., of slash or rock) are created, breaks should be provided to allow animals, other forest users and operations unobstructed access routes across the right-of-way. A 10 m break every 100 m of windrow is a good target.

- If areas where animal migrations occur (e.g., deer, woodland caribou) are known, wing back snow banks following heavy snowfalls and maintain low snow banks over the course of the winter.

- Construction of loop roads in high value wildlife habitats should be avoided.

2.2.2 Planning, Construction, And Maintenance of Roads within Areas of Concern

Despite careful planning, some roads will traverse AOC's. The following provides direction intended to mitigate potential adverse effects that apply generically to all AOC's. Also reference Area of Concern prescriptions for additional restrictions on roads based on the specific values associated with individual AOC's.

2.2.2.1 Standards

- Before construction of any road in an AOC, ensure all considerations with respect to road planning, location, use management strategy and other mitigation techniques are consistent with the specific direction for the associated value as described in Area of Concern prescriptions.

- Unless approved by MNRF biologist, construction and maintenance operations that may enter a water feature (i.e. in-water work) or that may potentially cause sediment to enter a water feature, are not to occur in shoreline AOC's during periods of fish spawning, incubation, and fry emergence. For the Nagagami Forest these periods will be as follows:
    1. Cool Water (CL) - Work in water to proceed only between June 16th[t] and April 14th
    2. Cold Water (CD) / UF – Work in water to proceed only between June 16th and August 31st

- Fill material placed to build the road below high-water level within the floodplain of a water feature will be erosion resistant and/or protected from erosion.

2.2.2.1 Guidelines for Forest Operators

- *Primary Road Corridors and Right-of-ways (ROW*): The maximum right-of-way width of any primary roads through an unallocated stand is **50 metres**. The exception to this width is if a safety concern is identified, in which case the right-of -way width can be offset to remedy a safety concern, however the rational must be documented in the FOIP report. The right-of-way width through an AOC will be kept as narrow as possible, with the maximum only exceeding **20 metres** if a safety concern is identified. The AOC width can be offset to remedy a safety concern however the rational must be documented in the FOIP report.

- *Branch Road Corridors and Right-of-ways (ROW):* The maximum right-of-way width of any branch roads through an unallocated stand is **40 metres**. The exception to this width is if a safety concern is identified, in which case the right-of -way width can be offset to remedy a safety concern, however the rational must be documented in the FOIP report. The right-of-way width through an AOC will be kept as narrow. as possible, with the maximum only exceeding 20 metres if a safety concern is identified. The AOC width can be offset to remedy a safety concern however the rational must be documented in the FOIP report.

- *Operational Road Corridors and Right-of-ways (ROW):* The maximum right-of-way width of any operational roads through an unallocated stand is **30 metres**. The exception to this width is if a safety concern is identified, in which case the right-of -way width can be offset to remedy a safety concern, however the rational must be documented in the FOIP report. The right-of-way width through an AOC will be kept as narrow as possible, with the maximum only exceeding **20 metres** if a safety concern is identified. The AOC width can be offset to remedy a safety concern however the rational must be documented in the FOIP report.
-

- To maintain drainage patterns and minimize the potential for sediment laden roadbed or ditch run-off to reach a water feature, use cross drainage culverts whenever a road crosses a gully or other natural drainage feature. An appropriately sized drainage culvert for the water feature will be used whenever possible. There will be a minimum culvert sizing of **150 mm** on cross drains.

AOC's:

i) fill in or around a water feature will be erosion resistant;
ii) in erodible soils, it will be necessary to use erosion control techniques;
iii) trees will be felled so they do not fall into water;
iv) design ditches so they do not discharge directly into a water feature; ditches will divert flow into the bush so the water filters through natural vegetation before entering a water feature unless impractical to do so, and
v) where it is not practical to disperse ditch water before the ditch reaches a water feature, mitigative measures will be required.

- Roads built within 15 m of a water feature and not associated with a water crossing will: use techniques and practices to reduce the possibility of roadbed erosion; avoid grubbing; and, design ditches to minimize the possibility of sediment entering the water feature.

- Reasonable efforts (e.g., clearing of logging debris, avoid steep ditching) will be made to ensure that recreational portage routes, and trails used for accessing and working trap lines, are passable following forest management operations.

- The various best management practices found in the SSG will also be considered for use where it will assist in meeting the standards described above.

- Access has been shown on patent land for information purposes only and it is the responsibility of individual shareholders to obtain the necessary permission to conduct operations on patent land.

- New roads that have proposed access through known values (i.e. as specified In supplementary documentation of those specific values designated in the Forest Management Plan) must follow centrelines shown on the Areas Selected for Operations map.

- There are segments of streams within the Operational Road Boundaries Where operations are not permitted unless an additional assessment is completed and approved by the MNRF. They have been clearly identified on the operational scale maps (i.e. symbolized as a hatch mark on stream centreline). The remaining portion of the stream segments would be considered as "acceptable crossing locations".

- The fisheries review was completed on a **200m** corridor where a crossing Was identified during the AWS (i.e. symbolized as blue/red dot/square on Operational scale maps). Operators will be permitted to relocate the actual crossing as mapped in the AWS to an adjacent site along the same stream segment 100 m upstream or downstream without further review unless the following conditions are encountered:

  - o A restricted zone has been identified
  - o The new crossing location falls inside an AOC where road restrictions apply other than slope dependent reserves.
  - o The crossing location falls within a planned fixed residual.
  - o The crossing is outside the **200 m** corridor (i.e. refer to Module 4)

- The new operational roads within ORB must consider the following:

i. No road would be constructed outside of the ORB shown on the Areas Selected for Operations Maps without prior approval from the MNR (i.e. revision).

ii. No road would be constructed within areas identified as having a potential for Cultural Heritage (CH) values or for Archeological Potential Areas (APA) as identified by the predictive model unless field assessed by a licensed archaeologist to confirm no values exist or road is constructed as per conditions within this module. Documentation of the assessment would be retained at the FRMG office and a copy sent to MNRF, as is currently done during the AWS review of APAs or CH potential areas.

2.2.2.2 Best Management Practices

• Clearing of trees and brush should be done in daylight where there is no potential of losing the centerline ribbons during right of way clearing.

• Place culverts in approaches of a causeway to reduce the velocity of the spring freshet through the main culvert in the channel.

• Having a maintenance schedule to keep culverts clear of obstructions to help avoid potential problems, particularly washouts and problems related to fish passage.

• Nuisance beaver activity should be managed to keep culverts clear. Suggested methods are provided in *The Beaver Handbook* (MNR 1995), district protocols or in *DFO Protocol*

Module 3

Forestry Aggregate Pits Conditions and Procedures

for the

2021-2031 Nagagami Forest Management Plan

3.0 Forestry Aggregate Pits

The extraction of aggregates is a necessary and integral part of road construction and maintenance. Forestry Aggregate Pits (FAP's) are specific types of pits as defined by the Aggregate Resources Act that apply to the forest industry in certain situations.

By regulations under the *Aggregate Resources Act*, a person engaged in forest operations on Crown land is exempt from subsection 34(1) of that Act, if the following criteria are satisfied. Those criteria are the following:

- A Forest Management Plan (FMP) for the management unit has been approved;

- The aggregate is required for a forest access road in a management unit;

- Aggregate is extracted:
    a. no closer than 1.5 metres above the established groundwater table; or

    b. closer than 1.5 metres above the established groundwater table if:
        (i) the proposed site is remote or isolated; and
        (ii) the excavation limit of the site is not within:
            - 500 metres of a coldwater stream;
            - 1000 metres of a waterwell, whether dug or drilled; and
            - 5000 metres of a receptor;

- Aggregate extraction will be completed within 10 years from the commencement of the pit; and

- The pit is or has been established within:
    a. An approved new primary or branch road corridor in the Forest Management Plan and the Annual Work Schedule;
    b. An approved area of operations in the Forest Management Plan and in the Annual Work Schedule;
    c. An approved operational road boundary in the Forest Management Plan and in the Annual Work Schedule; or
    d. An approved aggregate extraction area in the Forest Management Plan and in the Annual Work Schedule that is located within 500 metres of an existing forest access road.

Aggregate pits that satisfy these criteria are referred to as "Forestry Aggregate Pits".

The extraction of aggregate from Forestry Aggregate Pits for use on forest access roads within the forest management unit will comply with the operational standards in this FMP as outlined below.

As described in the exemption criteria previously, Forestry Aggregate Pits may be established within an aggregate extraction area. Aggregate extraction areas have been identified for the ten-year operational period and are shown on the area selected for operations maps.

If aggregate is required from areas that are not consistent with the exemption criteria, an amendment to the forest management plan will be required to identify a new

aggregate extraction area. The amendment will be consistent with the requirements for an aggregate extraction area identified in the Forest Management Planning Manual.

3.3.1 Planning, Construction, And Maintenance of Forest Aggregate Pits

Forest aggregate pits are relatively small, of short-term duration (<10 years), and are associated with requirements for road use and maintenance in an approved forest management plan. For forestry aggregate pits, the direction in this Module will apply.

3.3.1.1 Standards

The following operational standards apply to the extraction of aggregate resources for Forestry Aggregate Pits:

- Top soil and overburden, where present, will be stripped and stored on site.

- Aggregate material may be removed only within areas where access, harvest, renewal, or aggregate extraction has been planned and approved, with no removal occurring within 15 metres of the boundary of any planned area.

- Aggregate material must not be removed from an area of concern or within 15 metres of the boundary of an area of concern, except:

- For a cultural heritage landscape or historic Aboriginal value, as defined in the Forest Management Guide for Cultural Heritage Values, if,
    - FMP-11, section D of the forest management plan documents conditions on location, construction or use of the Forestry Aggregate Pit, as per the advice of a qualified individual as defined by the Forest Management Guide for Cultural Heritage Values, and
    - The aggregate material is removed in accordance with such conditions; and

- For all other values, if,
    - FMP-11, section D of the forest management plan documents conditions on location, construction or use of the Forestry Aggregate Pit, and
    - The aggregate material is removed in accordance with such conditions.

- Notwithstanding standard 3 above, aggregate material must not be removed from an area of concern or within 15 metres of the boundary of an area of concern for the following values, as defined in the Forest Management Guide for Cultural Heritage Values:
    - Archaeology site;
    - Cemetery; or
    - Archaeological potential area.

- When operating within 15 metres of a proposed roadside ditch, no excavation is to take place below the elevation of the planned depth of the

proposed ditch; all excavations must be immediately sloped to no steeper than a 2:1 (horizontal: vertical) angle.

- During extraction, no undercutting of the working face is permitted and:
    - The working face must be sloped at the angle of repose; or
    - The vertical height of the working face must not be more than 1.5 metres above the maximum reach of the equipment.

- All trees within 5 metres of the excavation face must be removed.

- The maximum pit area must not exceed 3 ha. When a pit or a portion of a pit is rehabilitated, it is no longer part of the pit.

- When the site is inactive, all pit faces must be sloped at the angle of repose.

- Within the excavation area, no ponding is allowed and offsite drainage must be designed to prevent sediment from entering any water feature.

- Unless an aggregate permit (e.g. Category 9) has been issued, by the end of the 10-year period starting from the commencement of the Forestry Aggregate Pit:
    - Buildings, structures, or processing equipment must be removed from the site; and
    - Rehabilitation of the site must be completed.

- Notwithstanding standard 11 above, MNRF may direct that a Forestry Aggregate Pit be rehabilitated prior to the end of the above-noted 10-year period where the responsibility for the road and associated Forestry Aggregate Pit is being transferred back to MNRF.

- Final rehabilitation must include:
    - Sloping of all pit faces to a minimum of 3:1(horizontal: vertical);
    - Re-spreading of any topsoil and overburden that was stripped from the site; and
    - Mitigative measures, to the satisfaction of MNRF, to prevent erosion (e.g. establishment of vegetation).

- Existing or proposed Forestry Aggregate Pits within areas of concern, or in the vicinity of features that are addressed by conditions on operations, as described in MNR's forest management guide(s) relating to conserving biodiversity at the stand and site scales, must not be constructed or operated except in circumstances as identified in the conditions on operations in the forest management plan. This includes any restrictions on the construction of new Forestry Aggregate Pits and timing of aggregate extraction, rehabilitation, or other associated operations in existing pits.

3.3.1.2 Guidance to Forest Operators

- Aggregate material must not be removed from an area of concern or within 15 metres of the boundary of an area of concern, except in accordance with the conditions described in FMP-11.

- The conditions on operations for Forestry Aggregate Pits must be informed in part by the *Endangered Species Act, 2007*, including any applicable habitat regulations and relevant policy direction.

- Progressive rehabilitation of the site must be ongoing during the 10-year period, starting from the commencement of the Forestry Aggregate Pit.

3.3.1.3 Conditions on Forestry Aggregate Pits within AOC's

a. Ponds – low potential sensitivity to forest management operations and Beaver ponds and beaver meadows requiring special management to regenerate food supply

Description

- Ponds with low potential sensitivity to forest management operations (LPS ponds)

- Any pond that does not meet the criteria for an HPS or MPS pond.

Standards

- Landings and aggregate pits are not permitted within 15 m of ponds.

b. Stream segments - low potential sensitivity to forest management operations

Description

- Streams with low potential sensitivity to forest management operations (LPS streams)

- Any stream segment that does not meet the criteria for an HPS or MPS stream.

Standards

- Aggregate pits are not permitted within 15 m of the active channel.

c. Mapped permanent non-forested wetlands

Description

- Mapped, open wetlands, treed wetlands, and brush & alder wetlands. Polygons identified as brush & alder that are not wetlands (e.g., old fields) are excluded. In the field, the boundary between non-forested wetlands and forest is defined where the canopy cover of trees ≥10 cm d.b.h is ≥25% or the canopy cover of trees ≥1.5 m tall is ≥30%.

Standards

- Aggregate pits are not permitted within 15 m of non-forested wetlands.

d. Woodland Pools

Description

- Recognizable temporary bodies of open water encountered during operations that have a surface area ≥500 m2 (i.e., about 25 m in diameter if circular), are not ponds (i.e., <0.5 ha in size), and are not connected to a stream or associated with a mapped non-forested wetland.

Standards

- Landings and aggregate pits are not permitted within 15 m of the high-water mark of pools.

e. Inactive nests of great gray owl, northern goshawk, or red-shouldered hawk

Description

- Nests not known or suspected to have been occupied (see glossary for definitions) at least once within the past 5 years that are
    - >400 m from a primary nest or
    - <400 m from a primary nest but in poor repair.

- Primary and alternate nests within nesting areas where all nests within the nesting area have been documented as unoccupied for ≥3 consecutive years.

- Direction applies to nests known before, or found during, operations.

Guidance to Forest Operators

- No timing restriction on operations associated with roads, landings, and aggregate pits around inactive nests.

- Reasonable efforts will be made to avoid constructing new aggregate pits within 20 m of inactive nests.

f. Unoccupied stick nests built or used by barred owl, broad-winged hawk, common raven, Cooper's hawk, great horned owl, long-eared owl, merlin, red-tailed hawk, or sharp-shinned hawk or by an unknown species

Description

- Unoccupied nests known or suspected to have been built or used by the barred owl, broad-winged hawk, common raven, Cooper's hawk, great horned owl, long-eared owl, merlin, red-tailed hawk, or sharp-shinned hawk.

- Unoccupied nests built by an unknown species but unlikely to have been built by the northern goshawk or red-shouldered hawk.

- Direction applies to nests known before, or found during, operations.

Standards

- Aggregate pits will not be constructed within 20 m of nests of the barred owl, Cooper's hawk, common raven, great horned owl, long-eared owl, red-tailed hawk, or unknown large stick nests.

Guidance to Forest Operators

- Reasonable efforts will be made to avoid constructing new aggregate pits within 20 m of nests of the broad-winged hawk, merlin, sharp-shinned hawk, or unknown small stick nests.
- No timing restriction on operations associated with aggregate pits around unoccupied nests.

g. Unoccupied nests/communal roosts in cavities previously used by American kestrel, barred owl, boreal owl, eastern screech-owl, great horned owl, northern hawk owl, northern saw-whet owl, or chimney swift

Description

- Unoccupied nests/communal roosts in cavities known or suspected to have been used by the American kestrel, barred owl, boreal owl, eastern screech-owl, great horned owl, northern hawk owl, northern saw-whet owl, or chimney swift.

- Direction applies to nests known before, or found during, operations.

Standards

- New aggregate pits will not be constructed within 20 m of nests/communal roosts of the barred owl, great horned owl, or chimney swift.

Guidance to Forest Operators

- Reasonable efforts will be made to avoid constructing new aggregate pits within 20 m of nests of the American kestrel, boreal owl, eastern screech-owl, northern hawk owl, or northern saw-whet owl.

- No timing restriction on operations associated with aggregate pits around unoccupied nests/communal roosts.

h. Nests of waterfowl, grouse, or sandhill cranes containing eggs encountered during forest management operations

Description

- Known nests of waterfowl, grouse, or sandhill cranes containing eggs encountered during operations.

Standard

- Known nests of waterfowl, grouse, or sandhill cranes containing eggs encountered during the development of forestry aggregate pits will not be destroyed.

Guidance to Forest Operators

- Reasonable efforts will be made to minimize disturbance of known nests of waterfowl, grouse or sandhill cranes containing eggs encountered during the development of forestry aggregate pits.

Best Management Practices

- New aggregate pits should not be constructed within 10 m of known nests containing eggs.

i. Nests of songbirds or other small birds containing eggs or young encountered during forest management operations

Description

- Known nests of songbirds or other small birds containing eggs or young encountered during the development of forestry aggregate pits.

Standard

- Known nests of songbirds or other small birds containing eggs or young encountered during the development of forestry aggregate pits will not be destroyed.

Guidance to Forest Operators

- Reasonable efforts will be made to minimize disturbance of known nests of songbird or other small birds containing eggs encountered during the development of forestry aggregate pits

Best Management Practices

- New aggregate pits should not be constructed within 3 m of known nests containing eggs or young.

j. Dens of furbearing mammals (other than red foxes, skunks, wolves, and wolverines) in caves, excavated burrows, under large piles of coarse woody material, or other enduring features

Description

- Dens in caves, excavated burrows, under large piles of coarse woody material, or other enduring features that are known to have been occupied by furbearing mammals (other than red foxes, skunks, wolves, and wolverines) at least once within the past 5 years.

- Direction applies to dens known before, or found during, operations.

Standards

- New aggregate pits are not permitted within 20 m of the den entrance.

Guidance to Forest Operators

- Aggregate extraction is not permitted within 20 m of occupied dens except in extraordinary circumstances, forest management activity will be permitted with written rationale and MNRF approval:

    1. Where there are conflicting timing restrictions on operations during critical period (e.g. delays to hauling operations that would require removal of water crossings during restricted period, winter or limited access to conduct silvicultural activities)

    2. There is a high risk that merchantability of wood will be compromised (e.g. skidding of wood harvested in AOC prior to the discovery of a nest site, or wood remaining at roadside through the AOC)

k. Dens of furbearing mammals (other than red foxes, skunks, wolves, and wolverines) in tree cavities, hollow logs, brush piles, or other transitory features

Description

- Dens in tree cavities, hollow logs, brush piles, or other transitory features that are known to be occupied by furbearing mammals (other than red foxes, skunks, wolves, and wolverines) and that are encountered during the development of forestry aggregate pits

Standards

- Known occupied dens encountered during the development of forestry aggregate pits will not be destroyed

Guidance to Forest Operators

- Reasonable efforts will be made to minimize disturbance of furbearers occupying known dens encountered during the development of forestry aggregate pits

Best Management Practices

- New aggregate pits should not be constructed within 3 m of dens known to be occupied.

Module 4

Water Crossing Planning, Design and Installation – Conditions and Procedures (SSG and DFO)

for the

2021-2031 Nagagami Forest Management Plan

1 **Conditions to the Construction and Maintenance of Water Crossings**

The conditions and procedures in this module are applicable to all water crossings (i.e., temporary and permanent) and all road categories (i.e., primary, branch, operational) unless more specific information is provided (e.g., direction is for a temporary, winter-only crossing) in individual Culvert Sizing Report Appendix 1 Forms. In order to minimize any adverse environmental impacts, the operator's construction, mitigation, and maintenance practices are to be undertaken in adherence to the following mandatory requirements and range of construction and mitigation techniques.

Water Crossing Review with Respect to the Fisheries Act

The Ministry of Natural Resources and Forestry/Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings, 2017 (the Protocol) provides a risk-informed Proponent self-screening approach for lower-risk water crossings that utilizes pre-determined and mandatory technical water crossing standards to direct routine water crossing construction and decommissioning activities in a manner that protects the productivity of Ontario's **C**ommercial, **R**ecreational or **A**boriginal (CRA) fisheries or fish that support such a fishery. The water crossing standards represent minimum levels of performance requirements that must be met by the proponent when constructing and decommissioning water crossings using a proponent self-screening approval framework. The conditions and requirements included in the general and specific water crossing standards have been deemed as the necessary mitigation measures required to classify the water crossing project as not likely to result in serious harm to CRA fisheries or fish that support such a fishery.

- If a proponent determines that the requisite water crossing standards that apply to their specific project can be implemented, they may proceed with their activity, so long as the water crossing standards notification requirements are met, and forest management approval processes outlined in this Module.

In cases where a Proponent determines that the requisite water crossing standards that apply to their specific project cannot be implemented, a review and approval will be required by either MNRF and/or DFO as per the Protocol.

Low Risk Category

- When a *Low Risk* status has been assigned during the review, the assessment will remain conditional on the assumption that the following conditions have been adhered to during installation:
    a. Use of the correct opening size provided by the sizing calculations that formed part of the review. These will reduce fish passage issues related to water velocities.
    b. Use of trained and capable staff during the locating and installation of the crossing.
    c. Use of installation, erosion and sediment controls that are provided by means of the Standard Operating Practices as presented in this toolkit.
    d. Restricting in-water work to those timeframes identified for specified fisheries encountered.

- When a *Low Risk* status has been assigned during the review, the assessment will remain unaffected and no further assessment will be required if any of the following changes are made to the basic installation:

    a. Change to a less intrusive structure type that reduces or eliminates work in-water outside the timing restriction. Specifically, a culvert to temporary bridges, arch

culverts, box culverts or snow and ice crossings types.

b. Change to a less intrusive structure type that eliminates work in-water during timing restrictions. Specifically, temporary bridges, arch culverts, box culverts and snow and Ice crossings.

c. Change to a less intrusive structure type that eliminates work in-water during timing restrictions (i.e. temporary bridges or equipment only crossings) until after the restriction is lifted and subsequent work in water can proceed (i.e. Corrugated Steel Pipes - CSP)

- In those cases where a change of structure type from a less intrusive structure to a more intrusive structure type (i.e. bridge to culvert) then the crossing must be re-evaluated.

- Forest Operators must also reference and ensure that the final structure type selected is consistent with the *Use Management Strategy* for the road.

Medium /High Risk Category

- If a crossing is deemed as medium or high risk through the Fisheries Review the MNRF biologist must be contacted to discuss potential mitigation. In consultation with MNRF, operators can reduce the Risk Evaluation determination from *High/Medium* to *Low* in those instances, by altering or adjusting the work plan to mitigate the potential risk. Three options exist:

    1. On certain watercourses, a change in structure type or avoiding work in water or alterations to the streambed can also be used to reduce the risk ranking (e.g. dry install, culvert versus temporary bridge or arch culverts etc).

    Or

    2. Site visit carried out by MNRF to determine if the crossings are potentially low or high risk.

    Or

    3. Where the operator opts to move the crossing location to a new location within the acceptable crossing variation segment of the stream.

- If these investigations continue to support a high-risk status then the proposed crossing will be submitted to DFO for review and issuance of a specific “letter of advice’ or ‘authorization”.

Proposed Crossing Location Approvals

- Individual fish habitat risk evaluation will be completed during FMP and confirmed for AWS implementation. Approvals are required on stream crossings within operating blocks and for the construction of new access roads and stream crossings through unallocated stands.

    a) Refer to the allocation map for specific locations and acceptable variations to crossing locations and the individual *Appendix 1: Form for Submission of Information on a Proposed Crossing* for specific operating conditions (i.e. structure type and sizing, in-water work restrictions, removal requirements etc.).

    b) On roads where work is required for crossing improvements, the segment of stream that transects the operational zones or primary and branch corridors will specify the location of the crossing and sizing. Corridors provided on the *Areas Selected for Operations* maps have had the preliminary water crossing review protocol (i.e. fish habitat risk evaluation) carried out by MNRF Biologist. Proposed water crossing or construction conditions for each operating year will be noted in AWS Table 1 in the AWS. As well an opportunity to include any new conditions additional to those

detailed above under the standard operating conditions can occur, if required, during the AWS review (e.g. new stream value identified). The water crossings listed in this table will be symbolized on the allocation maps for use by operators.

c) On roads where work to carry out crossing improvement is known during the submission of the AWS, a point specific location of the crossing will be provided on areas selected for operations maps so that the water crossing review protocol (i.e. fish habitat risk evaluation) can be carried out by an MNRF Biologist and any conditions additional to those detailed above, can be noted in table AWS-1, if required. Any existing road that is outside an operating block or that is subject to maintenance activities will be symbolized on the overview map for use by operators.

Engineering and Environmental Safety Considerations

- The submission, review and approval of water crossings built under authority of the CFSA will comply with the requirements of the FMP and all other applicable legislation.

    - Emergency repairs to existing crossings associated with assigned roads would be considered as "emergency repair" without the necessity of a fish habitat review if the review is not immediately available and if the new installation or upgrade does not change the location or outline of the existing structure and occurs during permitted timing window (i.e. no increase in HADD associated with the work).

- Water crossing structure sizes will have been determined through the use of GIS technology incorporating the method used in the NEST "Culvert Sizing at Water Crossings Manual" (i.e. *Engineering –Northeast Region MNRF (04/98)* and will be based on the location selected and indicated on the *Areas Selected for Operations* maps.
    a. A final crossing report on opening size requirements will be provided to operators prior to commencement of operations which will provide them with the acceptable sizing parameters at each location for single and multiple corrugated pipes.
    b. Sizing parameters for permanent and temporary bridge structures will be consistent with direction provided in the *Crown Land Bridge Management Guideline*.
    c. Details for each crossing will be documented and kept on file at the FRMG office .
    d. For the purposes of the water crossing review protocol (i.e. fish habitat risk evaluation) use of either a one or two corrugated pipe configuration will be permitted before there is a change in the risk assessment status (i.e. Low to High).

- All permanent culvert crossings shall be sized to a minimum Q25 design flow standard. A minimum culvert diameter size shall be **450 mm** for all water crossings. In those cases where the culvert will be removed then sizing will be based on the NEST recommendations:
    1. Q25 – permanent installation
    2. Q-10 – 2 years and then remove (i.e. primarily to permit silvicultural work to continue)
    3. Q-5 – removed by March 31stor spring freshet (whichever comes first)

- All bridge crossings shall be sized to a minimum Q25 design flow standard or as amended in the *Crown Land Bridge Management Guideline*.

- All temporary winter bridges that will be removed before the spring freshet are not required to be designed for the 25-year flood (Q25)

Submission of Information on a Proposed Crossing

In support of risk evaluation process described in *The Ministry of Natural Resources and Forestry/Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings, 2017 (the Protocol)* and subsequently described in this document as the 'fisheries review':

- The implementation of water crossing standards must be overseen or carried out by individuals who are trained and competent to:
  - Understand the intent and objectives of the specification's standards;
  - Ensure that specification's water crossing standards and appropriate mitigation measures are satisfactorily applied; and
  - Recognize when water crossing standards and appropriate mitigation measures have not been satisfactorily implemented and understand the requirements to report and correct any mistakes that have occurred.

- Submission of crossing installation details will use the reverse side of the *Appendix 1: Form for Submission of Information on a Proposed Crossing* for. *Principles for* its use are as follows:

  - This toolkit will serve as the sediment control plan (SCP) document for all installations unless:
    a. Site specific mitigation measures or site-specific sediment control plan has been agreed to and documented under the Appendix 2 section of the water crossing form

    Or

    b. MNRF has requested a site-specific SCP. The requirement for a site-specific SCP will be indicated under the MNRF Appendix 2: Biologist Risk Evaluation section of the water crossing form.

  - Unknown fisheries values will be protected using the timing restrictions for Unidentified Fisheries (i.e. permit work during approved timing restriction of the nearest thermal regime if obvious link to an identified fisheries exist).

  - Any changes to the proposed road location that falls outside the identified 'Area of Operations' will require a revision to the AWS, as per the normal review procedure.

  - For all *Low Risk* crossings there is no site-specific mitigation proposed/suggested unless identified through fisheries review. The individual crossing details are presented in the AWS Tables 1 and *MNRF Appendix 2* review comments also serve as the sediment control plan for each crossing.

- Once the site is reached and the operator carries out the required work, documentation of the installation results will be included under the *Crossing Installation Report* section of this form. This requires that each of the attributes noted in the *Erosion Prevention and Control* and *Water Crossing Activity Checklist* section of the form be considered and mitigated as required using the best practices.

- Each crossing will have a final inspection by a certified Forest Inspector.

- All crossings will be installed consistent with the standards described under *Standard Operating Practices for Roads and Water Crossings* in this document. As well, installation will consider the work practices in the NEST Technical Note #13*CSP Culvert Installation at Water Crossings on Forest Access Roads* as good management practices. It is expected that 'wet' installation will be the normal practice during installations but as part of normal operations the operators will provide for partial dewatering (i.e. isolated flow with fill material at both ends immediately once pipe is in place) and consider the use of any of the appropriate "best practices" as indicated in the *Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (SSG)*.

- For larger watersheds, the number of culverts permitted could be up to five (5) pipes. This is not the preferred option, therefore, for any installation that will utilize more than one CSP, will require a reassessment of risk to fish habitat by area MNRF Biologist prior to installation.

- For watersheds of streams less than one (1) square kilometre a culvert with a minimum opening size of 450mm will be used.

Standards for the Design and Location of Water Crossings

- The water crossing project does not include watercourse realignment.

Water crossing projects are designed and constructed in a way that minimizes loss or disturbance to riparian vegetation. The removal of riparian vegetation must be restricted to the disturbance footprint required for the construction, maintenance and decommissioning of water crossings. Site-specific operational and/or safety concerns that warrant the removal of additional riparian vegetation will be determined on a case-by-case basis and will be kept to a minimum within the road right-of-way in order to help maintain the stability of watercourse banks.

- Selection of the type of water crossing structure, its location and its capacity to pass water and allow for the movement of fish, will consider:
    a. Possible negative effects on the form and function of the undisturbed natural channel and its floodplain;
    b. The fish species present and the impact of the crossing structure on them, as required by the Fisheries Act; and
    c. Whether the water crossing is over navigable waters.

- Avoid crossing in areas which affect known critical fish habitat, such as fish spawning, feeding, over-wintering, or nursery areas.

- Avoid steep high banks or sites where actively slumping banks are evident.

Best Management Practices

- Choose a site where the road approaches are favourable and earth cuts are not required within 100 m of the water's edge.

- If past or present beaver activity is identified at a crossing location, change the crossing location (preferably upstream of the area with beaver activity), or include mitigative techniques to address the probability beavers will return to the site.

- In the case of existing roads, efforts will be made to maintain the original centerline of the road where practical and feasible with mitigative techniques used to address the probability of beavers returning to the site (i.e. nuisance beaver protocol).

Standards for Water Crossing Installation and Maintenance

- Those responsible for installation and maintenance will monitor operations and select operating practices, materials, and mitigation techniques at each water crossing to protect the productivity of Ontario's commercial, recreational or Aboriginal (CRA) fisheries or fish that support such a fishery. For forest management activities carried out under the CFSA, MNRF has only referred those water crossing proposals to DFO where a potential CRA fisheries impact is likely and the impacts to fish and fish habitat cannot be mitigated.

- The installation of a water crossing will not result in the impediment of fish passage; mitigative techniques will be applied if the structure has the potential to impede or block fish migration or passage.

- At any time of year, the free movement of water and fish will not be blocked or otherwise impeded, except for brief periods during construction and as approved by MNRF (i.e. refer to *Appendix 1: Form for Submission of Information on a Proposed Crossing*).

- The removal of stream boulders is generally not acceptable, except where necessary for installation of a crossing structure which retains a natural streambed (e.g., a bridge).

- Erosion and sediment control measures must be installed prior to the commencement of construction or decommissioning activities to prevent the release of sediment or other deleterious substances to the watercourse.

- Construction operations that may enter a water feature (i.e. in-water work) or that may potentially cause sediment to enter a water feature are not to occur during periods of fish spawning, incubation, or fry emergence, unless approved by MNRF. Timing restrictions are provided in FMP.

- If warranted, local MNRF offices can vary timing dates and mitigative measures based on local knowledge (e.g. work during the timing restriction may be permitted if pre-approved under certain circumstances by MNRF).

- Fill material required to build the road at the site of the crossing, below the high-water level and within the floodplain of the water feature, will be erosion resistant and/or protected from erosion.

- Any exposed mineral soil between the height of land and the water crossing, or within 100 m of the water crossing, whichever is less, will be trimmed to a stable angle and be protected from erosion so sediment will not enter water.

- During construction and maintenance of a water crossing, contamination of a water feature by foreign materials such as lumber, nails, fuel, oil, or herbicides is not permitted (the crossing structure itself, including temporary crossings, can be in the water, if the approved design allows for this).

- Prevent sediment from entering the water features by using erosion and sediment control techniques.

- Blasting in or near water produces shock waves that can kill fish and will normally be avoided. Blasting with a potential impact on fish or fish habitat will only be done following approval from DFO.

- Upon completion of a water crossing, any temporary fill, culverts, refuse, etc. will be removed from the construction area and properly disposed of in a satisfactory manner.

- After construction, on-site inspections will be made by the licensee or contractor to confirm these standards are being met. Site will be maintained until it has become stabilized through the permanent re-establishment of vegetation (i.e., a root mass has been established that ensures site stabilization), either naturally or through planting and tending activities within disturbed areas and approaches, and/or they have been stabilized with rip-rap, or appropriately sized non-erodible aggregate material.

- If using temporary winter-only crossings, materials other than ice and snow will be removed from the stream prior to spring break-up.

- Upon installation, each new water crossing will be incorporated into the approved program for monitoring roads and water crossings.

- These standards are applicable to previously installed water crossings when they are replaced or upgraded due to sub-standard safety, environmental, or operational reasons.

- Use techniques and materials appropriate for the conditions encountered at each water crossing, to minimize disturbance of a water feature and significantly reduce the potential for erosion and sedimentation.

- Ensure logs and brush which may need to be removed or trimmed at the crossing site do not enter the water feature.

- Grubbing of low vegetative cover between the height of land and a water crossing, or within 100 m of a water crossing, whichever is less, will be limited to that required to address engineering issues and safety concerns, such as the removal of hazards.

- When diverting and/or removing water for dry installations, chase away or trap and relocate live fish before completely dewatering the area.

- Apply mitigative techniques to provide for fish passage if there is potential to impede or block fish migration during installation of the crossing.

- Begin site stabilization and clean-up as soon as possible after the water crossing has been installed, including the removal of all diversions.

- Trim fill slopes to a stable angle, or use other mitigative stabilization techniques. A person should be able to walk up the slope without causing slumping and sliding of soil particles. When a temporary channel is no longer required, it should be stabilized to avoid long-term erosion.

- Construct and use fords during the driest time of the year but not during the restricted time of high risk to fish; ensure the ford does not restrict fish passage. Adhere to DFO's self assessment of project activities and criteria where DFO review is not required.

- If machinery fording the watercourse is required during the course of construction activities, it will be limited to a one-time event (over and back) per piece of equipment that is essential to implementation of the project, and must occur only if an existing crossing at another location is not available or practical to use.
    - If minor rutting is likely to occur, watercourse bank and bed protection methods (e.g., swamp mats, pads) are to be used provided they do not constrict flows or block fish passage;
    - Grading of the watercourse banks for the approaches is not permitted;
    - If the watercourse bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation are likely to occur as a

result of equipment fording, a temporary crossing structure or other practice must be used to protect these areas;
    - The one-time fording must adhere to the appropriate in-water timing windows; Fording must occur under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.

- Material used within the stream and on the banks to improve the crossing will be clean, non-erodible, and non-toxic to aquatic life.

- Install culverts on a straight section of stream. When installation of a culvert on a straight section of stream is not possible, minimize the change in stream morphology and impacts on fish habitat.

- Replace or correct existing water crossings that pose a risk to public safety or fish passage or fish migration using the guidance and advice provided in MNRF and forest industry's Forest Roads and Water Crossing Initiative Task Team Report.

Bridge Installations

- Licensees will follow the mandatory standards provided for in the *Crown Land Bridge Management Guidelines (2009)*.

    - The bridge owner will forward a copy of the standard bridge design drawings for the structure and substructure of bridges (i.e. portable or permanent bridges) that are to be used on the Nagagami Management Unit for the bridge file.

    - The bridge owner will maintain on their bridge file, a copy of the record of site conditions and engineered approved drawings (sealed) on all structures (i.e. portable or permanent bridges and culverts) that have a 3m or greater water crossing span.

    - Licensees will forward the *Bridge Design Record Form*, as outlined in the *Crown Land Bridge Management Guidelines*, to Ministry of Natural Resources for their files prior to installation.

    - Portable bridges listed in AWS will be inspected yearly by a competent inspector prior to being used. Portable bridges will be inspected prior to installation and if any structural damage is noticed which might affect the integrity of the structure, the bridge will not be installed. Copy of the inspection will be maintained on file as per *Crown Land Bridge Management Guideline* requirements.

    - Portable bridge crossings for winter use (i.e. removed by March 31st) will be selected depending on site-specific conditions as determined by aerial photography, aerial assessment flights and/or ground assessments. Winter crossings using portable bridges that span over streams that are wider than 3 metres require the use of a standard engineered bridge. Bridge installations will be installed to a minimum of Q5 (approximately 50cm above the ice surface).

    - The Licensee shall keep bridges clear of road material to minimize debris falling into the watercourse through active maintenance (e.g. sweeping aggregate back onto roads)

Best Management Practices

- Use instream sediment control techniques to isolate working equipment from shallow open water. A good reference source is MNRF's *Instream Sediment Control Techniques - Field Implementation Manual (1996).*

- Establish a maintenance schedule to keep culverts clear of obstructions to help avoid potential problems, particularly washouts and obstruction of fish passage.

- Nuisance beaver activity should be managed to keep culverts clear and provide for the passage of water and fish. Follow Decision Tree provided by district MNRF.

- On large streams (i.e., streams >2 m wide), consider crossing with a bridge or arch (open-bottom) culvert. Bridges and arches have a higher initial cost, but are less prone to washouts and beaver problems than complete (e.g., round) culverts.

- To facilitate fish passage, install culverts with at 10 % of the diameter of the culvert below the natural stream bed where possible.

- Maintain vegetation on the approaches and fill slopes by re-seeding of gaps or by placing sediment and erosion controls on road cuts and fills where problems occur.

- Culverts are not recommended for use as temporary, winter-only, water crossings and require prior MNRF biologist approval. Structures and techniques such as temporary bridges, ice bridges, and snow fills are normally more appropriate and approved as part of the fisheries review process.

General Crossing Installation Procedures

The information for each crossing will be available to licensees involved in the crossing installation. They will evaluate the risk prior to structure installation and during snow-free conditions as appropriate. Re-evaluation of risk before crossing installation is an important component of a due diligence approach. Documentation of the re-evaluation results will be included under the *Appendix 1: Form for Submission of Information on a Proposed Crossing* for specific crossing. If conditions at the site are different than what was understood to be present during the risk evaluation and/or site visit the risk may be different and the construction practices should be modified to reflect current site conditions consistent with the following direction. The operator will use the procedures listed below.

Procedure

The following procedure describes general installation techniques for all watercourse crossing structures.

1. Licensee checks to ensure that all required approvals and/or permits are in place. Reads and understands the terms and conditions of the permits and approvals. In the event of an un-identified stream value or incorrectly mapped stream operators will adhere to the Change to Value protocol specified in FMPM.

2. Ensure the crossing location has been located as per the approved location in the FMP/AWS.

    - The ROW within the slope-based water/fisheries quality AOC must not be greater than prescribed in FMP.

    - Determine the materials required (i.e. pipe length, rip rap, fill, etc.)

    - Where an unmapped stream is encountered that is not identified on the operational FMP map, a Company field inspection is required to determine the presence of a defined stream channel. The identification of a defined channel will determine if the watercourse is a stream or surface drainage. The field inspection is to occur at least 100 meters up & downstream from the proposed crossing location. Where it is determined that a stream does not exist, the operator can proceed. Notification will be consistent with 'Change to Operation' protocol.

    - The crossing size will be determined based on the *Appendix 1: Form for Submission of Information on a Proposed Crossing* as a minimum or sized larger based site characteristics encountered. Proper installations will apply as per the *Crossing Installation Procedure by Type* found in this module. Operators should refer to the *Crown Land Bridge Management Guidelines* for estimating bridge opening areas to pass Q_{25}.

    - Where realignment or channelization is considered beyond that necessary to properly install the culvert a further risk assessment for fisheries may be required under the '*The Ministry of Natural Resources and Forestry/Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings, 2017 (the Protocol).* Realignment and channelization outside of the culvert footprint will likely result in CRA fisheries impact and may require DFO review.

3. Contractor constructs sub-grade according to the following:

- Clearing and grubbing within 100m of the water crossing must be kept to the absolute minimum necessary. Exposed mineral soil within 100m of the crossing must be graded to a stable angle of repose and appropriate erosion control measures must be taken.
- Prior to any in stream work the contractor must ensure that the equipment is clean and has been inspected for leaks.
- Do not clean equipment within 100m of a water body.

4. Licensee installs structure according to the standards discussed in the *Appendix 1: Form for Submission of Information on a Proposed Crossing* and any pre-work meeting.

5. Once the structure has been installed, stabilize the cut and fill slopes around the structure (2:1 slope or the stable angle of repose for the materials used) use one or more of the following methods for erosion control:

    - Re-vegetation of the slopes, approaches, and / or ditch-lines near the crossings.
    - Rip rap to protect the culvert inlet and outlet and adjacent slopes.
    - Rip rap to protect cribbing and abutments of bridges.
    - Siltation fences placed along the stream-bank edge to control deposition.
    - Divert ditch-line run-off away from the watercourse.
    - Place slash debris or straw mats over exposed mineral soil.

6. Where necessary, control erosion and siltation in ditch lines adjacent to stream crossing approaches. Consider using sediment traps such as rock/soil dams, hay bales, silt fences, log jams, etc. Sediment control measures will remain outside of the AOC where practical and feasible. In those cases, where sediment control measures are required within the AOC, every effort will be made to minimize work and operators should incorporate applicable standards during work as identified in this document.

7. Install bridge warning signage and bridge markers, if a bridge is installed.

8. Remove all debris from the site and dispose in an approved manner.

9. Licensee conducts an inspection of the crossing; ensure the crossing was built to the desired specifications.

10. The Forest Operations Inspector conducts inspection of the site to confirm standards and submits access report into FOIP.

Water Crossing Decommissioning and Rehabilitation

General Standards

- If decommissioning of a road or road system is being considered, all water crossings on that road or road system will be assessed. Water crossings that will no longer be maintained will be formally decommissioned in an environmentally sound manner and approved by MNRF. Decommissioning may or may not require removal of a water crossing.

- During decommissioning, workers will prevent contamination of a water feature by foreign materials such as lumber, nails, logs, brush, fuel and oil.

- Decommissioning and rehabilitation operations that may enter a water feature (i.e., in-water work) or that may potentially cause sediment to enter a water feature, are not to occur during periods of fish spawning, incubation, or fry emergence, unless approved by MNRF.

- The proponent responsible for decommissioning of water crossings will monitor operations and mitigation techniques to prevent the harmful alteration, disruption, or destruction of fish habitat, the impairment of water quality, and, problems related to fish passage.

- Fill material placed below the high-water level within the floodplain of a water feature will be erosion resistant and/or protected from erosion.

- Any exposed mineral soil between the height of land and the water crossing, or within 100 m of the water crossing, whichever is less, will be trimmed to a stable angle and be protected from erosion so sediment will not enter the water.

- Upon completion of decommissioning, any temporary fill, culverts, refuse, etc. will be removed from the construction area and disposed of in a satisfactory manner.

- Following decommissioning, on-site inspections will be made by the proponent to confirm the standards are being met with information provided to the SFL.

- For decommissioned water crossings that have not been removed, have a monitoring program to identify and mitigate safety and environmental issues.

Crossing Installation and Decommissioning Procedures by Type:

Additional crossing information specific to each type of crossing installation follows:

Engineered Crossing Structures

Water Crossing Standards for the Construction of Single, Small Closed-Bottom Round Culverts

[AWS Table 1 Identifier - CULV]

This water crossing approval specification applies to the construction of single, round, corrugated, closed-bottom steel, aluminum, or plastic culverts that are less than or equal to 1200 millimeters (4') in diameter and do not require site-specific engineering approval (i.e., span less than three (9.8')), as per MNRF's Crown Land Bridge Manual, 2008.

- General Standards:
  - The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.
  - The project does not:
    a. Replace an existing open-bottom crossing (e.g., clear span bridge, arch culvert);
    b. Replace an existing closed-bottom culvert that is larger in diameter than that being installed; or
    c. Involve the installation of more than one closed-bottom culvert at the crossing location.

- Design and Location
  - Culvert crossings must be located, designed and constructed to minimize the likelihood of ongoing outlet scour, culvert undermining and/or the erosion of fill in order to provide for stable and non-perched crossing sites that can provide for fish passage.
  - The culvert must not be located on meander bends, braided watercourses, alluvial fans, or any other area that is inherently unstable and may result in the alteration of natural stream functions or erosion and scouring of the crossing structure.
  - In cases where an unmapped watercourse is encountered during the construction of a road, and where a proper watershed analysis cannot be completed to determine the Q25 design flow, the culvert must be sized to ensure that it spans from bank to bank within the watercourse. For crossing of unmapped streams that meets a standard then the company can proceed with implementation once the Appendix 1 form has been submitted to MNRF. For crossing of unmapped streams where the crossing does not meet a standard (i.e. cannot be self assessed), the company can only proceed once the risk assessment has been received from MNRF. A single year-end revision will be completed to update AWS Table 1 to document these MNRF review results.
  - Culverts must not be installed where the channel slope at the crossing location (i.e., physical rise over run of the culvert footprint prior to construction) is of a gradient greater than 2.0%.
  - Culverts must not be installed where the slope of road approaches or either of the bank approaches is greater than 30%/17˚.
  - Crossing locations must be selected where culverts can be embedded below the grade of the watercourse bed. The amount of embedment should be determined by local conditions.

- Erosion and Sediment Control
  - Appropriate site-specific mitigation measures must be enacted to ensure the construction of the culvert crossing does not result in the ongoing erosion of fill. At a minimum, measures must include:

        - Both the inlet and outlet ends of the culvert must be stabilized with appropriately sized non-erodible material (e.g., rocks, cobble sized stones) to prevent erosion of the fill slope and the watercourse bed. Rock used to stabilize crossings and watercourse banks must be clean, free of fine materials and of sufficient size to resist displacement during peak flood events. The rock shall be placed at the original watercourse bank grade to ensure that there is no infilling or narrowing of the watercourse.
        - Fill material placed below the normal high-water mark of the watercourse must be erosion resistant and/or protected from erosion.

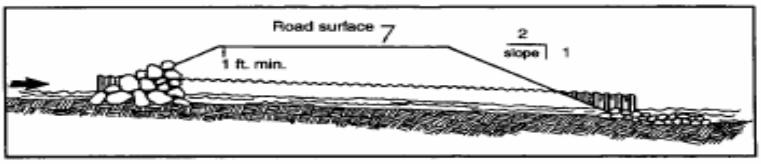
- CRA fisheries or fish that support such a fishery
    - The project must not be located within 100 metres of fisheries spawning or sensitive habitat.
    - The project must not be located within 500 metres of any brook trout spawning or upwelling areas.
    - The project must not be located on any watercourses or tributaries that flow into, and are within 500 metres, of known naturally reproducing brook trout lakes.
    - The combination of culvert size, length, slope and drainage area will not create accelerated water velocities that will consistently and predictably impede the passage of fish.

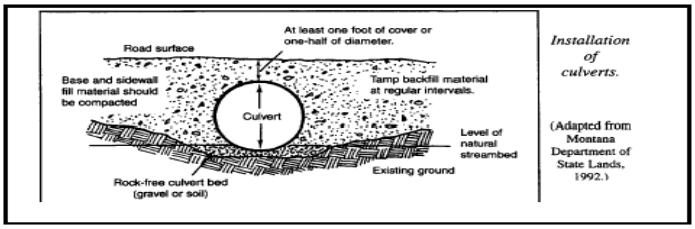
- Construction and Maintenance
    - The crossing must be installed under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
    - Both the interior and exterior of round, closed bottom culverts that are installed on CRA fisheries or fish that support such a fishery waterbodies must be corrugated to ensure structural stability and facilitate fish passage.
    - The grade of the culvert must reflect the grade of the natural watercourse bed.
    - Backfill must be adequately compacted around the culvert. Only clean sand or gravel can be used as backfill and must be compacted around the culvert in layers.
    - Culverts must be the correct length to permit banks to be sloped at an angle of 2:1 or a stable angle of repose for the materials used.

- Winter Culvert Installations: Use of any winter culvert crossings is an exception and is not a preferred option. Alternate crossing options must be considered. However, there may be cases where winter culverts are desired. In these cases, prior approval must be given by the MNRF. A winter culvert crossing approval must be documented through an AWS revision that details rationale, appropriate construction and monitoring practices.

The following diagrams provide some suggestions for culvert installations on streams.

Install culverts so there is no change in the natural stream bottom elevation.





Installation of culverts.

(Adapted from Montana Department of State Lands, 1992.)

Water Crossing Standards for the Decommissioning of Single, Small Closed-Bottom Round Culverts

[AWS Table 2 Identifier - CULV]

This water crossing approval specification apply to the decommissioning of all round, closed-bottom steel, aluminum, or plastic culverts that are less than or equal to 1200 millimeters (4') in diameter (DFO Protocol).

- General Standards: The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.
    - Decommissioning of water crossings will only occur if it is consistent with the approved road use management strategy in the applicable FMP and is scheduled for decommissioning in the current AWS (Table AWS-2).
    - If the construction of the crossing was originally reviewed and approved by MNRF and/or DFO, all applicable conditions of approval must be fulfilled.

Erosion and Sediment Control:

- Upon decommissioning, the site must be stabilized and protected against erosion. Approaches to the watercourse should be stabilized at a 2:1 slope or stable angle of repose for the materials used using site appropriate methods.
- All exposed soil must be seeded with an appropriate seed and/or stabilized immediately following completion of activities. Erosion and sediment control measures must be appropriate for the site conditions and maintained until vegetation has become permanently re-established within disturbed areas and/or exposed mineral soils have been stabilized with rip-rap or appropriately sized non-erodible rock material.
- Materials removed or stockpiled during decommissioning (e.g. grubbing, overburden fill) must be deposited outside the floodplain and stabilized/protected against erosion to ensure material does not enter the watercourse.
- Surface water runoff and road approaches and ditches must continue to be directed away from the watercourse and into vegetated areas. Diagonal berms or waterbars must be installed where the erosion potential of the road approaches is likely to result in the road's gravel surface and underlying fill being deposited into the watercourse over time. Sediment traps used within ditch lines adjacent to the watercourse crossing approach must be replaced and/or maintained to their original condition prior to the construction of the crossing.
- Appropriately sized erosion-resistant materials must be used below the normal high-water mark for stream bank rehabilitation.
- CRA Fisheries or Fish that Support Such a Fishery
- The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

Construction and Maintenance:

- The crossing must be decommissioned under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
- The watercourse must be restored as closely as possible to its original condition prior to the construction of the crossing, including retaining as close as possible the original stream alignment.
- All crossing infrastructure must be completely removed from the site.
- Grubbing must be minimized to leave as much of the existing vegetation intact.

Water Crossing Standards for the Construction of Open Bottom Arch Culverts

[AWS Table 1 Identifier - ARCH]

Standards for the Construction of Open Bottom Arch Culverts

Arch culverts are open-bottom structures that typically span the width of the waterbody channel, require minimal in-water construction activities and result in minimal impacts to the banks of the waterbody. The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

- Design and Location: The arch culvert must not be located on meander bends, braided watercourses, alluvial fans, or any other area that is inherently unstable and may result in the alteration of natural steam functions or erosion and scouring of the water crossing structure.

- Erosion and Sediment Control: Appropriate site-specific mitigation measures must be enacted to ensure the construction of arch culverts and associated footings and fill slopes are not subjected to the impacts of long-term or ongoing erosion. At a minimum, measures must include:
    - Stabilizing the crossing, including footings and fill slopes, with appropriately sized non-erodible material (e.g., rocks, cobble sized stones). Rock used to stabilize crossings and watercourse banks must be clean, free of fine materials, and of sufficient size to resist displacement during peak flood events. The rock must be placed at the original watercourse bank grade to ensure there is no infilling or narrowing of the watercourse.
    - Fill material placed below the normal high-water mark of the watercourse will be erosion resistant and/or protected from erosion.

- CRA Fisheries or Fish that Support Such a Fishery: The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

- Construction and Maintenance
    - The project cannot result in any excavation and/or reconstruction of the streambed.
    - The crossing must be installed under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
    - The culvert must be secured on continuous footings outside of the normal high-water mark and will be constructed according to the manufacturer's specifications using materials that are appropriate for the site and expected loads.
    - Where footings are constructed with concrete, appropriate measures must be taken to ensure concrete materials do not encroach into the bed of the watercourse.
    - The construction of arch culverts must not result in the alteration of the bed or banks of the watercourse or infilling or narrowing of the watercourse channel.

Water Crossing Standards for the Construction of Clearspan Bridges

[AWS Table 1 Identifier - CSPAN]

Construction of Clearspan Bridges

FRL Holders and contractors will follow the mandatory standards provided for in the *Crown Land Bridge Management Guidelines (Feb 2008)*.

- The bridge owner will forward a copy of the standard bridge design drawings for the structure and substructure of bridges (i.e. portable or permanent bridges) that are to be used on the Nagagami Management Unit for the Crown bridge file.

- The bridge owner will maintain on their bridge file, a copy of the record of site conditions and engineered approved drawings (sealed) on all structures (i.e. portable or permanent bridges and culverts) that have a 3m or greater water crossing span.

- FRL Holder will forward the *Bridge Design Record Form*, as outlined in the *Crown Land Bridge Management Guidelines*, to the Ministry of Natural Resources and Forestry for their files prior to installation.

- Portable bridges listed in AWS will be inspected yearly by a competent inspector prior to being used. Portable bridges will be inspected prior to installation and if any structural damage is noticed which might affect the integrity of the structure, the bridge will not be installed. Copy of the inspection will be maintained on file as per *Crown Land Bridge Management Guideline* requirements.

- Portable bridge crossings for winter use (i.e. removed by March 31st) will be selected depending on site-specific conditions as determined by aerial photography, aerial assessment flights and/or ground assessments. Bridge installations will be installed to a minimum of Q5 (roughly 50cm above the ice surface).

This water crossing standard applies to the construction of clear span bridges and their footprints, including associated abutments, cribs and/or sill logs. The conditions and requirements of the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

- Design and Location: Bridges must not be located on meander bends, braided watercourses, alluvial fans, or any other area that is inherently unstable and may result in the alteration of natural stream functions or erosion and scouring of the water crossing structure.

- Erosion and Sediment Control: Appropriate site-specific mitigation measures must be enacted to ensure the construction of clearspan bridges, including bridge cribs, abutments, and associated fill slopes are not subjected to the impacts of long-term or ongoing erosion. At a minimum, measures must include:
    - Clearspan bridges, including bridge cribs and fill slopes must be stabilized with appropriately sized non-erodible material (e.g., rocks, cobble sized stones). Rock used to stabilize crossings and watercourse banks will be clean, free of fine materials, and of sufficient size to resist displacement during peak flood events. The rock must be placed at the original watercourse bank grade to ensure there is no infilling or narrowing of the watercourse.
    - Fill material placed below the normal high-water mark of the watercourse must be erosion resistant and/or protected from erosion.

- CRA Fisheries or Fish that Support Such a Fishery: The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

- Construction and Maintenance: The bridge, including its abutments, must be placed entirely outside the normal high-water mark. The construction of clearspan bridges must not result in the alteration of the bed or banks of the watercourse or infilling or narrowing of the watercourse channel.

The following procedure describes general installation techniques for bridge crossing structures:

1. Approaches to bridge should be straight so as to provide safe vehicle operation.

2. Minimize stream bank disturbance.

3. Align bridge abutments and piers to be parallel with the direction of water flow. Every effort should be made to place abutments outside of the high-water mark wherever possible.

4. Stabilize cribbing structure prior to placing deck.

5. Where possible, place geotextile to prevent siltation passing through the cribbing.

6. Ensure no earth or gravel material is placed on the bridge deck surface during construction or maintenance.

7. The licensee will determine if the stream is navigable or not by referring to the Navigation Protection Act or contacting Transport Canada.

The following procedure describes general installation techniques for portable bridges used for winter crossings. The intent of the following section is to provide general guidance on back fill options only. Standard abutment design drawings are to be used and final condition must not deviate from the approved bridge sill or structure design conditions.

8. Sill logs are placed adjacent to the stream to support the portable bridge. *Note: The abutment is to be founded behind an imaginary 2H:1V line sloping up from the stream bed showing no sign evidence of scouring or erosion on bridges used only outside the frozen winter season.*

9. Corduroy is placed on both approaches to the bridge to allow equipment and vehicles to climb up onto the bridge

10. Approaches will be built up with snow/ice where conditions permit.

11. Gravel may be used to build up the approaches over the corduroy if ground conditions are not frozen. Non-woven geotextile will be installed beneath the gravel. All material spanning the stream is removed by March 31st or spring freshet (whichever comes first) of the operating year. Corduroy that is frozen or embedded into the ground will be left in place so as to not expose mineral soil adjacent to the stream. The corduroy is placed outside of the floodplain to prevent a damming effect on the site. Merchantable wood retained for erosion control must be scaled and reported to MNRF for payment of Crown dues. The non-woven geotextile is removed from the site for disposal purposes. Corduroy that is frozen or embedded into the ground will be left in place as to not expose

mineral soil adjacent to the stream. The remaining snow and ice is left to melt in the spring.

12. Any gravel or debris that is on the crossing or approaches will be collected and moved away from the stream, beyond the floodplain. If required, remedial work will be carried out on the site after the bridge is removed.

Water Crossing Standards for the Decommissioning of Clearspan Bridges

[AWS Table 2 Identifier - CSPAN]

This water crossing standard applies to the decommissioning of clear span bridges and their footprints, including associated abutments, cribs and/or sill logs. In certain cases, local site conditions may create a higher likelihood for potential damage to watercourse banks and/or fish habitat when bridges abutments, cribs, and/or sill logs are completely removed as opposed to leaving them in place. In these cases, Proponents must ensure that appropriate sedimentation and erosion mitigation approaches, in addition to any necessary public safety actions, continue to be implemented.

- General Standards: The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.
    - Decommissioning of water crossings will only occur if it is consistent with the approved road use management strategy in the applicable FMP and is scheduled for decommissioning in the current AWS (Table AWS-2).

Erosion and Sediment Control:

- Upon decommissioning, including the removal of bridge abutments, cribs, and/or sill logs, the site must be stabilized and protected against erosion.
- Bridge abutments and cribs may be left in place if they are in good condition, stable for the long term, are not affecting watercourse or fish community dynamics, and are permissible in the approved FMP and/or AWS-2 table.
- Surface water runoff and road approaches and ditches must be directed away from the watercourse and into vegetated areas. Diagonal berms or waterbars must be installed where the erosion potential of the road approaches is likely to result in the road's gravel surface and underlying fill being deposited into the watercourse over time. Sediment traps used within ditch lines adjacent to the watercourse crossing approach should be replaced and/or maintained to their original condition at the time of crossing decommissioning.

- CRA Fisheries or Fish that Support Such a Fishery: The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

- Construction and Maintenance: The decommissioning of clearspan bridges, including the removal of bridge abutments, cribs and/or sill logs will not result in the alteration of the bed or banks of the watercourse or infilling or narrowing of the watercourse channel.

Snow and Ice Crossings

Water Crossing Standards for the Construction of Snow Fill and Ice Bridge Crossings

[AWS Table 1 Identifier - SNOW]

- Snow fills and ice bridges, two types of less-intrusive water crossings that provide cost-effective access when lakes, rivers and streams are frozen, are typically used for temporary winter access in remote areas. Ice bridges are normally constructed on larger watercourses that have sufficient stream flow and water depth to prevent the ice bridge from coming into contact with the stream bed or restricting water movement beneath the ice. Snow fills, however, are temporary crossings constructed by filling the channel of a watercourse with clean compacted snow.

- General Standards: The conditions and requirements of the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.

- Design and Location: The work must not include dredging, placing fill, or grading or excavating the bed or banks of the watercourse.

- Erosion and Sediment Control: No earth fill or aggregate is permitted below the normal high-water mark of the watercourse. Crossings must be constructed of clean water, ice and snow that are free of dirt and debris.

- CRA fisheries or fish that support such a fishery:
  - Snow fills and ice crossings must not restrict water flow within the watercourse where it occurs naturally during winter conditions, or otherwise completely obstruct fish passage at any time.
  - The project must not be located within 100 metres of fisheries spawning or sensitive habitat.

- Construction and Maintenance:
  - Appropriate seasonal conditions must be present (e.g., adequate depth of snow and ice, winter temperatures) to provide certainty that the construction and removal water crossing standards can be satisfactorily implemented.
  - Aggregate or loose woody material cannot be used to top the crossing.
  - If logs or corduroy are used to stabilize the approaches of ice and snow fill crossings:
    - The logs must be clean;
    - The logs may be securely bound together to facilitate removal and minimize site disturbance;
    - No logs or woody debris can be left within the watercourse;
    - Corduroy (if used) adjacent to the watercourse banks must be removed and placed outside the floodplain to help prevent a damming effect on the site. Corduroy that is frozen or embedded into the road approaches or watercourse banks must be left in place so as to not expose mineral soil adjacent to the watercourse. The remaining snow and ice can be left to melt in the spring. If required, remedial work will be carried out on the site after the crossing is removed to ensure that no logs or woody debris can wash back into the watercourse.
    - Logs may be placed on road approaches to assist in diverting runoff away from the watercourse; however, they must be placed outside of the floodplain and in such a manner as to ensure that they do wash back into the watercourse.

- Sanding of snow and ice crossings must be kept to a minimum and within the bounds of operational health and safety considerations.
- Corduroy logs or brush mats must be installed on the approaches to the watercourse crossing when conditions are soft in order to avoid disturbing the banks and crossing approaches.
- If water is being pumped from a watercourse to reinforce the crossing, the intakes must be sized and adequately screened to prevent debris blockage and fish entrainment.
-

The following procedure describes general installation techniques for Snow and Ice Winter Crossing Installations:

1. Harvesting equipment will install corduroy or brush mat on the approaches to the stream crossing to avoid disturbing the site when ground conditions are soft. Avoid using merchantable or marketable wood for corduroy as much as possible.

2. On solid ground and heavy snow conditions, equipment will create a snow pack without the use of corduroy, and will travel on top of the snow pack.

3. Snow is pushed onto the crossing; beginning approximately 10 meters back from the stream and is packed down.

4. If a corduroy brush mat is used over the stream, it must be installed above the geotextile.

5. Snow pack is then flooded using water pumps drawing water from the stream, or if the water flow would be minimal, to no flow importing water using a truck. This second option would be used if the water flow would be already minimal for fisheries concerns as determined by MNRF. The crossing is then allowed to freeze then it is compacted and re-flooded until frozen solid. Water is not to be taken from locations with standing water and if taken from local watercourse, should be within the same system. Strive to ensure no CRA fisheries impact occurs.

6. After operations are completed in the area and before Spring freshet or by March 31st (whichever comes first) of the operating year, the material above the non-woven geotextile and any merchantable wood that was used for corduroy are removed and placed outside the floodplain. Geotextile is to be disposed of in approved waste disposal site. In some cases this timing can be extended beyond April 1st on approval from MNRF, where conditions at the end of the operating season are favourable and no adverse effects are expected (i.e. material more easily removed during lower snow cover or to extend hauling). In all cases, removal of this material is to prevent a damming effect on the site. Merchantable wood retained for erosion control must be scaled and reported to MNRF for payment of Crown dues. Mitigative measures will be taken to so that materials left in place will not enter the water body once freshet occurs. The remaining snow and ice is left to melt in the spring. If required, remedial work will be carried out on the site after the crossing is removed.

Figure 1a:

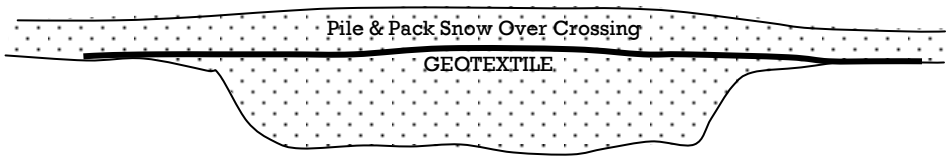
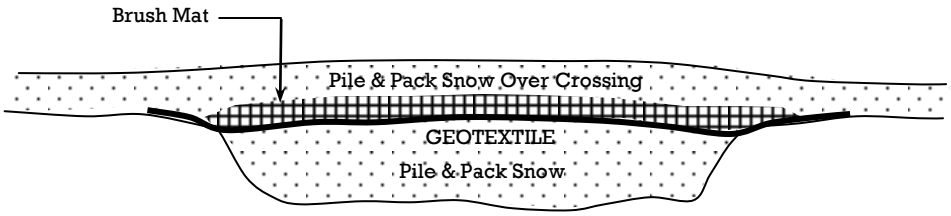


Figure 1b:



Non-Road Water Crossing Equipment

(Equipment Only Crossings for Temporary Buncher / Forwarder / Site Preparation Crossings)

Non-Road Water Crossing Equipment Only Crossings

AWS Table 1 Identifier – **EQUIP**

Although the *Crown Land Bridge Management Guidelines* specifies the standards and management practices that apply to bridges on Crown land roads, the intent of the following section is to provide general guidance on short term temporary crossings that are meant to provide preliminary access prior to construction of the forest access roads. 'Equipment Only' options can only be used in those cases where **no** access is available to the public on the operational roads. It is the responsibility of the onsite operator to ensure that structures are replaced with crossings that meet the standards when access to the crossing is established. Although these structures are not subject to the provisions of the *Crown Land Bridge Management Guidelines*, operators must still ensure that they satisfy *Occupational Health and Safety Act* provisions to take all reasonable care for the safety of forest workers. In those cases where no access (i.e. drivable road open to public) is established during current year these temporary structures must be removed before Spring freshet or by March 31st (whichever comes first) of the operating year. If a structure must remain in place more than six (6) weeks then MNRF will also be advised. Crossing of haul vehicles of any type or licensed highway vehicles. (i.e. tandem gravel trucks, haul trucks, pick-up trucks etc.) will not be allowed to cross. The road leading up to the equipment only crossing will not be passable/drivable in order to prevent highway vehicles from getting to the crossing during frost conditions.

These short-term crossings would also permit company staff to collect information prior to the installation of the crossing. Once the road construction operations reach the site (i.e. access possible by general public), the temporary structure will be removed and an appropriate crossing structure that meets the *Crown Land Bridge Management Guidelines* requirements will be installed.

No Instream Work: For buncher / forwarder / site preparation activities which require equipment to cross a watercourse with structures such as tree bundles and designed steel track pads (ramps) or where track pads clear the width of the stream channel.

Principles for its use are as follows:

- The selected structure must clear the width of the stream channel such that the flow of water is maintained. If the water level rises to the extent the pads could potentially obstruct water flow, the structures are to be removed immediately.
- Creek banks stabilization needs to be maintained (i.e. no rutting or disturbance).
- No gravel or other fine material should be placed in or adjacent to the crossing such that deposition in to the stream is possible. Also, the crossing is to be continually monitored to avoid the diversion of water laden with sediment to directly flow into the water body as a result of the crossing. Equipment tracks are to be cleaned before crossing the creek.

- The number of times the equipment crosses the creek is to be kept to a minimum and will be used to cross streams less the 3 metres in width in order to permit access for harvesting equipment before road construction commences. Crossing locations will only be placed within the 200-metre corridor as indicated on approved AWS operational maps and within the right of way in the AOC. They are used to cross streams on a short-term basis.

- Temporary structures must be removed following completion of activities. For temporary stream crossings where there is a potential for soil disturbance consider

implementing the above erosion control measures in *General Principles for Winter Crossings* and *Snow and Ice Winter Crossings Installations* sections.

Suggested Equipment Only Crossing Installations

1. Two abutment logs will be placed 2 metres away from the stream on both sides. To prevent damage to stream banks, the machine will rest on the abutment logs while placing logs on the opposite bank. Align bridge abutments and piers to be parallel with the direction of water flow. Every effort should be made to place abutments outside of the high-water mark wherever possible.

2. Structures such as log stringers, tree bundles or designed steel track pads (ramps) will be placed on the abutment logs. The onus is on the operator to ensure structure is adequate to support any load it is likely to be applied to it. Where track pads clear the width of the stream channel no structure is required but harvesting should be carried out so as to avoid damaging banks, keep logging debris away from the stream, and avoid the occurrence of significant erosion.

3. Coverings will be placed over seams or opening to prevent sediment from entering the stream.

4. Corduroy logs will be placed on the approaches if the ground is soft or a more gradual step onto the structure is required.

5. Equipment crossing over these pads will be held to a minimum while ensuring that when the equipment crosses, they are cleaned of excess dirt and other material to prevent deleterious material falling in the stream.

Equipment Only Crossing Removals

The structure will be removed ensuring sediment does not enter the stream.

The corduroy and abutment logs will be left in place for subsequent water crossing installation if they meet the substructure design requirements for the superstructure in use.

E**mergency Repairs and Washouts**

Emergency Road Repairs

Emergency road repairs take place in situations that require immediate attention to restore access to active operations and reduce the chance of personal injury, damage to equipment, impact to active operations and further road damage (major washouts, blocked culverts, damaged bridges, etc.). Emergency repairs and washouts, including beaver caused, shall employ the following principles for mitigation:

- The primary concern shall be public and environmental safety and to minimize the damage to the road itself with initial repairs being directed to minimize impacts. Operators will immediately use whatever means available to identify the hazard for road users.

- In all cases the party responsible for the crossing will be advised immediately of the problem so that caution signs and barriers can be installed as required and maintained until the problem has been rectified and there is no immediate or recognized hazard.

- In the case of a beaver caused problem, where water is washing out or saturating the roadbed and causing dangerous soft spots and proper draining can immediately restore the road, then repairs can be conducted.

- In the case of a beaver caused problem, prior to any actions being taken, photographs shall be taken to show the damage and notes of the actions and repairs made. Actions taken will be reported via e-mail directly to the MNRF, within 24 hours of conducting the repair when all repairs are complete.

- If the emergency maintenance is required during normal MNRF office hours, MNRF will be contacted prior to any work occurring. If the emergency maintenance is required after normal MNRF office hours, the work may proceed and MNRF will be contacted during the next MNRF business day.

- Where MNRF is contacted prior to the emergency work proceeding, MNRF will provide recommendations and advice (i.e. initial verbal with follow-up email) regarding the proposed emergency work as quickly as possible. Any required documentation will be completed as soon as possible after work has occurred.

- For emergency replacement of crossings not in the AWS needed to address public safety and/or environmental hazards, the SFL will complete a watershed analysis for the affected water body prior to any work occurring and a copy will be forwarded to the district MNRF.

- For non-emergency washouts a revision will be undertaken to include the crossing that requires remedial work. This will include a watershed analysis. Both approaches to the washout, if necessary, should be adequately marked as to the hazard ahead.

MNRF Nuisance Beaver Protocol

General Principals

MNRF will work cooperatively with licensees to ensure best utilization of the beaver fur resource while addressing property protection concerns (i.e. road infrastructure). For example, allowing local trappers to remove problem beaver(s) prior to the removal of their dam to reduce the likelihood of beaver reestablishment.

It is understood that beaver dams need to be removed or breached periodically to protect, maintain or construct infrastructure and to avoid the flooding of private and public land. Removal of beaver dams can negatively affect fish and their habitat by draining the upstream pond leaving fish stranded, along with releasing sediment and large volumes of water possibly devoid of oxygen downstream. It is therefore important to exercise extreme caution when proceeding with dam removal due to the possibility of downstream flooding, habitat damage, and the introduction of dam debris into the water body. Persistent breaching or removal of a beaver dam can increase the risk of negative impacts to fish habitat. In these instances, other beaver management techniques should be considered.

It is important to note that the breaching or removal of beavers and their dams may not prevent future beaver activity in the area.

It is the responsibility of the licensee to ensure that any removal of beaver dams will not be in contravention of any legislation. (i.e. Endangered Species Act, 2009)

When a trapper removes problem beaver(s) from an area outside of their trapline, a report must be submitted regarding the details of the beaver removal. This report must include: name of trapper who removed the beaver(s), trapper number, location of removal, and number of beaver removed. This information will be used to ensure that the traplines in question are being sustainably harvested and trappers are not being held accountable for beaver(s) already harvested from their area. This report is to be submitted on an annual basis at the end of each calendar year.

The MNRF is not responsible for any financial agreements which may arise between the licensee and the trapper for the removal of problem beavers or beaver dams.

Beaver Removal Guidelines

During the open season for beaver, the licensee must use a licensed trapper to remove problem beaver(s) (O. Reg. 670/98: Open Seasons – Wildlife).

During the closed season for beaver, the licensee must use a licensed trapper as an agent to remove problem beaver(s) while on patented land or by acquiring Ministry Authorization while on Crown land.

If access onto private property is necessary, it is the responsibility of the trapper to obtain written permission to enter from the property owners before trapping any problem beaver(s).

Regardless of season, if beaver removal is required on crown land then the head trapper or the helper will be contacted for the area in question. If the trapper does not respond within 48 hours, then a different trapper may be contacted.

If the contracted trapper has not started the required trapping within two weeks of their commitment date, then another trapper may be contacted to remove the problem beaver(s). It is the responsibility of the licensee to communicate this expectation to the contracted trapper and to notify them if another trapper is contacted.

Beaver Dam Removal / Nuisance Beaver Guidelines

Measures to protect fish and fish habitat when removing beaver dams is provided below. MNRF written authorization is required prior to removal/destruction. If the measures and conditions provided cannot be followed due to unusual circumstances, then written authorization will be required.

The licensee must notify the MNRF of their intention to remove a beaver dam. This can be completed in the form of an email to the forestry compliance technician assigned to that licensee. If any unanticipated consequences occur during the dam removal that may have a negative impact or a harmful alteration to stream habitat, the licensee will immediately notify MNRF of the event.

Beaver dams will not be removed in the winter especially when the pond is frozen.

Beaver dams will be removed consistent with the DFO project near water self-assessment for Beaver Dam Removal (www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) in addition to the conditions below.

Emergency beaver dam removal can be carried out at any time during the year. Emergencies include situations where carrying out the project immediately is in the interest of preventing immediate damage to property or the environment or is in the interest of public health or safety. The licensee will follow all other measures to the greatest extent possible.

Whenever possible, remove beaver dams by hand.

Beaver dams within the right of way of forestry-maintained roads may be removed by a licensee. If the licensee wishes to remove a beaver dam outside of the right of way on crown land, and the dam is not posing an immediate threat, then they must apply for and obtain an “Authorization to Interfere With/Destroy A Black Bear Or Furbearing Mammal Den, Beaver Dam, Black Bear In A Den”. These authorizations can be obtained at the district office via written request. There is no formal application for the authorization but there is information which must be included in the request such as: name of the person to hold the authorization and any individuals who will be helping with the removal, mailing address of the authorization holder, a detailed explanation for the dam interference or destruction, and a georeferenced location of the beaver dam (i.e. UTM’s). Failure to provide this information to the MNRF may result in the authorization being delayed or denied.

Beaver dams within reach of the road will be removed by a backhoe (i.e. 4 meters). Beaver dams that are not within reach from the roadbed will be removed by other means (i.e. backhoe not to enter the riparian zone without approval from the MNRF).

Install effective sediment and erosion control measures before starting work to prevent the entry of sediment into the watercourse due to machinery operation or other activities that disturb the bank during the removal project. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs. Material removed from the beaver dam that is susceptible to erosion is to be deposited and stabilized in a location where run-off into a water body is not possible. This could include covering spoil piles with biodegradable mats/tarps or planting them with grass or shrubs.

While the removal of select plants may be necessary to access and remove the beaver dam, clearing of riparian vegetation should be kept to a minimum. Use existing trails, roads or cut lines wherever possible to minimize disturbance to the riparian vegetation. Operate machinery on land (from outside of the water) and in a manner that minimizes disturbance to the banks of the watercourse.

- Machinery is to arrive on site, in a clean condition, and is to be maintained free of fluid leaks.
- Wash, refuel and service machinery, and store fuel and other materials for the machinery away from the water to prevent any deleterious substances from entering the water.
- Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
- Restore banks to original condition if any disturbance occurs.

Remove the dam gradually to allow the water to release slowly and prevent sediment at the bottom of the pond from being released downstream. As the water levels drop in the upstream pond, increase the size of the opening to drain the pond to the desired level. The width of the breach opening of the beaver dam should not exceed the width of the original stream channel to prevent bank erosion and flooding of adjacent properties. When a series of dams is to be removed, this should be done from downstream to upstream in order to avoid severe flooding and damage to fish habitat.

Relocate any fish that become trapped in isolated pools or stranded in newly flooded areas to the main channel of the watercourse.

Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses. These areas should be covered with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized and covered with erosion control blankets till it can be vegetated in the following spring. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas can be achieved.

Module 5

Road and Water Crossing Decommissioning Conditions and Procedures

for the

2021-2031 Nagagami Forest Management Plan

5.0 Criteria for Road and Water Crossing Decommissioning

5.1 Practices for Decommissioning of Roads

Roads and road networks are often decommissioned at the same time as their associated water crossings. In all cases, decisions regarding the decommissioning of designated road segments and/or water crossings consistent with the use management strategies for each road network in the 2021-2031 Nagagami Forest FMP.

5.1.1 Standards

- All water crossing removals will consider public safety and access and potential fisheries values prior to the actual removal of the crossing.

- Table AWS-2 will list crossings scheduled for decommissioning in the Annual Work Schedule (AWS). Fisheries Act Review results will indicate that no further assessment for fish and fish habitat under the DFO protocol is required when completing removals under the following circumstances:

    1. In those cases where a review has previously occurred on the water crossing through the forest management planning process (i.e. Appendix 1 form previously submitted).

    2. In those cases where a review of MNRF crossing inventory information collected under the *Forest Roads and Water Crossing Initiative* for existing crossings indicates that no additional mitigation measures are required beyond the standards and guidelines described in the CRO Toolkit.

The operator; a) considers advice provided by DFO measures to protect fish and fish habitat, abides by standards and guidelines described in sections of Module 5.1 and 5.2, c) adheres to the timing restrictions on instream work as specified in Module 2.2.1, and d) complies with any of the original conditions provided in the Appendix 1 submission.

- Temporary crossings on operational roads may be removed to minimize the loss of productive forest due to the pooling of water. Where the shareholder company has indicated proposed stream-crossing removals, decommissioning of the road will be identified in the AWS. In most cases this will occur only when renewal activities have been completed, usually in the year following the installation.

- Decommissioning of water crossings will be considered for public safety and possible fisheries concerns. Any designated crossing removal will:

    1. Have the infrastructure completely removed,
    2. All slopes will be stabilized,
    3. All run-off will be directed away from any water body,
    4. Grubbing will be minimized to leave as much of the existing vegetation intact,
    5. Any grubbing will be armoured to a degree that will ensure that no erosion occurs,
    6. Infrastructure debris is to be disposed of in an MECP approved manner,

7. If debris is buried on site, the site will be out of the zone of influence for any water body, leveled, regenerated to grasses and sloped and ditched to direct all water run-off away from any water body,
8. The location will be bermed and signed if a hazard exists,
9. All non-vegetated areas, including berm's will be seeded,
10. The removal will be reported in FOIP and will be inspected by Industry Certified Inspectors after spring freshet,

- Beaver or non-SFL related activities which cause damage to the site, will not be considered as part of or deterrent to this decommissioning process.

5.1.2 Guidelines for Forest Operators

- For each road or road network scheduled to be decommissioned, ensure decommissioning is consistent with the approved use management strategy and techniques are carried out in accordance with the requirements in the annual work schedule (i.e. posting, berm or physical removal).

- For each road or road network scheduled to be decommissioned, stabilize slopes and areas of the road with known or identifiable hazards (e.g., slopes susceptible to washouts) to prevent erosion and protect public safety.

- Decommissioning of roads is usually related to decommissioning of water crossings. Ensure the schedules for road or road network and water crossing decommissioning is coordinated.

- When decommissioning a road or road system, assess all water crossings on that road or road system.

5.2 Water Crossing Decommissioning and Rehabilitation

5.2.1 General Standards

- If decommissioning of a road or road system is being considered, all water crossings on that road or road system will be assessed. Water crossings that will no longer be maintained will be formally decommissioned in an environmentally sound manner and approved by MNR. Decommissioning may or may not require removal of a water crossing.

- During decommissioning, workers will prevent contamination of a water feature by foreign materials such as lumber, nails, logs, brush, fuel and oil.

- Decommissioning and rehabilitation operations that may enter a water feature (i.e., in-water work) or that may potentially cause sediment to enter a water feature, are not to occur during periods of fish spawning, incubation, or fry emergence, unless approved by MNR.

- The proponent for decommissioning of water crossings will monitor operations and mitigation techniques to prevent the harmful alteration, disruption, or destruction of fish habitat, the impairment of water quality, and, problems related to fish passage.

- Fill material placed below the high-water level within the floodplain of a water feature will be erosion resistant and/or protected from erosion.

- Any exposed mineral soil between the height of land and the water crossing, or within 100 m of the water crossing, whichever is less, will be trimmed to a stable angle and be protected from erosion so sediment will not enter the water.

- Upon completion of decommissioning, any temporary fill, culverts, refuse, etc. will be removed from the construction area and disposed of in a satisfactory manner.

- Following decommissioning, on-site inspections will be made by the proponent to confirm the standards are being met. Problems will be reported to MNR immediately.

5.2.1.1 Water Crossing Standards for the Decommissioning of Clearspan Bridges

AWS Table 1 Identifier – **CSPAN**

These water crossing standard apply to the decommissioning of clear span bridges and their footprints, including associated abutments, cribs and/or sill logs. In certain cases, local site conditions may create a higher likelihood for potential damage to watercourse banks and/or fish habitat when bridges abutments, cribs, and/or sill logs are completely removed as opposed to leaving them in place. In these cases, Proponents must ensure that appropriate sedimentation and erosion mitigation approaches, in addition to any necessary public safety actions, continue to be implemented.

- General Standards: The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.
  - Decommissioning of water crossings will only occur if it is consistent with the approved road use management strategy in the applicable FMP and is scheduled for decommissioning in the current AWS (Table AWS-2).
  - Erosion and Sediment Control
  - Upon decommissioning, including the removal of bridge abutments, cribs, and/or sill logs, the site must be stabilized and protected against erosion.
  - Bridge abutments and cribs may be left in place if they are in good condition, stable for the long term, are not affecting watercourse or fish community dynamics, and are permissible in the approved FMP and/or AWS-2 table.
  - Surface water runoff and road approaches and ditches must be directed away from the watercourse and into vegetated areas. Diagonal berms or waterbars must be installed where the erosion potential of the road approaches is likely to result in the road's gravel surface and underlying fill being deposited into the watercourse over time. Sediment traps used within ditch lines adjacent to the watercourse crossing approach should be replaced and/or maintained to their original condition at the time of crossing decommissioning.

- CRA Fisheries or Fish that Support Such a Fishery: The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.

- Construction and Maintenance: The decommissioning of clearspan bridges, including the removal of bridge abutments, cribs and/or sill logs will not result in the alteration of the bed or banks of the watercourse or infilling or narrowing of the watercourse channel.

5.2.1.2 Water Crossing Standards for the Decommissioning of Single, Small Closed-Bottom Round Culverts

AWS Table 1 Identifier – **CULV**

These water crossing approval specification apply to the decommissioning of all round, closed-bottom steel, aluminum, or plastic culverts that are less than or equal to 1200 millimeters (4') in diameter.

- General Standards: The conditions and requirements in the general water crossing standards must be implemented in addition to, and in conjunction with, this water crossing standard.
  - Decommissioning of water crossings will only occur if it is consistent with the approved road use management strategy in the applicable FMP and is scheduled for decommissioning in the current AWS (Table AWS-2).
  - If the construction of the crossing was originally reviewed and approved by MNRF and/or DFO, all applicable conditions of approval must be fulfilled.
  - Erosion and Sediment Control
  - Upon decommissioning, the site must be stabilized and protected against erosion. Approaches to the watercourse should be stabilized at a 2:1 slope or stable angle of repose for the materials used using site appropriate methods.
  - All exposed soil must be seeded and/or stabilized immediately following completion of activities. Erosion and sediment control measures must be appropriate for the site conditions and maintained until vegetation has become permanently re-established within disturbed areas and/or exposed mineral soils have been stabilized with rip-rap or appropriately sized non-erodible rock material.
  - Materials removed or stockpiled during decommissioning (e.g. grubbing, overburden fill) must be deposited outside the floodplain and stabilized/protected against erosion to ensure material does not enter the watercourse.
  - Surface water runoff and road approaches and ditches must continue to be directed away from the watercourse and into vegetated areas. Diagonal berms or waterbars must be installed where the erosion potential of the road approaches is likely to result in the road's gravel surface and underlying fill being deposited into the watercourse over time. Sediment traps used within ditch lines adjacent to the watercourse crossing approach must be replaced and/or maintained to their original condition prior to the construction of the crossing.
  - Appropriately sized erosion-resistant materials must be used below the normal high water mark for stream bank rehabilitation.
  - CRA Fisheries or Fish that Support Such a Fishery

- The project must not be located within 100 metres of fisheries spawning or sensitive habitat if any in-water work is a requirement of the project.
- Construction and Maintenance
- The crossing must be decommissioned under low-flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
- The watercourse must be restored as closely as possible to its original condition prior to the construction of the crossing, including retaining as close as possible the original stream alignment.
- All crossing infrastructure must be completely removed from the site.
- Grubbing must be minimized to leave as much of the existing vegetation intact.

5.2.2 Guidelines for Forest Operators

- Whether and how a water crossing structure is to be removed will be based on an analysis of biological, water quality, engineering, and safety criteria, which considers, at a minimum, the following items:

Biological

i) history of beaver activity;
ii) sensitivity of fish species;
iii) whether the structure is currently an impediment to fish migration or may be an impediment to fish migration in the future;
iv) the presence of critical fish habitat and the likelihood of the habitat being impacted should a washout occur; and
v) whether removal activities would cause damage to fish or fish habitat.

Water Quality

i) in the event of a washout or erosion problems, will additions to natural background levels of suspended sediments affect downstream fish habitat or other values.

Engineering

i) the type of the water crossing structure (e.g., culvert);
ii) the length of time the structure was designed to be functional (e.g., whether the crossing has been designed for a 10-year or 100-year storm event);
iii) the expected life of the materials used in the construction of the crossing structure;
iv) whether the fill material is similar to the streambed/stream bank material;
v) whether the road will allow for floodwaters to pass without washing out;
vi) the amount and type of fill used in construction of the water crossing;
vii) impact of removal of the crossing on the use management strategy of the associated road or road network; and
viii) costs of removal.

Safety

i) if the water crossing structure failed or if a washout occurred, would a hazardous situation result.

- Use techniques appropriate for the conditions encountered at each crossing to minimize disturbance of the water feature and the potential for erosion and sedimentation during and after decommissioning.

- Decommissioning of water crossings is related to decommissioning of roads. Ensure the schedules for water crossing and road or road network decommissioning is coordinated.

- Decommissioning of the water crossing will be consistent with the vehicular traffic expected by the use management strategy for the road or road network.

- If continued vehicle passage can be considered after removal of the crossing structure, ensure the crossing site is safe and erosion resistant (e.g., a ford).

5.3 General Procedures for Structure Removal

The following procedure describes a generic prescription for removal of watercourse crossing structures (i.e. including bridges) and site rehabilitation.

1. Identify crossings that require removal. Refer to Module 5.0 for conditions and procedures for road and water crossing decommissioning criteria. Consider:

   - The condition of the culvert / bridge (i.e. crushed ends, collapsed, etc.)
   - The duration of deactivation (see Supp Doc 8.9.5)
   - Future road plans (see Supp Doc 8.9.5)
   - Risk to other resources in area
   - Refer to Use Management Strategy for the road for specific requirements related to posting and/or removal dates.

2. Ensure required approvals are in place for any in-stream work.

3. Shareholder representatives conduct a pre-work meeting with the contractor or company equipment operator to discuss the removal of the structure. Shareholders need to consider:

   - The degree of deactivation required,
   - Disposal of crossing structure brief qualified operators and culvert removal crew on the values to be protected, how the control measures work, and how to install and monitor the control measures.
   - Public should be advised via posting of site prior to undertaking any operations of the crossing removal. An inspection of the road beyond the culvert will be undertaken to ensure no one is stranded, if safe to do so.

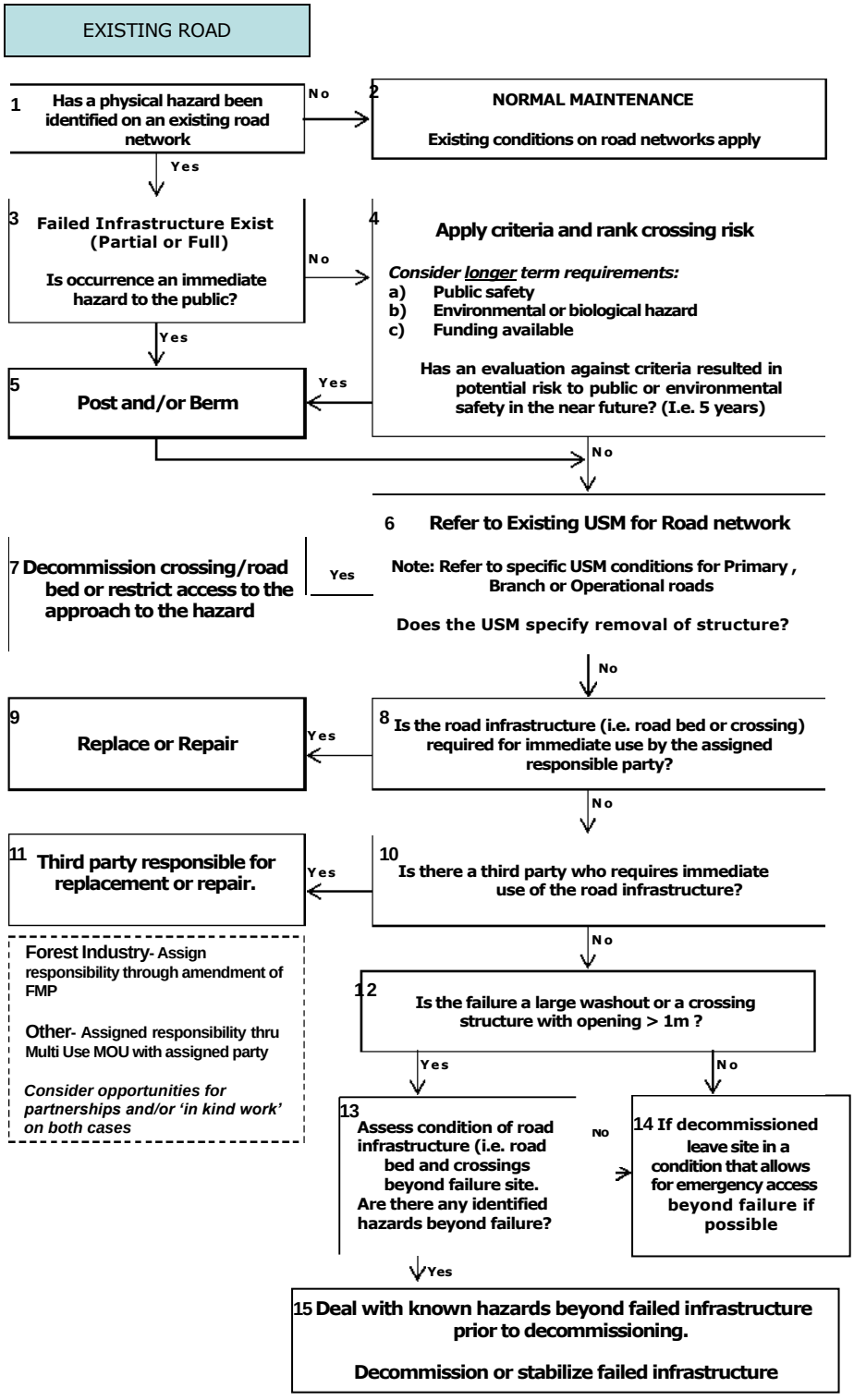
4. Upon deactivation or reclamation of crossing, ensure channel stability and water quality is maintained and timing restrictions are adhered to:

- Re-vegetating exposed soil
- Construct water bars on hills to direct excess run off away from road surface and minimize erosion.
- Placing rip rap to protect stream channel at the crossing location
- Sediment control fences or bales of hay may be required if working in water and when there is a potential for disturbed soils to enter the water.
- Attempt to remove any imported fill (overburden) from the flood plain. The fill (overburden) and culvert are to be placed where they will not create short or long term sedimentation into the stream. When removing fill, attempts should be made to preserve the original floodplain vegetation.
- Culvert to be re-used or disposed of in an approved location.
- Slope the approaches to the stream to a stable angle of repose where practical (3:1).
- Maintain the original stream width and depth opening if possible, so as to minimize the fluctuation of the water level within creek.
- Place sediment control/erosion resistant material in a band along the water line at a width of 2 metres (7 feet) over the exposed mineral soil. Retain as much of the existing vegetation as possible.
- "Softer" methods such as seeding, water bars, and erosion control blankets etc. can be employed above the sediment control measures back beyond the crest of the slope.
- Remove all road signs and mileage markers.
- Install road closure, culvert removed, or bridge removed signs.
- Pick up and dispose of any roadside litter.
- Excavate entrance points and/or post a sign advising the public that the road is not maintained.

5. Skidding / Forwarding / Site Preparation Stream Crossings

- Remove crossings promptly following forestry activities (i.e. upon completion of silviculture obligations) according to operational plan.
- Remove debris from stream and ensure natural drainage pattern is maintained

Figure 3: Criteria for Decommissioning and Rehabilitation of Road Infrastructure



Module 6

Road and Water Crossing Monitoring Program for SFL-Responsible Roads

in the

2021-2031 Nagagami Forest Management Plan

6.0 Monitoring Program

A program for monitoring those roads and water crossings that are the responsibility of the SFL has been developed to determine if there are environmental or public concerns. These findings will be used to assess the access conditions and update inventory information.

6.1 Frequency

The following schedule will be used by HPL for completing inspections of road beds and water crossing structures on assigned roads:

6.1.1 Crossings Inspections

1. Bridge - Frequent use (i.e. used during current AWS) - Annual
2. Bridge - Infrequent use - **3 years**
3. Road and culvert crossings - **5 years**
4. Hazards – Inspection and abatement as encountered (i.e. refer to Module 7)

6.1.2 Road Inspections

1. AWS Roads - Roads used/included to access allocations in AWS will be assigned to Shareholder(s). They remain responsible for verifying entire length of drivable road.
2. Transfer Roads at end of FMP - Full joint inspections of drivable roads in network expected to be transferred between the Crown and forest industry. This assessment will also be used to determine if there are any changes to the drivability attribute for the network.

6.2 Responsibility

6.2.1 Crossings

- HPL will maintain an inventory of 'as built' crossings as part of an *Access* database. This will include attributes of those that would be 'acceptable' or 'unacceptable' for transfer or has been identified as the responsibility of another user. GIS will be the sole source of crossing information.
- HPL will provide updated crossing list of the database attributes to MNRF at the end of each FMP phase in those cases where there has been a transfer of responsibility from the SFL.
- The following principles will be used to maintain the crossing inventory database:
  - HPL will not use FRWCI to maintain their assigned crossing inventory with the exception of the 'crossing id' and 'responsibility' fields in GIS.
  - HPL inventory will consist of hardcopy maps, measurements and photos which will be used for future transfer documentation. Primary crossing information such as culvert size, location and condition will be stored as an attribute in GIS and will form the basis of their inventory.
  - HPL will be responsible for assigning new FRWCI crossing numbers as they will generally be completing the greatest number of new installations.

6.2.2 Roads

- HPL will track location and drivability of new road construction carried out as part of regular operations and will maintain data as part of shared GIS road layer. Data source to determine road centerline location will vary but could include GPS line data or Supplemental Aerial Photography based information.

- MNRF will be responsible for updating roads in the LIO layer as required. For example:
  - Old roads found that were not in original transfer
  - Old roads brushed in and not drivable or degenerated to trail
  - Newly discovered roads information

6.2.3 Road Infrastructure Transfer Protocol

- In order to ensure that future transfer of responsibility occurs in a timely and efficient manner the following information will be collected/maintained by both HPL and MNRF.

  - New crossings:

    1. Watershed and culvert sizing report (i.e. In the case of forest industry *Appendix 1: Form for Submission of Information on a Proposed Crossing* for specific crossing).
    2. Field measurements of structure and site conditions required to document compliance with installation standards (i.e. In the case of forest industry results will be included under the *HPL Crossing Installation Report* section of the *Appendix 1: Form for Submission of Information on a Proposed Crossing* for specific crossing).
    3. Photographs of final condition including approaches, inlet, outlet and interior of structure.

  - Roads:

    1. Any identifiable or known hazardous condition to the road bed that could be encountered unexpectedly and has the potential for serious consequences (e.g. washouts or obstructions) should be remedied by the party responsible before transfer of responsibility occurs.
    2. The infrastructure is to be jointly inspected to confirm status before responsibility is transferred.

- HPL upgrades on MNRF crossings will be subject to the following transfer process:

  - Timing of transfer at the 1 yr, 5 yr, or 10yr point will be subject to the *Use Management Strategy* for the road network. These UMS's will designate those specific crossings in the road network for which responsibility has been assigned to the SFL.
  - Crossings that are the responsibility of MNRF will have inventory maintained by them as part of FRWCI. In those cases where MNRF is updating FRWCI on crossings they are maintaining (i.e. upgrading/removal), then the transfer of crossing information to the SFL will only occur when there is a formal

transfer of responsibility during either the Phase 1 or Phase 2 periods of the FMP.

- Where industry has left infrastructure in good condition and responsibility has been properly transferred, it is reasonable to expect that industry will be entitled to re-assume responsibility in the future without unexpected restrictions or constraints that would interfere with forest management (e.g. a cottage association or snowmobile club assumes responsibility and is subsequently reluctant to accept a resumption of Forest Industry use at a later date). It is also recognized that if a road or water crossing is not used for industrial purposes for a prolonged period, its condition will gradually decline and it may require significant upgrading in order to re-establish safe operating conditions for industrial traffic. The Forest Industry would undertake this reconstruction at its expense in order to meet its needs.

- When Forest Industry is unable to wait for Crown to conduct required maintenance on failing infrastructure even though responsibility of the Crown, they will complete improvement work necessary in order to continue operations. Crown may offer to assist with remedial cost so that responsibility can be transferred to the Forest Industry. Remedial work preformed by the forest industry will satisfy relevant water crossing standards in SSG and the *Crown Land Bridge Management Guidelines*. Formal transfer of responsibility for these crossings will occur during either the Phase 1 or Phase 2 periods or in some cases as an amendment during the term of the FMP.

- It is expected that the road and crossing installation information will be used as the basis for future transfer of responsibility. Responsibility for the roads and/or crossings will remain with the appropriate party until the adequate information is made available to allow assignment of responsibility to occur.

6.3 Road Crossing Inspection Method

- For each network HPL will prepare a road checklist and summary list of crossings assigned to the SFL. The inspection will consist of a visual assessment of the road bed and crossings as detailed measurements will have been previously collected. Only identified hazards will require more formal documentation (i.e. photos measurements).

- Shareholder and HPL staffs will inspect the entire length of assigned drivable road networks.

- Entrance to road networks assigned in FMP will be posted with liability disclaimers as required.

- Failures arising from beaver caused failures of roads or crossings would be considered force majeure and would require necessary follow-up required to not place the public at danger (e.g. posting and/or berm). Refer to *Module 7 Procedure for Dealing with Identified Road and Water Crossing Hazards* for additional details.

Module 7

Procedures for Addressing Road and Water Crossing Hazards on SFL-Responsible Roads

in the

2021-2031 Nagagami Forest Management Plan

7.0 Procedures for Addressing Road and Water Crossing Hazards on SFL-Responsible Roads

7.1 Introduction

There are approximately 6,500 km of forest access roads and trails and 1,170 water crossings within Nagagami Forest. The condition of this infrastructure is constantly changing due to spring run off, storm events, beaver dam failure, and blockages caused by beaver or drifting debris. Unmaintained roads and water crossings will eventually fail because of the gradual deterioration of construction materials. Human activity may also alter the condition of roads and water crossings in a negative manner such as mechanical damage and unauthorized ad-hoc repairs to restore access. Significant deterioration or complete failure may result in conditions that represent a public safety hazard or cause harmful effects on fish, fish habitat or water quality. The SFL holder has developed this procedure for dealing with identified road and water crossing hazards on the Nagagami Forest that is the responsibility of the SFL.

The party responsible for the road has an obligation to make reasonable efforts to monitor the status of the infrastructure and provide adequate warning of safety hazards. Additionally, appropriate follow-up is required to enhance warnings and reduce or eliminate the hazard. Under some circumstances, there is a legislative requirement to report specific conditions that could harm water quality, fish or fish habitat.

In those cases where there is an identified problem water crossing that is the SFL's responsibility, it will be corrected to current prescribed standards as soon as practical on a priority basis. Problems that pose the greatest risk to public safety, fish passage, or fish migration will be given a higher priority for remedial action, while lesser priority problems will be attended to as time and resources permit.

It must be understood that roads and water crossings may not be restored in a timely manner if damaged or destroyed by unplanned events (e.g. Major storm). There is no obligation on the Crown or Forest Industry to undertake this repair work on behalf of other users who may not have the resources to replace failed infrastructure and that access to their business or property could be disrupted at any time.

The following procedure provides guidance to staff with respect to:

- identification of hazards
- establishment of initial safety warnings
- reporting the condition
- determining responsibility
- follow-up actions to enhance warnings and reduce or eliminate hazards
- record keeping
- follow-up monitoring
- legislative reporting requirements
- providing assistance to stranded individuals
- initiating emergency repairs
- HPL incident notification requirements

7.2 Identification of Hazards

Forest Industry or MNRF staff may encounter hazardous road or water crossing conditions while traveling on forest access roads to undertake fieldwork, specific surveys or while on enforcement patrols.

If a hazardous condition is encountered, staff have a duty to undertake the following:

- conduct a preliminary assessment
- establish an initial warning by hanging wide band flagging tape on either side of the hazard at a suitable location to permit a safe stopping distance
- if appropriate, utilize other materials (e.g. placement of brush) that will signal the need to reduce speed and stop; Materials should not create an additional hazard (e.g. felling a tree across the road)
- determine accurate location (GPS reading if possible)
- photograph the site and established warnings if a camera is available

In order to meet these obligations, staff travelling on forest access roads should ensure their vehicle has a supply flagging tape and copies of the *Water Crossing Safety Hazard Identification Form*

7.3 Problems Identified by External Parties

Hazardous road or water crossing conditions may be reported to Hornepayne Lumber Limited Partnership (HPL) or the Ministry of Natural Resources (MNRF) by the public or other resource users. Typically, these reports can be expected in the spring or after major weather events. HPL will determine responsibility for the network and provide notification to the Shareholders and MNRF.

7.4 Reporting Procedure

Forest Industry staff must report hazardous conditions immediately upon returning to the office. Field staff will complete a *Water Crossing Safety Hazard Identification Form* and submit it to HPL.

7.4.1 Evaluation

The SFL holder will undertake the following:

- assess the reported findings
- determine responsibility for the road/ water crossing
- initiate appropriate follow-up action
- start documentation file

7.4.2 Determining Responsibility

The SFL holder will determine who is responsible for the road and/or water crossing based on use management strategy documents. The Crown is responsible for infrastructure on Crown land unless a third party has accepted responsibility by a formal legal mechanism (e.g. Land Use Permit, Memorandum of Agreement, Maintenance Agreement, Forest Management Plan etc).

- If it is determined that the SFL is responsible for the problem infrastructure, HPL will initiate warning and remedial actions as described in the document.

- If it is determined that a third party other than the SFL is responsible for the problem infrastructure, the MNRF will be notified in a timely manner by phone and a follow-up e-mail or letter.

- If the Crown is responsible for the infrastructure, the MNRF will be notified in a timely manner by phone and a follow-up e-mail or letter.

7.5 Supplemental Warning Enhancements

For roads that are the responsibility of the SFL, HPL will determine if additional warning techniques should be utilized until the hazardous condition can be minimized or eliminated. Factors to consider include: location, traffic volume, season of use, severity of the hazard, visibility of the problem, stopping distance, and turn around options.

- Supplemental warning methods may include placement of signs/barricades, establishment of berms or other visible speed reducing materials such as brush (not logs, as this could create a hazard). Consideration might also be given to placement of a sign at the beginning of the road indicating the road is blocked and/or impassable at a specified kilometre. It is important to consider seasonal use patterns (e.g. hunting activity, snowmobile usage) as the visibility or risk of the hazard may change depending on seasonal conditions

- Photographs (date stamped) should be taken of all warning measures and the Water Crossing Safety Hazard Identification Form should be updated accordingly.

- A supply of standardized signs and saw-horse barricades is to be stored at the Hornepayne Lumber sawmill office.

7.6 Remedial Action

For assigned road infrastructure the SFL holder will determine what remedial action should be undertaken to minimize or eliminate the hazard and/or restore access. Remedial work should be consistent with land use plans, resource plans including AWS and FMP, and road use management strategies. The SFL representative responsible for the road will identify any controversies or impediments to undertaking remedial work to the SFL General Manager.

7.7 Information Required – Emergency Repairs

Basic information is required with submissions for emergency assistance from MNRF. MNRF will provide any required submission details at that time.

7.8 Emergency Repairs – Stranded Individuals and Equipment

Sometimes individuals and their vehicles become stranded beyond impassable washouts, however, there is no legal obligation on the part of the SFL to provide this assistance. If there is a need to consider undertaking prompt emergency repairs to restore access and/or evacuate stranded individuals beyond impassable washouts, the MNRF will be advised. The timely restoration of access to enable the retrieval of vehicles or equipment is not guaranteed and will be handled on a case-by-case basis. Cost sharing and/or arrangements for funding will be required for the SFL to equitably complete any required work. These emergency repairs will be undertaken in a manner consistent with land use plans, resource plans, road use management strategies and proper construction practices.

Signage at the start of major road networks, that specifies that a "Road is not Maintained - Use at own Risk" will serve as a notice to users, that they should not expect emergency repairs to be completed on their behalf should they or their equipment become stranded because of unexpected washouts.

7.9 Monitoring

Periodic monitoring of hazard warnings on SFL assigned roads and crossings are necessary to ensure that flagging tape, signs, barricades or berms are still present and functional. Sometimes warning efforts are vandalized, removed or circumvented. Alterations should be documented by photograph and records updated. Field staff should restore warnings to the best of their ability before leaving the site. Findings should be reported to the HPL, who will determine necessary follow-up action. In many cases, ongoing monitoring can be accomplished during the course of regular field activities. Under some circumstances, specific inspections might need to be scheduled on a seasonal basis. The SFL holder and MNRF will ensure there is an efficient and coordinated approach to monitoring on roads where the MNRF has agreed to share in the task of monitoring on SFL responsible roads.

7.10 Record Keeping

7.10.1 Water Crossing Inventory Updating

HPL has established e-files that contain road/water crossing hazard records. These internal records will be used to demonstrate due diligence in the event of any civil or environmental legal action. This file will be updated as follow-up actions are completed. Any delays in undertaking follow-up action will be recorded along with rationale.

7.10.2 Water Crossing Inventory Updating

The SFL holder will ensure that a Water Crossing Inventory is updated to reflect any physical remedial work that was undertaken to correct the hazardous conditions. The SFL holder will be responsible for maintaining records for roads and water crossings that are their responsibility.

Appendix

1 **Water Crossing Safety Hazard Identification Form**

2

3

Water Crossing Safety Hazard Identification Form

Crossing ID Number: _____ **Road Name:** _____

Crossing Type: _____ **Location:** _____

HAZARD RANKING ☐ **HIGH** ☐ **LOW** ☐ **POTENTIAL**

Description of Hazard

_____

_____

_____

_____

_____

_____

_____

Beaver Activity	Scour
Blockage	Signage (lack of)
Erosion	Structural Component Failure
Perforated/ Punctured	Surface Collapse
Piping	Symmetry
Road Constriction	Wash out
Road Overtopped	Other (specify)

Action Taken to Mark Hazard

_____

_____

_____

_____

_____

Recommended Follow-up Remedial Action

_____

_____

_____

Remedial Action Completed _____ **Date**_____

Number of Photos: _____ **Photo I.D.:** _____

_____

7.13 Water Crossing Safety Hazard Identification Form Terminology and Definitions

Safety Hazard Ranking

Document any safety concerns by completing a *Water Crossing Safety Hazard Identification Form.* Identify, on the form, whether the safety concern is high, low, or potential for each hazard condition that exists at the crossing. A separate *Water Crossing Safety Hazard Identification Form* must be completed for each crossing where a safety hazard has been identified.

High – defined as an existing safety hazard at the crossing that requires immediate action. Such a hazard could result in an accident causing damage, injury or even death to the unsuspecting user of the road. A condition described as a high hazard is one that needs to be brought to the immediate attention of the responsible agency (e.g. washout, road flooded, large hole in deck, broken stringer, etc.) Field crews should be prepared to mark encountered hazards with wide band flagging tape before they leave the site.

Low – defined as an existing safety hazard at the crossing that does not require immediate action, however if not addressed will develop into a High Safety Hazard. (lack of adequate signage, small hole in deck, significant erosion, etc.) Field crews should be prepared to mark encountered hazards with wide band flagging tape before they leave the site.

Potential – defined as a condition at a crossing that is not yet a safety hazard but raises the flag that if not addressed may develop into a safety hazard. Monitoring may be required. (minor erosion, evidence of crushed timbers, beaver activity, etc.)

None - no public safety issue is known to exist.

Definitions

Bridges

Structures, including culverts, with a span or opening width greater than three meters.

Culvert

A drainage structure - either a short bridge 3.0 meters or less in length or a structure with enough fill over it so that little of its strength is needed to support the traffic load. A conduit for conveying surface water through an embankment.

Ford, Ad hoc

A ford that evolved by the actions of fording taking place. The crossing location was not designed or constructed for that purpose.

Ford, Engineered

A ford where the location of the stream bottom has been designed and constructed for the purposes of fording, using non-erodable materials.

Piping

Subsurface erosion caused by the movement or percolation of water outside and parallel to a culvert.

Scour

The erosion of soil when it occurs under water, as in the case of the streambed or undermining of a bridge abutment or culvert (which may result in a perched condition).

Stable Slope

A fill or cut slope that is trimmed flatter than its natural angle of repose. Gravity does not cause individual soil particles to move down the slope if it is stable. A person should be able to walk up a stable slope without causing slumping and sliding of soil particles.

Subsidence

The settlement of land surface, in this case sections of a roadway or water crossing, caused by the consolidation or removal of underlying soil.

Washout

The failure of a culvert, bridge, embankment, or other structure resulting from the action of flowing water.

Module 8

Conditions on Regular Operations within Residual Forest Cover

for the

2021 to 2031 Nagagami Forest FMP

8.0 Conditions on Regular Operations within Residual Forest Cover

The direction in this module describes conditions on regular operations within residual forest cover.

8.1 Defining Residual Forest

To understand the various directions that refer to residual forest, it is important to first understand the definition of residual forest. The table below provides criteria that can be used to determine if an existing stand, or the result of a planned harvest, can be considered residual.

Quantifiable definition of residual forest (each of the six criteria will be met for an area to be considered residual forest).

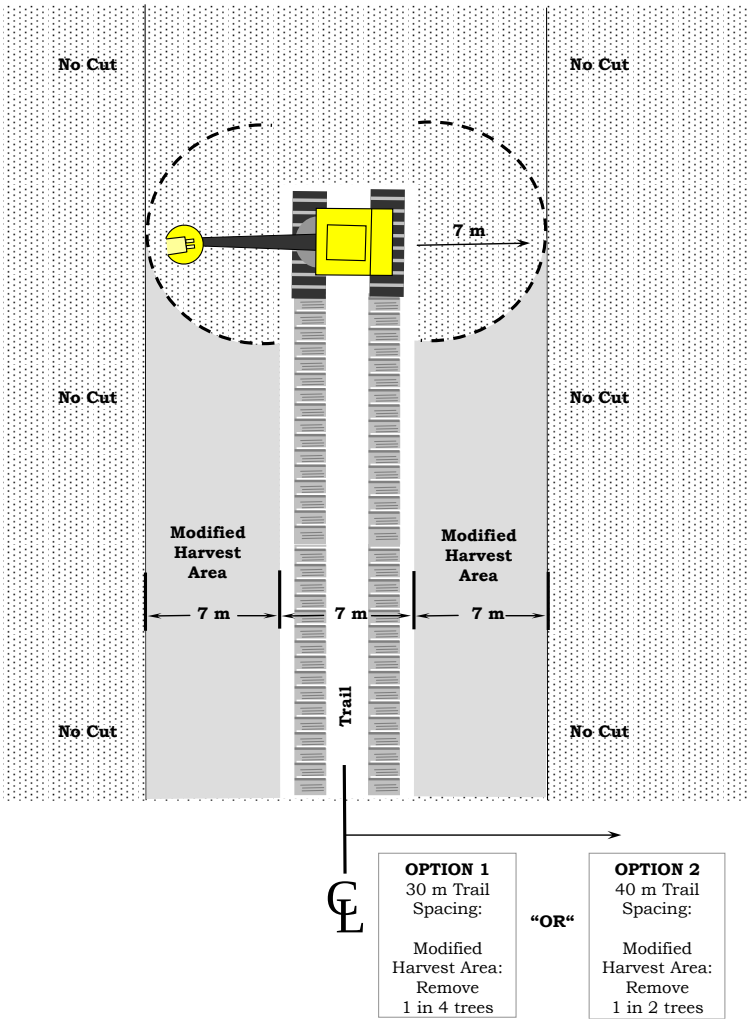
	Status *(A stand will fit into one of the three categories)*		
Criteria	Not planned for harvest		Planned for harvest
	Natural origin or ≥ 20 yrs since	*Recent harvest (<20 years) harvest*	
Condition:	Crown productive forest (incl. both available and unavailable) and free-to-grow		
Age/Height:	≥ 35 years or ≥ 10m		
Minimum patch size:	0.1 ha		
Canopy closure:	n/a	≥ 50% based on dominant/co-dominant trees	
Sub-stand pattern	n/a	The sub-stand pattern will resemble an older forest with small pattern gaps, rather than a mixture of discrete young and old forest patches. Ideally trees will be uniformly spaced. However moderate concentration to facilitate operations is acceptable. Refer to Section 8.3 for a conceptual portrayal of acceptable and unacceptable sub-stand patterns.	
Composition:	n/a	n/a	Unless otherwise specified in the FMP (e.g., SGR for the general harvest area, prescription for the AOC, conditions on regular operations), harvested residual forest will normally have a species composition, average stem diameter, and average stem quality similar to that found in the stand before harvest.

8.2 Achieving Required Canopy Closure

Canopy closure is used to define residual forest and desirable stand structure for residual patches and some AOC prescriptions. Canopy closure is generally more difficult to assess in the field than many standard mensurative parameters such as basal area. To assist in both implementation of the direction and compliance monitoring, the following locally-appropriate translations between canopy closure and more easily measured attributes of stand structure have been developed.

Shelterwood: In marked selection or shelterwood harvests, canopy closure targets can be translated into a basal area prescription (e.g., a residual basal area of 16 m2/ha will produce a canopy closure of about 50% in a typical white pine regeneration cut).

Clearcut: For unmarked partial harvests, canopy closure targets can be translated into a prescription outlining the spacing of trails and the intensity of stem removal between trails (e.g. designated stem removals within a boom's reach of the trail will normally produce a 50% canopy closure if initial stocking is ≥ 80%).



8.2.1 Residual Forest during Operations

Implementation of this module will provide details on the achievement of biodiversity objectives. Operational planning has normally followed stand boundaries and/or natural features. The standards for marking residual patches, including timing and layout of residual forest cover will proceed as detailed in the line-marking manual available in Module 13 of the Implementation Toolkit.

8.2.1.1 Fixed Patch Residuals

Fixed Patch residuals are planned patches consistent with the 500-hectare assessment criteria of the Stand and Site Guide (Table 3.2c). These areas will be mapped on Areas Selected for Operations maps and must be implemented as mapped.

8.2.1.2 Point Residuals

Point residuals are considered to be patches retained, consistent with the 50-hectare assessment criteria of the Stand and Site Guide (Table 3.2c), which are no smaller than 0.25 hectares. Patches that have been retained must meet defined residual forest standards following operations. Points will be mapped on operator working maps whereby the point residual can be located at the discretion of operator within parameters described in section 8.2.3.

8.2.2 Patch Residual (Retain 25 ha in 500 ha Circle):

- Operational planning has ensured that any point within a planned clearcut harvest area has at least 25 ha of mapped residual forest within a 500-ha circle about that point.
    - Mapped residual forest includes;
        - Unallocated stands or portions of stands that meet the definition of residual forest,
        - Stands or portions of stands scheduled for harvest that will retain residual forest,
        - Residual forest within AOC's associated with known values
        - Additional mapped residual patches required to meet Stand and Site Guide residual requirements (mapped as "Fixed Residual Patch")

- Target residual areas are assigned to each specific disturbance assessment areas where stand configurations and areas of concern did not achieve desired levels of residual.
- The location for all Fixed Residual Patches are shown on Areas Selected for Operations maps and are not available to be harvested in this FMP. Once future assessments conclude that the surrounding residual area has increased to meet minimum requirements, the current mapped residual patch will be available for harvesting in the future.

8.2.3 Point Residual (Retain 0.5 ha in 50 ha Circle):

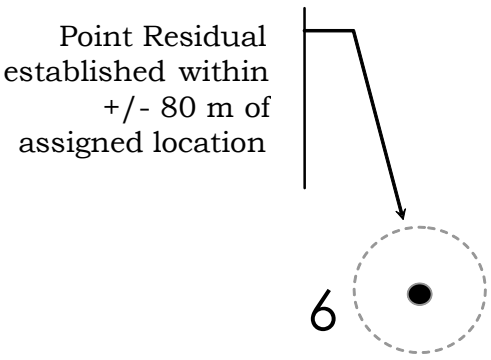
- During harvest operations, where required as shown on the Areas Selected for Operations maps, operators must ensure that any point within a new clearcut harvest area will have at least 0.5 ha of residual within a 50-ha circle about that point. Preliminary locations for all point residual patches will be numbered and portrayed on 1:10,000 operations map available to forest operators. Numbered points will relate to a corresponding UTM coordinate provided in table format in a file downloadable from the "operators area" of the Nagagami Forest web site (nagagamiforest.com).

- More than one patch can be used to achieve the target residual forest cover of **0.5 ha** as long as it is a minimum 0.25 ha in size. Any additional residual forest cover patch retained as part of normal operations (e.g. inoperable area, unidentified value, unmapped forest areas) must be within 80m of the mapped position to contribute to that particular point residual patch. The following are examples of 0.5 ha residual area configurations.



Radius	Square	Rectangle	Irregular
40 m	70 m x 70 m	50 m x 100 m	0.5 ha

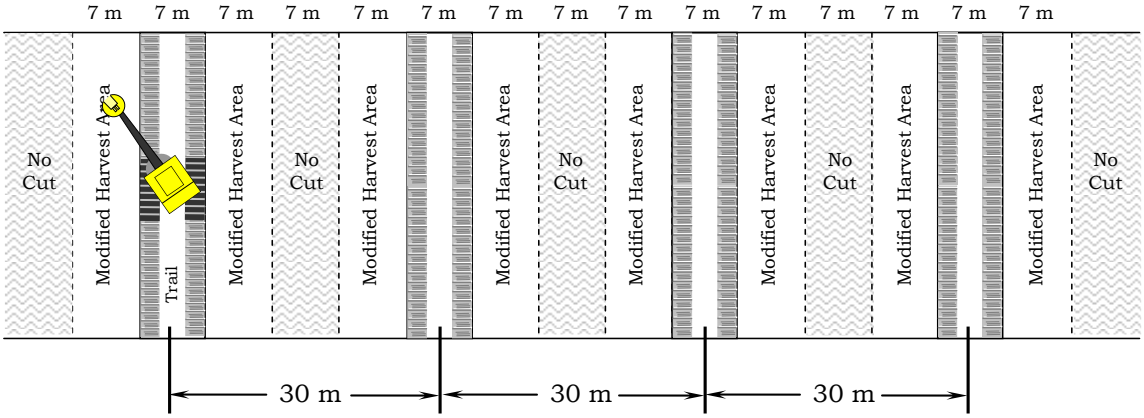
- Movement of the point residual patches is permitted within **+/- 80 meters** from the mapped point location.



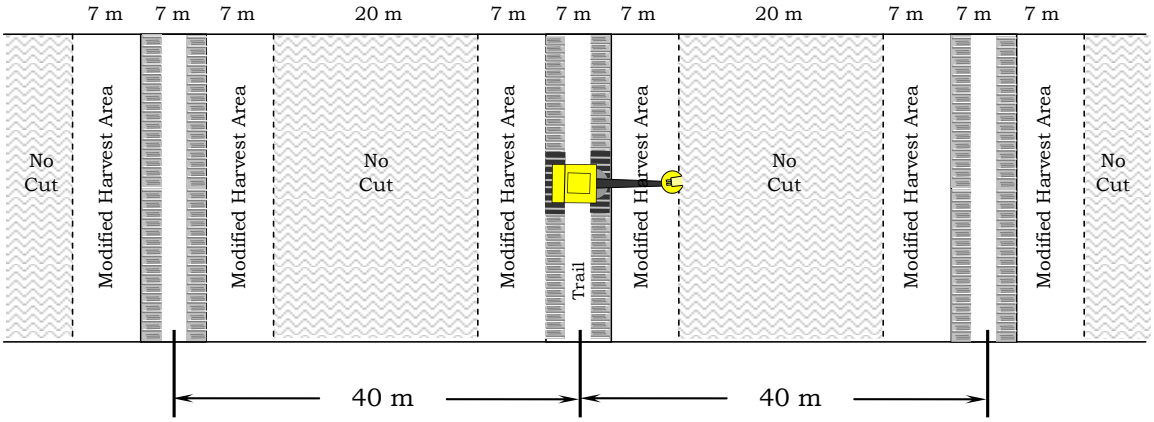
8.3 Non-AOC Residual Patch Retention

Residual harvest patterns for retained patches

Example - 30 m Spacing



Example - 40 m Spacing

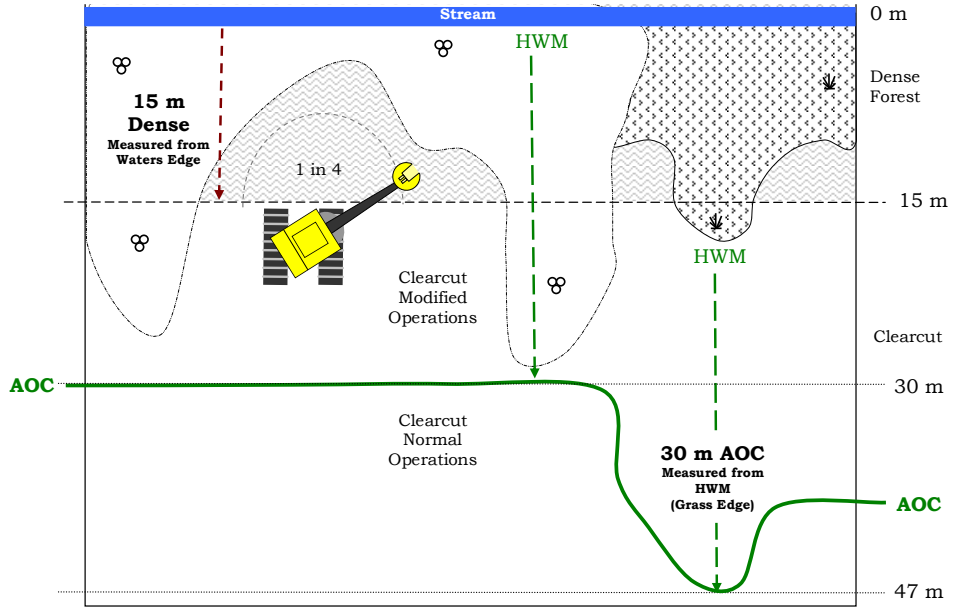


8.4 Areas of Concern Contributing to Residual

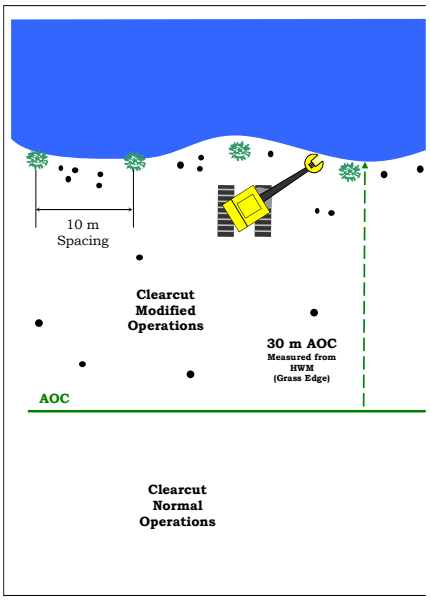
In all instances wildlife species-specific guidelines will be applied to protect values. These portions of the residual areas are AOC's and are protecting an identified value.

- Therefore, these residual patches may not be moved unless the value is dropped consistent with the FMPM requirements.

8.4.1 Modified Harvest Considerations for Streams



8.4.2 Harvest Considerations for Lakes and Ponds



Area of Concern documentation in FMP 11 provides specific details associated with Large lakes, Medium Lakes, Small Lakes and Ponds (i.e. High or moderate potential sensitivity to forest management operations). Operators must reference FMP 11 for specific direction on operations within these riparian zones. Areas Selected For Operations maps will specify specific shorelines (i.e. SH-1 or SH-2 prescriptions) where modified operations are permitted.

Harvest is permitted within the AOC subject to the following conditions:

- For small lakes, HPS ponds, and MPS ponds, ≥50% of the area of the AOC (based on delineation of the AOC around the entire water feature, both inside and outside the harvest area) will be retained as forest that meets the definition of residual; ≥75% of the area of the AOC associated with medium lakes, and ≥90% of the area of the AOC associated with large lakes will be retained as forest that meets the definition of residual (see Section 3.2.2).

- When retaining residual shoreline forest, the inner 15 m will be mature forest with a relatively uniform canopy closure ≥60% (canopy openings not to exceed individual tree crowns) unless the adjacent harvest area outside the AOC meets the definition of residual forest.

- Harvest that retains forest that does not meet the definition of residual (e.g., conventional clear cutting) is permitted within the AOC only where slope is ≤30%.

- For each ha of shoreline forest harvested that does not meet the definition of residual (e.g., conventionally clearcut) 1 ha of residual shoreline forest will be retained that has not been harvested within 20 years.

8.5 Operational Road Considerations for Residual Forest Cover

- Operational roads and skid trails in residual should be avoided where possible.

- Cleared right of ways for Primary and Branch roads through any planned residual patches must be kept less than 20 metres in width.

- Cleared right of ways for operational roads through any planned residual patches must be kept less than 20 metres in width unless worker or public safety may be impacted.

- In addition, no landings are permitted within a planned residual patch without specific approval from the MNRF.

8.6 Wildlife trees

8.6.1 General Principles

- Following a fire or other natural disturbance (e.g., windstorm), or as a result of natural forest succession, a combination of live, dead, and dying trees provides structure and special habitat features for wildlife. Trees retained during forest operations to provide structure and features beneficial to wildlife in general are collectively referred to as wildlife trees.

- Wildlife trees can be created during mechanical harvesting. Where residual trees are likely to blow down, they can be "stubbed" as high on bole as possible while considering safety of workers. The minimum allowable height of a "stubbed" tree will be no less than 3m measured from the top of the stump flare. Although every effort will be made to retain wildlife trees, worker safety will take priority. No wildlife trees will be left within one tree length of the traveled portion of the road if there is potential hazard to forest workers, public safety or the safe loading of haul trucks.

- Each harvest block has a different site potential for cavity trees.

- These residual trees may be retained in a variety of patterns across harvest blocks depending on site conditions.

- Wildlife trees can include standing healthy, dead, or dying trees, including trees killed by stubbing or tending operations. While it is sometimes desirable to retain standing dead trees as wildlife trees, such trees will only be kept if it is deemed safe to do so. Roadside work areas are normally considered to normally extend from 30 to 35 meters from the edge of the road and operators will not be required to retain wildlife tree in this zone. However, were operators feel it is safe to retain additional stems for wildlife purposes, at no time will retained cavity trees be left standing within; one (1) tree length of any traveled road, or where it has the potential to obstruct loading or roadside processing operations at roadside. Operators will ensure that standing residual trees left adjacent to primary skid trails and funnel

zones have been considered for their ability to remain wind firm (e.g. living stems or tops removed). The retention of dead or dying residuals will not be permitted on any conventional felling operation (i.e. forest workers using chainsaws and cabled skidders).

- In all cases, the retention of any standing residual trees will be at the complete discretion of the forest worker (i.e. cutter, feller-buncher operator, skidder operator, cut foreman etc.). Forest worker safety (both forest harvesting and renewal) is of paramount importance when making decisions regarding the retention of wildlife trees. The forest worker will determine whether a residual tree will pose a safety hazard under the Occupational Health and Safety Act. Any concerns resulting from this Act or from the Ministry of Labour will supersede wildlife management activities.

- Where possible, forest operators will be encouraged to leave unmerchantable portions of tree boles and slash on harvest sites to provide coarse woody debris as part of the marten habitat guidelines. A site preparation technique that encourages the retention of residual trees and minimizes slash removal from the interior of the harvest block is preferred.

- Much of the direction is presented in the context of retention of an 'average' number of wildlife trees. The average number of wildlife trees will be in reference to any given 20 ha area within an operational block where harvest has occurred or for the entire operational block when the operational block is less than 20 ha but excludes the physical area taken up by roads, landings, and roadside work areas.

- A tree will be a minimum diameter and height to be considered a wildlife tree:

    - ≥ 10 cm d.b.h in clearcut silvicultural systems; shelterwood removal cuts: if 'large' trees are specified, the minimum tree size will be ≥ 25 cm d.b.h;
    - ≥ 25 cm d.b.h in the selection silvicultural system and shelterwood silvicultural system (preparatory and regeneration cuts only); and
    - ≥ 3m in height (all silvicultural systems and stages of management).

- Normally, only trees considered to be windfirm should be selected as wildlife trees.

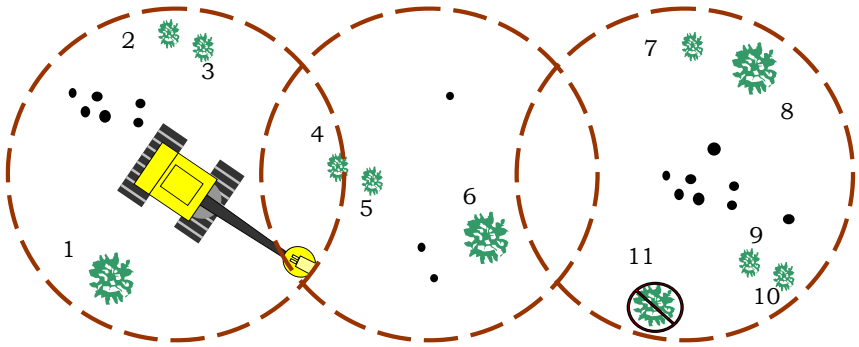
- Some wildlife trees have labels (they are a 'type' of wildlife tree) based on special attributes. Wildlife tree types include cavity trees, supercanopy trees, veteran trees, mast trees, diversity trees, or stubs.

    - Cavity trees have existing cavities in the trunk or on main limbs, or characteristics suggesting they may develop cavities in the near future (e.g., fungal conks).
    - Supercanopy trees are large, living, individual trees that tower over the forest canopy.
    - Stubs are trees cut at least 3 m up the trunk.
    - Veteran trees* are living trees retained during all phases of forest operations that are likely to grow and become supercanopy trees.
    - Mast trees* produce crops of acorns or other edible fruits.

- Diversity trees* are tree species that occur infrequently or are uncommon (for the forest type).

Note: Additional information on identifying and choosing wildlife trees related to Great Lake-St Lawrence Forest *types can be referenced in the Ontario Tree Marking Guide.*

- To account for stubs, safe dead trees, trees that fork below breast height, and coppice growth, the direction often refers to wildlife trees as 'stems'.



- When ≥ 10 stems occur over an area <0.1 ha, the stems will count for no more than 10 wildlife trees, regardless of how many there actually are (i.e. approximately 3 boom-reach working circles).

- In a clearcut harvest area, any uncut or partially cut area greater than or equal to 0.5 ha that meets the definition of residual forest will not contribute to individual wildlife tree requirements.

- A single wildlife tree with more than one special attribute can be counted and used to achieve multiple standards and guidelines. For example, a large Poplar tree could be identified and counted as a mast tree, a cavity tree, and a supercanopy tree, provided it has the appropriate characteristics. However, a wildlife tree with multiple special attributes only counts as one tree with respect to the numbers of wildlife trees required for retention (e.g., the 25 stems/ha standard for the clearcut silvicultural system).

- During operations, trees may be encountered that contain or are adjacent to transient habitat features (e.g., occupied bird nests). Such trees can be retained as wildlife trees (i.e. refer to CRO's –Nest Module for further direction).

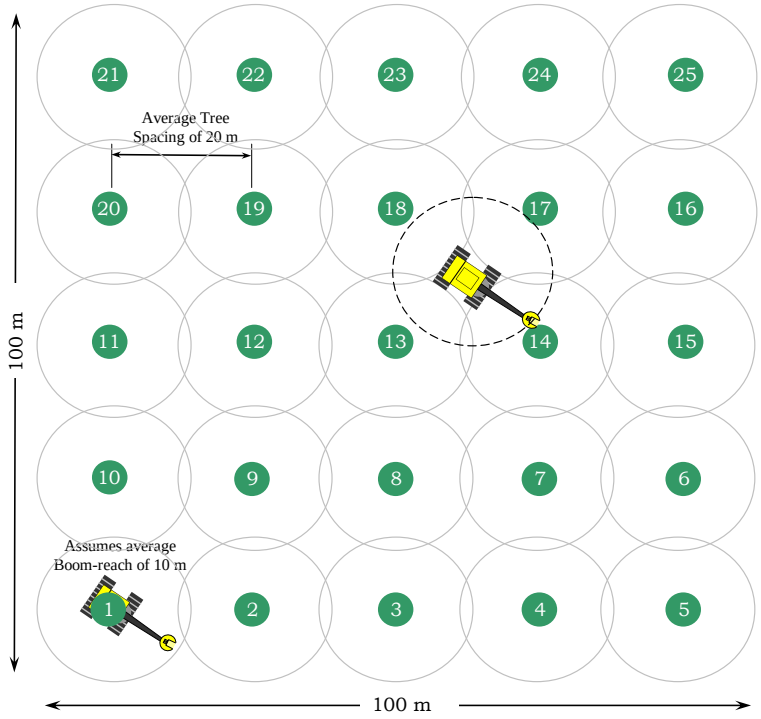
- Because the trees or stems desirable as wildlife trees may not always be present, this Module includes the provision 'when available'. In situations where the trees or stems available for retention are too small to meet the standards or guidelines, trees or stems representing the larger diameters in any given harvest location can used as a substitute

8.6.2 Boreal Forest

8.6.2.1 Clearcut Silvicultural System

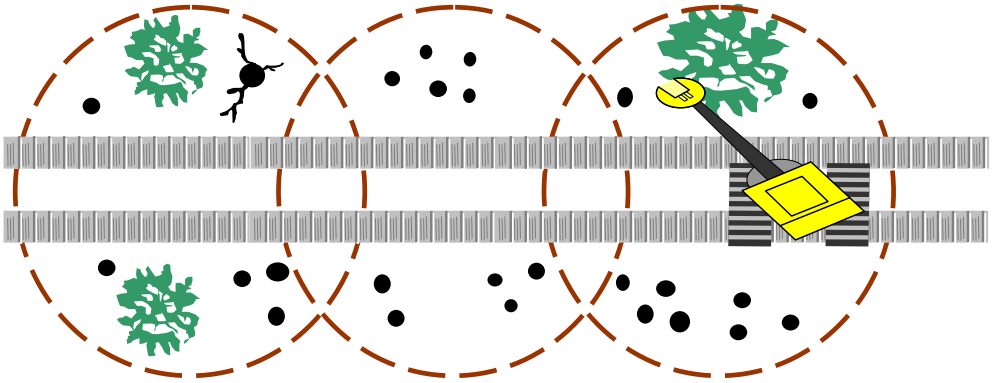
In the clearcut silvicultural system, the majority of trees on site are removed during the harvest operation. Under the clearcut silvicultural system, the direction pertaining to wildlife trees is applicable primarily during harvest operations.

1 Hectare



- Wildlife tree retention in areas of *Clearcut* silviculture will adhere to the following principles:
    - Retain an average of ≥ 25 stems/ha. with a maximum of 100 stems/ha in Pine and Hardwood stands and 150 stems /ha in Spruce stands
    - Retain an average of ≥ 10 large stems or large stubs/ha with a minimum of 5 large living trees on each hectare.
    - Wildlife trees that fall to the ground, or are purposely felled for worker safety reasons, become downed woody material.
    - Large wildlife trees will be a mix of living cavity trees, stubs, supercanopy trees, veteran trees, mast trees, diversity trees, and safe dead trees.
    - When the number of large wildlife trees averages <25/ha, additional wildlife tree requirements may be met by retaining small safe standing dead trees, small stubs, or any other living trees.
    - Wildlife trees will generally be well dispersed. Retain an average of at least 15 individual stems/ha; the remaining stems may occur in clumps.
    - Reasonable efforts will be made to avoid knocking down standing wildlife trees during renewal and tending treatments.

- For a boom-reach of 10m, the average number of residual trees per working circle is 1 (actually 0.79) to achieve 25 trees/ha



8.6.2.2 Stubbing

- If operator chooses to 'Stub' some wildlife trees then the following principles will be used:
    1. All tree species can be stubbed, but in boreal forests, the preferred species to be stubbed are jack pine and black spruce
    2. To a height of ≥ 3 m (5 m is preferred);
    3. Generally, do not stub existing cavity trees (however, it is acceptable to stub a tree with cavities below the stubbing height);
    4. Do not stub trees being relied upon as a seed source; and
    5. Do not stub wildlife trees if they are better suited for other wildlife tree functions (e.g., mast trees; fire resistant species like white pine, red pine [and hemlock, if available] are generally more appropriate to help achieve veteran and supercanopy direction).

- In areas that are predominantly stands of jack pine and/or black spruce, stub ≥ 20 jack pine or black spruce per hectare.

- When stubbing, try to have stubs scattered throughout the clearcut.

- Generally, trembling aspen, white pine, red pine, and white spruce are best suited for retention to achieve the large tree targets however; white birch is also a suitable component of the wildlife tree mix.

- Diversity trees of any size are usually a good choice for retention.

- When large wildlife trees are specified, stems ≥ 38 cm d.b.h are preferred.

- Large hollow trees and those providing existing nesting or denning sites are preferred as cavity trees (see also the Ontario Tree Marking Guide).

8.7 Downed Woody Material

The role of downed woody material is closely linked in form and function to 'wildlife trees'. In the managed forest, some or much of the downed woody material will come

from fallen wildlife trees. Downed woody material is categorized as a combination of coarse woody material and fine woody material.

- Downed woody material refers to wood above the soil and on the ground: coarse woody material will be used to refer to sound and rotting branches, boles, logs, and stumps, generally = 7.5 cm in diameter at the small end; fine woody material will be used to refer to stems and twigs generally < 7.5 cm in diameter at the small end.

- Stems retained as wildlife trees that fall down, or are felled for worker safety reasons, become downed woody material and, except in extraordinary circumstances, will be left on site. Moving such trees for silvicultural purposes is permitted.

- Downed trees (or pieces of trees) present prior to harvest will be left on site (moving such trees for silvicultural purposes is permitted); where windstorms or other natural events (e.g., snow, ice) have recently caused damage to stands, trees leaning and downed by the recent disturbance, which normally would have been available for harvest, may be harvested and utilized.

- The direction in this Module does not apply to salvage harvest.

Module 9

Conditions and Procedure on Operations within AOC's

for the

2021 to 2031 Nagagami Forest FMP

9.0 Conditions on Regular Operations within AOC's

The conditions and procedures on regular operations of this Module will be implemented when operating in and adjacent to the following values:

9.1 Large Lakes, Medium Lakes, Small Lakes (H and M) and Ponds and Rivers, Stream Segments (H and M)

- Large Lakes, Medium Lakes, Small Lakes and Ponds (High or Moderate potential sensitivity to forest management operations)

- Rivers, Stream Segments (High or Moderate potential sensitivity to forest management operations)

9.1.1 Standards

- No contamination of lakes or ponds by foreign materials is permitted. Specifically,
    - The use and storage of fuels will be carried out in accordance with the Liquid Fuels Handling Code.
    - No equipment maintenance (e.g., washing or changing oil) is permitted within 100 m of lakes or ponds.

- Harvest, renewal, and tending operations will follow appropriate operating practices to minimize rutting, compaction, and mineral soil exposure that could lead to erosion and subsequent transport and deposition of sediment in lakes or ponds (see Module 5.3). Particularly,
    - Reasonable efforts will be made to ensure that extraction trails will not cross recognizable ephemeral streams, springs, seeps, and other areas of groundwater discharge when not solidly frozen. When these features are crossed, special care will be taken; temporary crossing structures that do not impede, accelerate, or divert water movement will be used when appropriate.

9.1.1 Best Management Practice

- Machine travel should be minimized within the inner 15 m of the AOC.

- Felled trees should not be piled within the inner 15 m of the AOC.

- Prescribed burns should be considered as an option for renewing shoreline forest.

9.2 Ponds (L)

- Low potential sensitivity to forest management operations and Beaver ponds and beaver meadows requiring special management to regenerate food supply

- Ponds with low potential sensitivity to forest management operations (LPS ponds)

- Any pond that does not meet the criteria for an HPS or MPS pond.

9.2.1 Standards

- No harvest, renewal, or tending operations are permitted that will result in damage to littoral zones or shorelines and associated stabilizing vegetation, or the deposition of sediment within ponds. Operations specifically prohibited include:
  - Machine travel within 3 m of ponds.
  - Excessive removal or damage of sapling-sized trees (<10 cm d.b.h) and shrubs within 3 m of ponds.
  - Felling of trees into ponds or within 3 m of ponds. Trees accidentally felled into ponds will be left where they fall.
  - Disturbance of the forest floor that leaves ruts or a significant area of exposed mineral soil within 15 m of ponds (see Module 5.3). Ruts and significant patches of exposed mineral soil will be promptly rehabilitated to prevent sediment from entering a pond. Patches of mineral soil exposed by natural events are excluded.

- No contamination of ponds by foreign materials is permitted. Specifically,
  - The use and storage of fuels will be carried out in accordance with the
  - Liquid Fuels Handling Code.
  - No equipment maintenance (e.g., washing or changing oil) is permitted within 100 m of ponds.

9.3 Stream Segments (L)

- Streams with low potential sensitivity to forest management operations (LPS streams)

- Any stream segment that does not meet the criteria for an HPS or MPS stream.

9.3.1 Standards

- No harvest, renewal, or tending operations are permitted that will result in damage to stream channels or banks and stabilizing vegetation, or deposition of sediment within streams. Operations specifically prohibited include:
  - Machine travel within 3 m of the active channel (except at appropriate extraction trail crossings – see below).
  - Excessive removal or damage of sapling-sized trees (<10 cm d.b.h) and shrubs within 3 m of the active channel.
  - Felling of trees into streams or within 3 m of the active channel. Trees accidentally felled into streams will be left where they fall.
  - Disturbance of the forest floor which leaves ruts or a significant area of exposed mineral soil within 15 m of the active channel (see Module 5.3). Ruts and significant patches of exposed mineral soil will be promptly rehabilitated to prevent sediment from entering a water feature. Patches of mineral soil exposed by natural events are excluded.

- No contamination of streams by foreign materials is permitted. Specifically,

- The use and storage of fuels will be carried out in accordance with the Liquid Fuels Handling Code.
- No equipment maintenance (e.g., washing or changing oil) is permitted within 100 m of the active channel.

9.3.2 Guidance to Operators during Operations

- Extraction trails may cross LPS streams. However, crossings will be minimized and will follow the operating practices described in Module 5.3 to minimize rutting, compaction, and mineral soil exposure that could lead to erosion and subsequent transport and deposition of sediment in streams. Temporary crossing structures will be used when appropriate and construction will follow the principles described in Module 5.1.

9.4 Rich Lowland Black Ash Forest

- Mapped stands of rich lowland hardwood-dominated forest.

- Pockets of rich lowland hardwood-dominated forest ≥0.5 ha in size encountered during operations.

9.4.1 Standards

- No harvest, renewal, or tending operations are permitted that exceed the rutting and compaction standards for selection, shelterwood, and commercial thinning operations (see Module 5.3) or disrupt hydrological function (see Module 5.3).

- Harvest will follow direction for rich lowland hardwood-dominated forest found in MNRF's silviculture guides.
- Landings and aggregate pits are not permitted within rich lowland hardwood-dominated forest.

9.4.2 Guidance to Operators during Operations

- Reasonable efforts will be made to avoid crossing rich lowland hardwood-dominated forest with extraction trails during the frost-free period. During all seasons, crossings will be minimized and will follow the appropriate operating practices described in Module 5.3 to minimize potential site damage and effects on hydrological function.

- Reasonable efforts will be made to avoid constructing new roads within rich lowland hardwood-dominated forest. When necessary, road construction will follow the design principles in Module 5.1 to minimize disruption of hydrological function.

9.4.3 Best Management Practices

- Develop conditions on regular operations for other locally uncommon or sensitive forested wetland types as per Module 3.2.1.

9.5 Mapped Permanent Non-Forested Wetlands

- Mapped, open wetlands, treed wetlands, and brush & alder wetlands. Polygons identified as brush & alder that are not wetlands (e.g., old fields) are excluded. In the field, the boundary between non-forested wetlands and forest is defined where the canopy cover of trees ≥10 cm d.b.h is ≥25% or the canopy cover of trees ≥1.5 m tall is ≥30%.

9.5.1 Standards

- No harvest, renewal, or tending operations are permitted that will result in significant damage to wetland vegetation or disruption of hydrological function. Operations specifically prohibited include:
    - Machine travel during the frost-free period within 3 m of those portions of the wetland dominated by open water or non-woody vegetation (i.e., vegetation communities with <25% canopy cover of trees, tall (≥1 m high) woody shrubs such as alder or willow, or low (<1 m high) woody evergreen shrubs such as Labrador tea or leatherleaf).
    - Excessive removal or damage of sapling-sized trees (<10 cm d.b.h) and shrubs within 3 m of those portions of the wetland dominated by open water or non-woody vegetation.
    - Felling of trees during the frost-free period into, or within, 3 m of those portions of the wetland dominated by open water or non-woody vegetation. Trees accidentally felled into those portions of the wetland dominated by open water or non-woody vegetation will be left where they fall.
    - Operations that leaves ruts, a significant area of exposed mineral soil, or disrupt hydrological function (see Module 5.3) within the wetland itself or within forest that is within 15 m of those portions of the wetland dominated by open water or non-woody vegetation. Ruts or significant patches of exposed mineral soil will be promptly rehabilitated.

- No contamination of wetlands by foreign materials is permitted. Specifically,
    - The use and storage of fuels will be carried out in accordance with the Liquid Fuels Handling Code.
    - No equipment maintenance (e.g., washing or changing oil) is permitted within 15 m of non-forested wetlands.

9.5.2 Guidance to Operators during Operations

- Reasonable efforts will be made to avoid crossing wetlands with extraction trails during the frost-free period. During all seasons, crossings will be minimized and will follow the appropriate operating practices described in Module 5.3 to minimize potential site damage and effects on hydrological function.

9.5.3 Best Management Practices

- Apply above direction to unmapped non-forested wetlands ≥0.5 ha in size encountered during operations.

9.6 Woodland Pools

- Recognizable temporary bodies of open water encountered during operations that have a surface area ≥500 m^2 (i.e., about 25 m in diameter if circular), are

not ponds (i.e., <0.5 ha in size), and are not connected to a stream or associated with a mapped non-forested wetland.

9.6.1 Standards

- No harvest, renewal, or tending operations are permitted that will result in deposition of sediment within, or reduction of the water-holding capacity of, woodland pools. Operations specifically prohibited include:
    - Machine travel within 3 m of the high-water mark of pools during the frost-free period.
    - Excessive removal or damage of sapling-sized trees (<10 cm d.b.h) and shrubs within 3 m of the high-water mark of pools.
    - Felling of trees into pools or within 3 m of the high-water mark of pools during the frost-free period. Trees accidentally felled into pools will be left where they fall.
    - Disturbance of the forest floor that leaves ruts or a significant area of exposed mineral soil (see Module 5.3) within 15 m of the high-water mark of pools. Ruts or significant patches of exposed mineral soil will be promptly rehabilitated.

- No contamination of pools by foreign materials is permitted. Specifically,
    - The use and storage of fuels will be carried out in accordance with the
    - Liquid Fuels Handling Code.
    - No equipment maintenance (e.g., washing or changing oil) is permitted within 15 m of the high-water mark of pools.

9.6.2 Guidance to Operators during Operations

- Retention of residual forest within and adjacent to pools will be based on forest unit as follows:
    - Selection and shelterwood forest units – Trees will be retained in, and within, 3 m of the high-water mark of pools to provide =70% canopy cover; residual forest will be retained within 15 m of the high-water mark of pools to provide amphibian cover.
    - Clearcut forest units – Unmapped residual patches required to meet the direction in Module 3.2.2 will preferentially be connected to pools. When connecting residual patches to pools, trees will be retained in and within 3 m of the high-water mark to provide overhead shade and residual forest will be retained within at least 15 m of the high-water mark to provide amphibian cover.

9.7 Stick Nests

9.7.1 Stick Nest Occupied by Barred Owl, Broad-Winged Hawk, Common Raven, Cooper's Hawk, Great Horned Owl, Long-Eared Owl, Merlin, Red-Tailed Hawk, Or Sharp-Shinned Hawk

9.7.1.1 Best Management Practices

- Nest trees used by the American kestrel, boreal owl, eastern screech-owl, northern hawk owl, or northern saw-whet owl that are a potential safety risk should be retained in an unharvested residual patch (≥20 m radius).

9.7.2 Inactive nests of great gray owl, northern goshawk, or red-shouldered hawk

- Nests not known or suspected to have been occupied (see glossary for definitions) at least once within the past 5 years that are
  - >400 m from a primary nest or
  - <400 m from a primary nest but in poor repair.

- Primary and alternate nests within nesting areas where all nests within the nesting area have been documented as unoccupied for ≥3 consecutive years.

- Direction applies to nests known before, or found during, operations.

9.7.3.1 Standards

- If the nest is in good repair, harvest is not permitted within 20 m; the patch may be counted as residual forest (see Module 3.2.2). Otherwise, the nest tree only will be retained as a wildlife tree.

9.7.2.1 Guidance to Operators during Operations

- No timing restrictions on harvest, renewal, or tending operations around inactive nests.

9.7.3 Unoccupied stick nests built or used by barred owl, broad-winged hawk, common raven, Cooper's hawk, great horned owl, long-eared owl, merlin, red-tailed hawk, or sharp-shinned hawk or by an unknown species

- Unoccupied nests known or suspected to have been built or used by the barred owl, broad-winged hawk, common raven, Cooper's hawk, great horned owl, long-eared owl, merlin, red-tailed hawk, or sharp-shinned hawk.

- Unoccupied nests built by an unknown species but unlikely to have been built by the northern goshawk or red-shouldered hawk.

- Direction applies to nests known before, or found during, operations.

9.7.3.1 Standards

- Harvest, renewal, and tending options:

  Species: Broad-winged hawk, merlin, sharp-shinned hawk, or unknown small stick nest (<75 cm diameter)

  Retain: The nest tree will be retained as a sharp-shinned hawk, or wildlife tree if the nest is in good repair unknown small stick nest (<75 cm or the nest tree contains a good fork.

  Species: Barred owl, Cooper's hawk, common raven, great horned owl, long-eared owl, red-tailed hawk or unknown large stick nest (≥75 cm diameter)

Retain: The nest tree will be retained in unharvested residual (≥20 patch radius) if the nest is in good repair (may be counted as residual forest). Otherwise, the nest tree will be retained as a wildlife tree.

Guidance to Operators during Operations

- No timing restrictions on harvest, renewal, or tending operations around nests.

9.7.4 Unoccupied stick nests built or used by barred owl, broad-winged hawk, common raven, Cooper's hawk, great horned owl, long-eared owl, merlin, red-tailed hawk, or sharp-shinned hawk or by an unknown species

- Unoccupied nests known or suspected to have been built or used by the barred owl, broad-winged hawk, common raven, Cooper's hawk, great horned owl, long-eared owl, merlin, red-tailed hawk, or sharp-shinned hawk.

- Unoccupied nests built by an unknown species but unlikely to have been built by the northern goshawk or red-shouldered hawk.

- Direction applies to nests known before, or found during, operations.

9.7.4.1 Standards

- New roads, landings, will not be constructed within 20 m of nests of the barred owl, Cooper's hawk, common raven, great horned owl, long-eared owl, red-tailed hawk, or unknown large stick nests.

9.7.4.2 Guidance to Operators during Operations

- Reasonable efforts will be made to avoid constructing new roads, landings, and aggregate pits within 20 m of nests of the broad-winged hawk, merlin, sharp-shinned hawk, or unknown small stick nests.

- No timing restriction on operations associated with roads and landings around unoccupied nests.

9.7.5. Unoccupied nests/ communal roosts in cavities previously used by American kestrel, barred owl, boreal owl, eastern screech-owl, great horned owl, northern hawk owl, northern saw-whet owl, or chimney swift

- Unoccupied nests/communal roosts in cavities known or suspected to have been used by the American kestrel, barred owl, boreal owl, eastern screech-owl, great horned owl, northern hawk owl, northern saw-whet owl, or chimney swift.

- Direction applies to nests known before, or found during, operations.

9.7.5.1 Standards

- Harvest, renewal, and tending options:

  Species: Trees used by American kestrel, boreal owl, eastern screech-owl, northern hawk owl, northern saw-whet owl

Retain: The nest tree will be retained as a wildlife tree if not a safety concern.

Species: Trees used by barred owl, great horned owl, chimney swift
Retain: The nest/communal roost tree will be retained in an unharvested residual patch (≥20 m radius) (may be counted as residual forest).

9.7.5.2 Guidance to Operators during Operations

- No timing restrictions on harvest, renewal, or tending operations around nests/roosts.

9.7.5.3 Best Management Practices

- Nest trees used by the American kestrel, boreal owl, eastern screech-owl, northern hawk owl, or northern saw-whet owl that are a potential safety risk should be retained in an unharvested residual patch (=20 m radius).

9.7.6. Nests of waterfowl, grouse, sandhill cranes as well as least bittern and yellow rail (which have been identified as Species at Risk) containing eggs encountered during forest management operations

- Known nests of waterfowl, grouse, or sandhill cranes containing eggs encountered during operations.

9.7.6.1 Standards

- Known nests of waterfowl, grouse, or sandhill cranes containing eggs encountered during operations will not be destroyed1.

9.7.6.2 Guidance to Operators during Operations

- Reasonable efforts will be made to minimize disturbance of known nests of waterfowl, grouse, or sandhill cranes containing eggs encountered during operations.

9.7.6.3 Best Management Practices

- Harvest, renewal, and tending operations should be avoided within 10 m of known nests containing eggs. Specifically,
    - Trees should be retained within 10 m of known nests containing eggs (patch may be counted as a clump of wildlife trees).
    - Trees should not be felled into the area within 10 m of known nests containing eggs.
    - Heavy equipment should not travel within 10 m of known nests containing eggs.

9.7.7 Nests of songbirds or other small birds containing eggs or young encountered during forest management operations (which also includes the Olive-sided Flycatcher and Canada Warbler listed as Species at Risk)

- Known nests of songbirds or other small birds containing eggs or young encountered during operations.

9.7.7.1 Standards

- Known nests of songbirds or other small birds containing eggs or young encountered during operations will not be destroyed. *In this context, destruction means the complete or partial damage of the nest structure or its contents (i.e., attendant birds, eggs, or young).*

9.7.7.2 Guidance to Operators during Operations

- Reasonable efforts will be made to minimize disturbance of known nests of songbirds or other small birds containing eggs or young encountered during operations. *In this context, disturbance means the incidental interference with breeding activities such as egg laying, incubation, brooding, or feeding of young.*

9.7.7.3 Best Management Practices

- Harvest, renewal, and tending operations should be avoided within 3 m of known nests containing eggs or young. Specifically,
    - Trees should be retained within 3 m of known nests containing eggs or young (patch may be counted as a clump of wildlife trees).
    - Trees should not be felled into the area within 3 m of known nests containing eggs or young.
    - Heavy equipment should not travel within 3 m of known nests containing eggs or young.

9.7.7.4 Procedure for crossing Utilities

- Access, Harvest, renewal, and tending operations must contact utility authorities prior to crossing
    - Purpose is to ensure worker safety and inform utility company of planned operations
    - Utilities include Hydro One, TransCanada Pipelines, and Railway crossings

Module 10

Standard Operating Conditions for Soil and Water Conservation

for the

2021-2031 Nagagami Forest Management Plan

10.0 Soil and Water Conservation

10.1 General

Maintaining healthy forest soils and natural water movement across, through, and within forest soils is critical to maintaining healthy forest ecosystems. The combination of all the direction (standards, guidelines, and best management practices) constitutes a comprehensive approach to soil and water conservation. If any single piece of direction in this Module is applied in isolation it will not be adequate to conserve soil and water resources. However, if applied in an integrated fashion the probability of adverse impacts will be minimized.

This Module addresses the conservation of soil and shallow ground water resources during forest management activities, with a focus on site disturbance resulting from forest management operations. It is important to recognize that site disturbance does not necessarily imply site damage. The effects of site disturbance can be long-lasting or short-lived. Site disturbance can occur through both natural and human-caused forces, which may be important to long-term ecosystem function. The direction in this Module is intended to lower the probability of site damage occurring but does not necessarily represent the threshold where site disturbance would begin to be considered site damage.

There are many ways to categorize the types of site disturbance that may be associated with forest management activities. The following Modules present site disturbance direction under the categories of:

1. Rutting,
2. Compaction,
3. Erosion,
4. Nutrient loss,
5. Loss of productive land, and
6. Hydrological disruption.

All of the above categories are linked and it is difficult to discuss one without thinking about the other. When considering direction for one type of site disturbance, managers are encouraged to consider opportunities for synergy with the direction in other disturbance categories and other Modules of this guide. For example, soil rutting often results in compaction and both rutting and compaction can influence water infiltration and movement which can lead to erosion.

Well-informed advanced planning is a critical step in conserving soil and water resources. This includes all aspects of planning such as; block design, road location, landing location, skid trail layout, machinery selection, timing of entry, duration of entry, operator training, contingency planning, and renewal and tending planning. Modules 10.3 to 10.8 detail a number of standards, guidelines, and best management practices that are designed to prevent, minimize, or mitigate negative site disturbance or site damage occurrences. The importance of prevention, through advanced planning and good information, cannot be overstated.

10.1.1 Standards

- The standards and guidelines in Modules 10.3 to 10.8 apply equally to operations within the regular harvest area and areas of concern.

- The standards and guidelines in Modules 10.3 to 10.8 apply equally to all harvest, renewal, and tending operations.

10.1.2 Guidelines for Forest Operators

- The direction in Module 5.3.1-5 does not apply to roads, aggregate pits, landings, or roadside work areas.

- When assessing site disturbance of a current operation, any site disturbance associated with previous entries will be taken into consideration.

- Throughout this reference manual terms such as rut, significant mineral soil exposure, and hydrological disruption are used. To understand the various pieces of direction that refer to these terms, it is important to first understand the definition. Module 10.2 defines terms associated with site disturbance as used in this reference manual. These definitions by themselves are not to be construed as a standard or guideline. Refer to the individual Module where a definition is used to understand the application.

10.2 Definition of Terms Associated With Site Disturbance

10.2.1 Rut

- Continuous trench or furrow created by machine traffic that is **≥4 m long and ≥30 cm** deep. When operating on shallow soils the lesser of depth to bedrock/large boulders or 30 cm will be used.

- Ruts may be empty, filled with water, or filled with varying amounts of intermixed organic and mineral soil/debris. In cases of concentrated heavy rutting it may be difficult to distinguish individual ruts. Furrows, scalps, trenches, etc., created specifically for site preparation purposes are not considered ruts. This definition alone does not imply that ruts in excess of these dimensions are not allowed or that damage has occurred when these dimensions are exceeded.

10.2. 2 Extraction Trail

- Anywhere a machine being used for extraction (skidder, forwarder, etc) has traveled within the block (excluding travel on roads, landings, and roadside work areas).

10.2.3 Significant mineral soil exposure

- Patches of mineral soil exposed by machine traffic that are individually larger than $4m^2$ in size or have an aggregate area that exceeds 5% coverage.

- The percent coverage of exposed mineral soil will be measured over a 15 m by 15 m area when operating adjacent to water, and the harvested area of the AOC for all other values (e.g. American ginseng).

10.2.4 Disruption of hydrologic function

- Alteration of the physical characteristics of a site such that the natural flow of water, on or below the surface, is significantly impeded (e.g. by damming), accelerated (e.g. by channelization), or diverted (e.g. by ditching).

- The natural "watering up" process associated with the removal of forest cover is not considered a hydrological disruption.

10.3 Rutting and compaction

The objective of this Module is to provide direction that prevents, mitigates, and/or rehabilitates rutting and compaction associated with forest management operations.

- In general terms, a rut is a trench or furrow created by machine wheels or tracks caused by soil displacement and/or compaction. Compaction is the compression of soil caused by a machine load that exceeds the strength of the soil to resist it. Compaction can occur independent of rutting through machine vibration and slipping of tires. Rutting may occur independent of compaction (e.g., on saturated soil), but in general a rut can be thought of as a visual proxy for compaction.

10.3.1 Standards

10.3.1.1 All silviculture systems

- No more than 50% of any 0.1 ha circle (i.e. approximately 18m) is permitted in ruts.

- No ruts permitted that channel water into, or within 15 m of lakes, ponds, rivers, streams, woodland pools, or those portions of mapped non-forested wetlands dominated by open water or non-woody vegetation (see Module 4.1).

  Refer to the Forest Operations Prescription (FOP) found on Operations map for any conditions on timing of operations and machinery selection.

10.3.1.2 Selection, shelterwood, and commercial thinning:

- No more than 2% of any 20-ha area (or the operating block if less than 20 ha) is permitted in ruts.

10.3.1.3 Clearcut silviculture system (excluding commercial thinning):

- Shallow soils (<30cm): No more than 5% of any 20-ha area (or the operating block if less than 20 ha) is permitted in ruts.

- All other soils: No more than 10% of any 20-ha area (or the operating block if less than 20 ha) is permitted in ruts.

10.3.2 Guidelines for Forest Operators

10.3.2.1 All Silviculture Systems:

- The area of rutting and compaction will be minimized.

- Refer to Module 10.9 as to the approach for measuring the percent coverage, depth, and length of a rut, definition of roadside work area, and percent coverage of extraction trails.

10.3.2.2 Selection, Shelterwood and Commercial Thinning:

- Area in extraction trails will be minimized and will not exceed the following values unless a higher value is required to meet objectives and specified in the FMP (silviculture ground rule, conditions on regular operations, etc).
    - 20% for selection
    - 30% for shelterwood and thinning

- Ruts on long slopes, or on short steep Modules, can cause significant erosion that can degrade sites and prevent future use of extraction trails. Refer to Module 10.9 for criteria to identify when stabilization, repair, and/or work stoppage must occur to mitigate effects.

10.3.2.3 Clearcut silviculture system:

- In clearcut operations, where advanced regeneration is a significant contributor to future forest development (e.g., CLAAG, HARP, white pine advanced regeneration, tolerant hardwood understory, etc.), the area in extraction trails will be minimized. On sites susceptible to rutting, achievement of this guideline will have to be balanced against the increased rutting that may occur when extraction is concentrated on fewer trails.

10.3.3 Best Management Practices

- Refer to Module 10.8 for a number of suggested strategies and techniques to minimize rutting and compaction during field implementation.

- Field staff, particularly equipment operators, have been trained as required in the identification of susceptible sites, rutting, and compaction. This will continue as the need arises with the intent to foster a common understanding at the management unit in order to gain efficiencies and maximize consistency in application.

- Identifying susceptible sites in advance of operations (e.g., via ground reconnaissance, air photos, remote sensing). Forest operators currently use maps which display topographic features, interpolated streams and FOP background to plan in advance of operations. Maps and background information is maintained on management unit website in order to ensure that the most current information is communicated to operators and supervisors.
    - The site disturbance susceptibility table in Module 10.9.2 can be used as a starting point.
    - Interpolated stream segments identified on operations maps can be used as an additional source of information for the possible location of susceptible sites. The outputs of these tools are not to be thought of as values requiring verification, but equally they should not replace normal field reconnaissance.

- Selection of areas for harvest should be made in recognition of susceptible sites and a balance sought between stands in which operations can occur at any time of the year

and those where operations are best carried out in the winter or the driest part of the summer.

- Where other factors allow, summer/winter balance should be maintained during implementation such that flexibility is maintained across multiple years.

- When selecting areas for harvest, the availability, flexibility, and limitations of equipment in relation to susceptible sites should be considered.

- When practical and feasible, access should be planned to prevent or minimize site damage (e.g., build roads well in advance of operations so lack of access is not a recurring reason for off-season operations on susceptible sites).

- Where practical and feasible, maintain a choice of operating blocks within an economical floating distance to be able to move from susceptible areas during periods of abnormal environmental conditions (e.g., high rainfall, early thaw, late freeze) with minimal interruption in production.

10.4 Erosion

The objective of this Module is to provide direction that prevents, mitigates, and/or rehabilitates erosion associated with forest management operations. Erosion can be defined as the overland movement of soil particles by water, wind, or gravity. Erosion can be the result of either natural causes or human site alterations. Operations that are not implemented with erosion controls in mind can destabilize previously stable ground and result in localized erosion. Erosion can result in loss of productive land (e.g., blow sand) and provide a source point for further erosion. The associated deposition of sediment can smother the roots of residual trees and may result in the harmful alteration, disruption, or destruction of fish habitat. Due to the relatively flat topography in most of Ontario, large-scale erosion is not normally a significant concern. Localized occurrences of erosion are most often visible following localized site disturbances. It is recognized that not all indicators of site instability are visible; however, if reasonable precautions are taken, the chance of localized occurrences of erosion can be minimized.

10.4.1 Standards

- No specific standard - refer to direction for roads (Module 2), and water crossings (Module 4), and rutting and compaction (Module 10.3).

10.4.2 Guidelines for Forest Operators

- Decommission main skid trails constructed on steep slopes by installing water bars, diversion ditches, straw bales, etc. at appropriate intervals or critical landform junctures to filter runoff water through surrounding vegetation.

- Minimize mineral soil exposure to that required for efficient operations and effective silviculture (consistent with SGR for the site).

- Mitigate or rehabilitate areas of significant erosion that are transporting, or are likely to transport, sediment into a water feature.

10.4.3 Best Management Practices

- Operators can refer to Module 10.9 for a partial list of strategies and techniques that may be used to minimize rutting and compaction during operations.

- Operators can identify susceptible sites (Module 10.9 as a starting point) to minimize the risk of erosion on those sites.

- Front line supervisors can communicate the nature and, if possible, the location of susceptible sites to field supervisors and equipment operators, including silviculture operators.

- Training of field staff, especially equipment operators, in the recognition and significance of soil exposure and erosion will be considered as the need arises.

- Areas susceptible to mass wasting (river banks, soil over steep bedrock, etc.) should be treated carefully.

- On broad sloping alluvial areas, care should be taken not to orient the cut blocks such that the entire width (with slope) of the area is cut in a single operation.

- Rehabilitate areas where soil has been deposited on the roots of residual trees and an impact on productivity is likely.

10.5 Nutrient loss

The objective of this Module is to provide direction that prevents and/or mitigates unintentional nutrient loss associated with forest management operations. Nutrient loss can be described as the release and off-site transport of nutrients following forest management operations. With present commercial rotations, on most sites, nutrient removals due to logging are not significant and total nutrient levels may actually increase over time. Natural nutrient cycling should replenish nutrient capital lost due to forest harvest with minimal impacts on ecosystem productivity if rotation lengths are sufficiently long. Sites where the trees hold a relatively high proportion of the nutrient capital are regarded as most susceptible.

Post-harvest nutrient loss due to leaching is also a consideration in determining site sensitivity. Leaching is greatest when no plant material is available to absorb and store nutrients on the site. Therefore, site susceptibility is related to how fast the site can be occupied by vegetation after harvest.

Relatively little additional direction to address nutrient loss has been included as the Module 10.4 already provide detailed direction for specific site and treatment combinations that may be susceptible to nutrient loss.

10.5.1 Standards

- Refer to FOP background in advance of operations. Maps and background information is maintained on management unit website in order to ensure that the most current information is communicated to operators and supervisors.

10.5.2 Best Management Practices

- Operators can refer to Module 10.9 for a partial list of strategies and techniques that may be used to minimize the risk of nutrient loss during operations on susceptible sites.

- Operators can identify susceptible sites (Module 10.9 as a starting point) to minimize the risk of nutrient loss on those sites.

10.6 Loss of productive land

The objective of this Module is to provide direction that minimizes, and accounts for, the loss of productive land associated with forest management operations. Loss of productive land can be described as the conversion of previously productive forest land to a long-term or permanently non-forested condition as a result of forest management operations. Some loss of productive land through the conversion to other land types (e.g., permanent roads) is inevitable in even the most efficient forest operations.

During the forest management planning process, the loss of productive land associated with forest management operations is forecast and any effect incorporated into the development of the long-term strategic direction. The actual area of non-forest or non-productive forest (roads, landings, slash/debris piles, grass, brush, etc.) created through forest management operations is either spatially incorporated into the inventory, or otherwise reflected in the inventory attributes. Larger and more permanent features (e.g., primary roads) are normally represented as polygons in the inventory while the effects (if any) of smaller and less permanent features (e.g., slash/debris piles) are reflected in the stand description (e.g., stocking).

10.6.1 Standards

- None

10.6.2 Guidelines

- Minimize the amount of area being converted to non-forest (e.g., roads and landings) to that required for efficient operations.

- Unutilized woody material, which accumulates at roadside, is smothering productive land, and is expected to remain unutilized, will be piled, redistributed, or otherwise treated to increase the area available for regeneration (e.g., Fig 5.3i).

10.6.3 Best Management Practices

- As a rule-of-thumb, strive to keep the area of roads and landings to less than 2% on a per block basis (it is recognized that operational constraints may require more road in some circumstances and that less road may be possible, and therefore desirable, in others)

- Operators can refer to Module 10.9 for a partial list of strategies and techniques that may be used to minimize loss of productive land during operations.

- Avoid piling unutilized fiber on productive non-forest cover types (e.g., brush and alder).

10.7 Hydrological impacts

The objective of this Module is to provide direction that prevents and/or minimizes hydrological impacts associated with forest management operations. Hydrological impacts can be described as changes in the potential rates and/or patterns of surface and shallow groundwater flow through various parts of the forest ecosystem.

10.7.1 Standards

- None (refer to Module 4 and 5 for related direction)

10.7.2 Guidelines for Forest Operators

- Based on local conditions, operators should explore reasonable alternatives for crossing organic and saturated mineral soils during the frost-free period. Conditions on regular operations will be developed to minimize the potential for hydrological disruption when crossing during the frost-free period cannot be avoided.

- Based on local conditions, operators should take reasonable precautions to ensure harvest, renewal, and tending operations will not result in disturbance of the forest floor that impedes, accelerates, or diverts water movement within recognizable ephemeral streams, springs, seeps, and other areas of groundwater discharge connect to lakes, ponds, rivers, or streams.

10.7.3 Best Management Practices

- Operators can refer to Module 10.9 for a partial list of strategies and techniques that will minimize site disturbance (e.g., rutting) during operations and thereby minimize the risk of hydrological disruption.

- Training of field staff, especially equipment operators, in the recognition and significance of disruption of hydrological function will be considered as the need arises.

- Use hydrological modeling tools (e.g., flow accumulation, topographic index, etc.) to help identify possible unmapped drainage, localized wet areas, mapped drainage that is misplaced or may not exist, or hydrological linkages (i.e., ephemeral streams, springs, seeps, and other areas of groundwater discharge). Forest operators currently use maps which display topographic features, interpolated streams and FOP background to plan in advance of operations. Maps and background information is maintained on management unit website in order to ensure that the most current information is communicated to operators and supervisors. The outputs of these tools are not to be thought of as values requiring verification, but equally they should not replace normal field reconnaissance.
    - Communicate the location and importance of these features to supervisors and operators in advance of commencing operations in the local area.
    - Avoid building roads or skidding through areas of accumulated flow, particularly when near a water feature.

- On very dry sites, careful logging practices that retain some trees, shrubs, advanced growth, and slash can reduce overall ground temperature and reduce excess drying. Refer to Module 8 for a more detailed discussion of retaining structure on site.

- Where possible, locate roads and landings so skidding and forwarding does not have to cross natural drainage patterns.

- Regenerate susceptible sites as quickly as possible to restore transpiration and moderate hydrological changes.

10.8 Suggested Strategies and Techniques to Minimize Site Disturbance During Harvest, Renewal, and Tending Operations

10.8.1 Rutting and compaction

- Encourage advanced planning of access within the block (i.e., skid trails and landings) by the operator and/or supervisor.
- Identify and locate primary trails and convergence zones where the ground has the greatest load-bearing capacity.
- Limit and flag the number of main skid trails and ensure all operators are aware of their location.
- In fully mechanized operations, limit travel of forwarder and skidder to harvester trails
- On main trails or on convergence zones, consider strengthening with slash matting where damage is likely to occur. In some cases, gravelling of main skid trails should be considered.
- Keep skid trails as straight or as gently curving as possible.
- In clearcut systems, normally distribute skid trails widely, while avoiding wet pockets or other susceptible areas. In partial cut systems, normally concentrate skid trails to minimize the extent of damage to residual stems.
- Forwarding/skidding should not deviate from designated extraction trails.
- When only a few machine passes can create a significant risk of compaction or rutting, concentrate machine traffic on main trails and mitigate any damage that occurs (i.e., do not disperse traffic).
- Recognize some damage to main trail areas is expected as a cost of minimizing damage to residual trees and the rest of the site, and have a plan to mitigate damage on main trails;
    - In partial cut systems, winch as much wood as possible to the skidder to minimize the extent of skid trails.
    - Use high floatation equipment if summer logging chances include large areas of organic soil and monitor closely to ensure damage is minimal.
    - If it is not possible to completely avoid susceptible wet areas such as swales, seeps, and wetlands;
        - reach into them with a felling head or winch wood out of them using conventional cut and skid systems;
        - use feller-bunchers to cut and bring bunches back to solid ground;
        - use “hoe-chucking” (e.g., excavator) to move wood to solid ground;

  - use brush and tops to increase the load-bearing capacity of the soil, recognizing some disturbance may occur;
  - if machine traffic must enter the swale area, avoid crossing the entire width, but rather approach from both sides and reach into the middle;

- On sites susceptible to compaction and rutting, use slash matting on equipment traffic areas; for example, place slash in front of machines when using cut-to-length systems that limb and top on site.

- Recognize that the use of slash matting or other mitigative techniques may disguise some types of soil disturbance and consider moving blocks if excessive use of mitigation is required.

- In general, during harvesting and site preparation operations, minimize the disturbance/removal of soil organic layers and topsoil.

- Operations should be allowed or discontinued based on the actual compaction and rutting which is occurring. As examples:
  - in the late winter/early spring, it may be possible to operate on night shift and until mid-morning, if frost conditions are satisfactory, and then stop operations when the ground warms up in the afternoon,
  - a shut down for a few days may be required after a period of high precipitation.

- Whenever possible, non-productive areas (such as rock outcrops) or other relatively high load-bearing soils should be selected for landing sites.

- Proper day to day on-site planning is important. Operators need to be competent, properly trained, and aware of the objectives and plans for specific sites.

- Continually monitor during and after operations to mitigate any damage that may occur and better forecast where future problems may occur.

- In winter conditions where the soil is not adequately frozen, compacting the snow with a feller-buncher prior to wood extraction, or blading off some snow from trails and landings before use, will allow the frost to penetrate deeper. Sufficient wait time at sub-zero temperatures (at least overnight) must be allowed for the soil to freeze properly before the benefit can be realized.

- Skid or forward wood as soon as possible to avoid the “watering up” that can occur quickly (days) after felling.

- Where possible locate roads and landings so that skidding can occur in a downhill direction. Adjust this strategy when working on erosion-prone soils.

- Where possible, turn machinery on the road or other high strength soil rather than in the cut block.

- Where machine design allows (e.g., some forwarders) travel empty in reverse to avoid soil damage caused by turning in the block.

- On high hazard sites (see Appendix 5.3b), or when conditions are such that rutting can occur, reduce loads on the skidders to distribute the weight evenly to all four wheels (rule of thumb – 2/3 of a full load).

10.8.2 Erosion

- Where safety permits, skid across slopes and avoid skidding with the slope.

- Avoid road and landing layout that requires skidding or forwarding up or down steep slopes.

- Where skidding or forwarding with the slope is necessary, consider dispersing traffic so repeat traffic does not cause rutting and/or compaction.

- Where skidding or forwarding with the slope is necessary, use chains or other implements to increase traction to avoid tearing the root mat and organic layers.

- Where skidding or forwarding with the slope is necessary, avoid turning on the slope to minimize tearing of the root mat and organic layers.

- Consider extremely steep slope areas as inoperable and avoid machine travel. The specific steepness threshold should be determined locally, based on site conditions and available machinery.

- Consider the use of winter-only operations on very high-hazard sites (e.g., very fine sand with thin organic layers).

- Avoid harvesting areas that clearly will erode as a result of the removal of trees (e.g., discontinuous shallow organic layer over bedrock).

- Where possible, use low or no mineral soil exposure renewal options such as straight planting, hand scalping, seeding, and natural regeneration in steep and/or erosion-prone areas.

- Where safety permits, ensure site preparation runs across the slope and avoid aligning with the slope.

- Site prepare to provide the minimum amount of mineral soil exposure to achieve silvicultural objectives. On high-hazard sites, favour discontinuous scalp over continuous trench site preparation methods.

- Within the limits of operational efficiency, use the smallest prime-mover possible to achieve site preparation goals.

- On high-hazard sites, avoid broadcast site preparation (e.g., ploughing, summer blading) that exposes excessive amounts of mineral soil.

- Favour fast-growing species and immediate renewal in steep or erosion prone areas;

- Identify ruts or furrows on slopes that are channelling runoff and causing erosion. Limit further erosion by filling these ruts with slash, debris, or non-erodible soil.

- Divert mid-slope ruts that are, or are likely to, channel water with cross drains, obstacles, or berms (i.e., water bars). This is particularly applicable to extraction trails in partial harvest systems.

- On high-hazard sites, monitor soil condition during and after operations to mitigate any damage that may occur and better forecast where future problems will occur.

- Where possible, disperse unutilized slash over areas that are prone to erosion (e.g., fine sands that are easily eroded by wind and on slopes).

10.8.3 Nutrient Loss

- Give preference to logging methods that leave debris and unutilized fibre in the cut area (e.g., cut-to-length, tree length, etc.) over logging methods that process and pile debris and unutilized fibre at roadside (e.g., full-tree).

- Use winter harvest operations to conserve nutrients on site (leaf fall and root stores).

- Where possible, re-distribute unutilized slash and chipper waste back over the cut area in a manner that will not interfere with silviculture or diversity objectives.

- Maintain a diversity of tree and plant species on site, including hardwood and alders, to improve the capture and cycling of nutrients.

- Leave some trees (potentially non-crop trees) un-harvested to serve as nutrient sinks to capture mobile ions made available immediately following harvest and site preparation.

- Consider delaying the use of herbicide to release young conifer plantations (e.g., spruce) until they are ready to capture the nutrients on the site.

- On very shallow sites, or sites with undulating topography, use high flotation (low impact) equipment to maintain the integrity of the surface organic layer, and prevent rutting or compaction in the deeper soil inclusions. This is especially important during wet weather conditions when the organic layer or soil is saturated.

- Post-harvest prescriptions and renewal efforts should be carried out as quickly as possible on shallow soil sites to encourage full site occupancy. This should also help to prevent problems with erosion and loss of nutrients.

- Lower nutrient demanding species, such as jack pine, should be matched to nutrient-poor sites. The use of fast-growing species is advisable to ensure rapid reforestation and reduce the erosion risk.

10.8.4 Loss of productive land

- All roads should be marked on the ground in advance of construction, preferably the corridor as well as the center line.

- Develop a block plan for operational roads and communicate the plan to the operators. Alternatively, encourage operators to develop a block plan in advance of harvesting and construction.

- Locate branch and operational roads to ensure operators are skidding the maximum cost-effective distance.

- Avoid excessive use of turn-around and loop roads.

- Use winter-only access options where delivery schedules and silviculture requirements permit.

- Pre-determine the number and location of landings and communicate with the operator. Identify contingency landings to adapt to localized situations, such as encountering susceptible areas or unmapped streams that may change the skidding plan.

- Use shovel equipment (excavator, backhoe, etc.) rather than bladed equipment (dozers, etc.) to build roads to minimize width of disturbed areas.

- Whenever possible, non-productive areas (such as rock outcrops) should be selected for landing sites. When doing so, ensure they are far enough from natural drainages and other values to minimize the risk of introducing sediment.

- Where feasible, use equipment combinations that can maximize the distance between roads (e.g., forwarders).

- Where feasible, select machinery combinations that maximize within-block processing to minimize slash and debris piles.

- Practice environmentally friendly, zero discharge maintenance and re-fuelling to ensure no soil contamination occurs.

- Pile roadside wood as high as safety permits to minimize the area of landings.

- Keep bush inventories low by using “hot logging” to minimize the number of landings. This approach should be balanced with the potential for rutting and compaction as a greater area of the block converges on fewer landings.

- Within the bounds of road-use strategies, site-prepare and otherwise regenerate operational roads, ditches, and landings that are no longer needed.

- Educate supervisors and operators on the short- and long-term effects of excessive conversion to non-forest to enable informed planning and decision-making.

- Where safety permits and other values will not be compromised, burn piles of slash, debris, and unutilized fibre.

- Where possible, re-distribute unutilized slash and chipper waste back over the cut area in a manner that will not interfere with silvicultural or diversity objectives.

- Do not use site preparation techniques which rely on piling slash in unproductive windrows or mounds unless these will be burned.

- Maximize the use of unutilized processing debris for road construction. (e.g., brush matting swamp crossings, fill wet holes, stabilize steep road banks, stabilize ditches).

- Encourage the use of unutilized processing debris to rehabilitate gravel pits, borrow pits, or other human-caused unproductive sites.

10.9 Methodology for Measuring Ruts

The following is the methodology for assessing the extent of site disturbance associated with forest operations on the Nagagami Forest.

10.9.1 General Principles

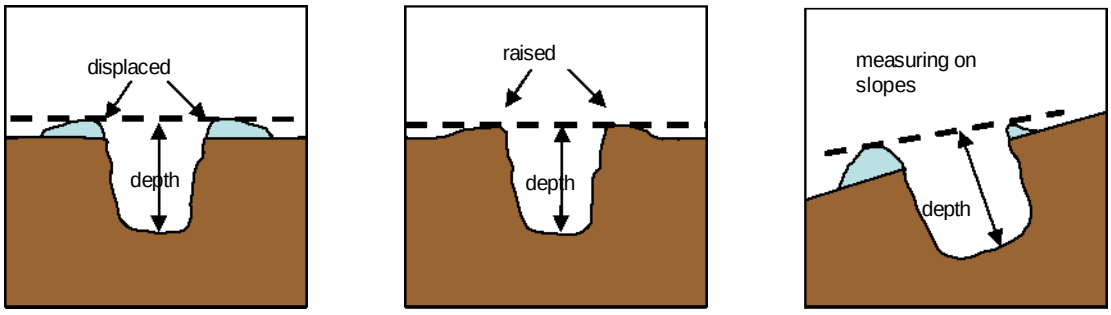
- On full tree and tree length operations, roadside work areas include areas at the edge of the road where concentrated activity other than skidding (piling, delimbing, slashing, chipping, slash piling, etc.) is necessary to receive and process wood from the rest of the harvest area. The roadside work area normally extends 30 to 40 meters from the edge of the road and may only occur along the length of some portions of the road, depending on the pattern of operations. Additionally, 'funnel' zones may also be created that extend beyond the road side work areas to accommodate skid trails that converge on landings that concentrate due to topography or soil conditions.

- Similarly, operations that process in the block and deliver short-wood to roadside may have a narrower roadside work area than full tree and tree length operations, associated funnel zones are larger as they are normally associated with clam bunk forwarders and require additional area to accommodate numerous products that may be processed (i.e. sorting for pulp, sawlog, veneer, poles etc.). As such the road side area will normally extend 20 to 25 meters from the edge of the road.

- When the depth varies across the width of the rut (i.e., perpendicular to the direction of travel), the deepest point is to be measured as the depth.

- When a rut has been filled, or partially filled with soil, litter, water, or debris, the depth should be measured as if the rut had not been filled. This includes areas in organic soil where churning and mixing of surface and sub-surface organic layers have occurred. In some circumstances it will be difficult to determine the unfilled depth.
- When determining if a potential rut is at least 4 m long, the length is measured as the contiguous portion that is deeper than 30 cm (or depth to bedrock / large boulders), and is not to be an average depth measurement where some of the length is less than 30 cm deep.

- Depth is to be measured from the surface of the soil, including organic layers (LFH) if present. The following figure provides the suggested approach to measuring depth.



10.9.2 Field Assessment

Step 1: The block will be stratified to delineate areas where the direction applies;

1. Roads, landings, and roadside work areas will be excluded

2. Area will be stratified into clearcut, shelterwood, or selection harvest systems (reference Module 10.3.1 applicable harvest system for % that is permitted in ruts)

3. Were applicable areas of shallow soils will be stratified in clearcut areas

Step 2: Percent coverage is to be determined based on a line transect method. The total distance of the line that intersects ruts as a percentage of the total line length should determine the areal coverage over the sampled area. The following approach to layout of transects will be used unless:

- The inspector will pick the center of the most disturbed area on the block, establish 3 random 100 m transects, offset by 120°, within a 250m radius circle around that point.

- The percent cover would be the total length of the line that intersects a rut or trail divided by 3.



- *Note:* When not practical and feasible to use this field method to assess the extent of site disturbance associated with forest operations an alternate method or approach to dealing with these areas may be developed (e.g., via ground reconnaissance, air photos, remote sensing). Both MNRF and industry compliance staff must agree to this alternate approach for measuring the percent coverage, if different that describe above.

- On sites where the site disturbance associated with forest operations has exceeded the criteria specified in the various Modules of this reference manual or FMP, MNRF and industry will jointly develop stabilization, repair, and/or work stoppage requirements for the site to mitigate effects. Short term mitigative measures may be required to mitigate off site movement of sediment, however, the final approach required to meet this objective should be left to the discretion of the operator if desired results are achieved. Normally, silvicultural treatment packages that will successfully re-establish regeneration on the site will be deemed to have mitigated effects of the site disturbance and will be the long-term measure of success.

Module 11

Standard Operating Conditions for Salvage and Biofibre Harvest

for the

2021-2031 Nagagami Forest Management Plan

11.0 SALVAGE AND BIOFIBRE HARVEST

11.1 Salvage Harvest

Historically, the practice in Ontario following fire or blowdown was to encourage the utilization of killed and damaged trees and associated green or undamaged trees, where economical. This practice changed somewhat following implementation of the Forest Management Guide for Natural Disturbance Pattern Emulation (NDPE guide). The NDPE guide encouraged forest managers to avoid salvage logging in a portion of an area that had burned, retain some fire-origin habitat, features and processes, retain some residual trees, and, wherever possible, minimize the amount of unburned area harvested in a salvage proposal. With respect to salvage harvest in areas of blowdown, or where forests had been subject to disease, insect infestation, or other natural disturbance factors (e.g., ice storms), biodiversity issues were not previously addressed.

The direction in this Module will apply to all salvage operations, regardless of the origin or type of natural disturbance that led to the decision to engage in salvage operations.

The direction in this Module will be implemented using FMP products (e.g., delineation of salvage boundary) and conditions on regular operations.

11.1.1 Standard for Salvage Operations in Natural Disturbances

- Consistent with direction in Module 8.6, salvage harvest will normally retain a minimum average of ≥ 25 stems/ha ≥ 3 m in height and ≥ 10 cm d.b.h. This is the minimum average for the harvest block (or minimum average per 20 ha if the harvest block ≥ 20 ha) contingent upon sufficient numbers and types of standing stems being available and, in a condition, suitable for retention.

11.1.2 Guideline for Forest Operators

- Salvage operations will consider strategic landscape objectives.

- When finalizing boundaries of a salvage operation that results from wildfire, the area of undisturbed forest included in the salvage operation will be minimized. Every effort will be made to follow the edge of the disturbance but final boundaries must consider operational aspects such as limitation dictated by surrounding topography, requirements for landings, offsetting of blowdown edge during line establishment to address safety of forest workers etc.

- When finalizing boundaries of a salvage operation that results from blowdown, insect infestation, or other factors (e.g., ice storms), the area of the salvage operation can include undisturbed forest. When salvage operations include undisturbed area, the direction in Module 8 will apply.

- The trees retained following salvage operations will have a range of distribution patterns (relatively even-spaced to some clumping), recognizing operational limitations, and subject to the availability of standing trees.

- FOP's will consider timing of entry and/or other operational factors to minimize unnecessary site disturbance that could potentially result in ecological damage (e.g., avoid salvaging a swamp in the frost-free period).

- Reasonable efforts will be made to avoid windrowing or crushing of downed woody material.

11.1.3 Best Management Practices

- Whenever practical and feasible, the trees retained following harvest will be the same species and size classes as trees that would have been retained following normal harvest (as per direction in Module 8.6).

- When leaving un-salvaged patches of disturbed forest, give preference to areas adjacent to, or in close proximity to, the undisturbed forest.

- Consider limiting or concentrating skid trail coverage when salvage operations are extended for ≥ 3 years, particularly in fire salvage areas.

- In fire salvage areas, preferably retain conifers such as jack pine and black spruce as wildlife trees.

11.2 Biofibre Harvest

11.2.1 Introduction

Forest biofibre refers to forest resources from Crown lands that are not being utilized for other forest products (e.g., sawlog) and that are made available under an approved forest management plan (MNRF Forest Directive 03 02 01). Forest biofibre is comprised of:

1. Unmerchantable timber such as undersized wood, cull trees or portions of trees,
2. Individual trees and stands of trees that are merchantable, and
3. Trees that may be salvaged as a result of a natural disturbance.

Biofibre may be the primary (e.g., otherwise unmarketable stand of low-grade hardwoods) or secondary (e.g., undersized material after optimizing recovery of veneer and sawlog) product of a planned harvest operation.

By limiting the scope of biofibre to material made available under an approved forest management plan, biofibre can be thought of as simply an additional forest resource, similar to saw logs or pulpwood, which can be used to produce forest products (e.g., bioenergy, wood pellets, biochemical's). The objective of this Module is to clearly specify how the direction applies to the harvest of biofibre, and to make explicit the existing restrictions on what can be removed through forest harvesting regardless of the product derived.

The conditions and procedures described in this Module apply to all areas of operations.

11.2.2 Standard

- Unless otherwise specified, the CRO's Toolkit will apply equally to all planned harvest areas regardless of the product derived.

11.2.3 Guideline for Forest Operators

- Stumps and all below ground portions of a tree are not available for utilization as a forest product. Movement or removal associated with normal operations (construction of roads, landings, and skid trails; renewal and tending; slash piling; etc.), including incidental movement or removal during harvest operations is permitted, but will be minimized to that required for efficient operations. Removal for forest health purposes is permitted.

- Organic matter that is not part of a harvested tree (including boles, branches, roots, bark, leaves, needles, debris, soil carbon, etc) will remain on site. Movement of such material for access or silvicultural purposes is permitted.

Module 12

Changes to Operations Protocol

for the

2021-2031 Nagagami Forest Management Plan

12.0 Purpose

This protocol has been specifically designed for use by forest operators working on the Nagagami Forest. Its primary function is to increase the awareness and understanding of the FMP requirements when finding new or misidentified values or identifying values that no longer exist. This procedure is consistent with the notification requirements specified in the Forest Information Manual (FIM) and the Forest Management Planning Manual (FMPM). Maintaining values information remains the responsibility of the MNRF through (LIO). Values maps are subsequently prepared for the FMP and updates are provided to the SFL holder after any values change.

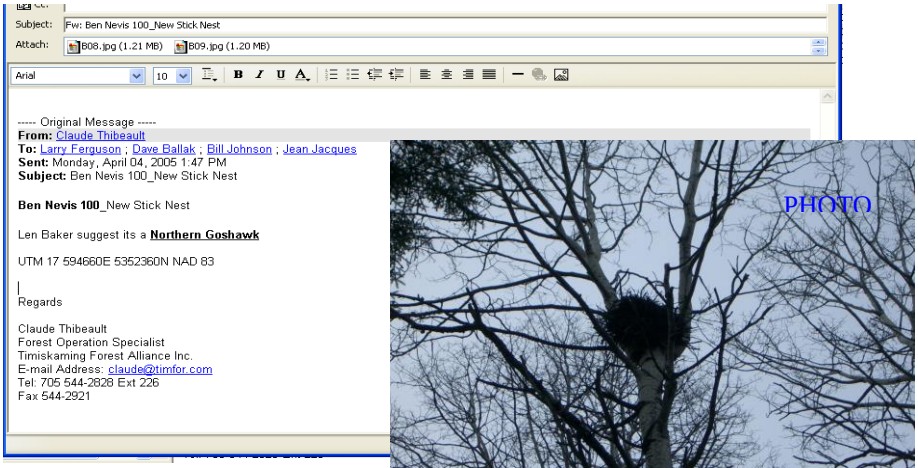
12.1 Procedure

12.1.1 New Value Identified or Correction to Location of Existing Value (Type 1):

When, during the implementation of operations (i.e. during the AWS year) an unmapped value or incorrectly mapped value is identified, the SFL holder will be notified with the type of value, location, and the proposed prescription. An indication of when operations will be affected will also be provided (i.e. active operation vs. during boundary marking). Forest operations can continue if an appropriate AOC prescription exists in the FMP and can be implemented:

1. Information is forwarded to the SFL holder indicating location, value type and proposed prescription (this usually includes a photo and map) immediately. If an AOC prescription exists in the FMP and can be applied, operations may continue. If confirmation of the type of value encountered is required, in order to apply the appropriate prescription, the MNRF will confirm the value based on information provided or through a site visit.

   Example of email notification provided to SFL Holder:



VALUE TYPE AND LOCATION

2. The SFL holder will review the information to ensure it does not conflict with any other operations in AWS and will email details to the MNRF Biologist/Forester, usually as a separate e-mail by harvest block so that a record of the notice can be filed. The SFL holder will provide details of the location to allow the MNRF to confirm the value, if desired. If confirmation of the type of value encountered is required, a confirmation timeframe will be agreed to between the SFL holder and the MNRF. If no appropriate AOC prescription is available in the FMP, an amendment will be required and operations cease until the amendment has been approved.

3. The SFL holder will submit a *Changes to Operations* document to MNRF upon discovery.

4. MNRF District staff will enter/update the value in the LIO database and notify the SFL holder when this has occurred.

12.1.1 Mapped Value No Longer Exists (Type 2):

The correct procedure for removing a value is as follows:

1. Information is forwarded to the SFL holder indicating the location, value type and proposed prescription (this usually includes a photo and map) for the mapped value that no longer exists. If the value is not associated with a species at risk or does not affect a third party, the AOC may be removed and normal operations resume.

2. The SFL holder reviews the information and emails details to the MNRF Biologist/Forester, usually as a separate e-mail by harvest block so that a record of the notice can be filed. The SFL holder will provide details of the location to allow the MNRF to confirm the value, if desired.

3. If the value is associated with a *Species at Risk*, MNRF has **3** business days (or longer if mutually agreed to) to verify the value no longer exists and the AOC can be removed. Where a third party is associated with a non-existent value (e.g. cultural heritage), the MNRF will confirm whether the value no longer exists and the AOC can be removed, within an agreed to time frame. The SFL holder may assume the value no longer exists and the AOC can be removed if the MNRF does not provide verification within 3 business days or the agreed to timeframe.

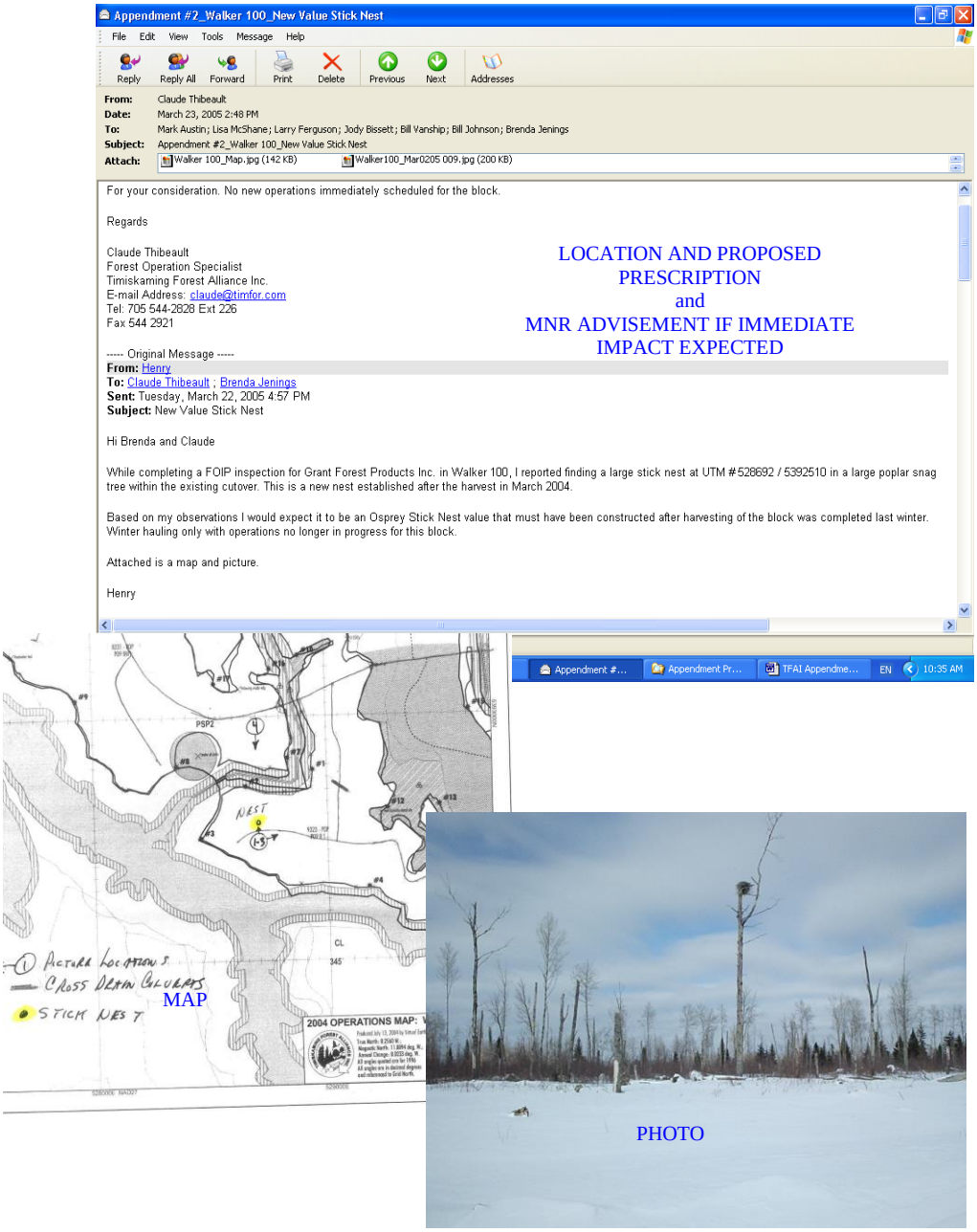
4. The SFL holder will submit a *Changes to Operations* document to MNRF upon discovery.

5. MNRF District staff will enter/update the value in the LIO database and notify the SFL Holder when this has occurred.

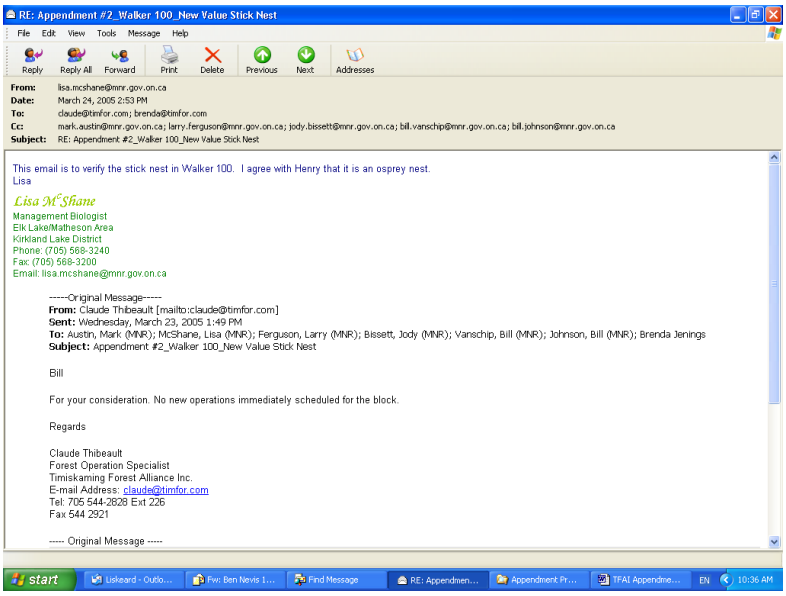
Example of email notification provided by harvesting contractor to SFL Holder:

Step 1 - Email describing **value type**, **location** and **suggested prescription** by Inspector. Note: Attachments must include **photograph** and **map** to expedite verification process.

Step 2 – SFL holder reviews AWS and advises of MNRF if "value may be negatively affected by current forest operations".



Step 3 - MNRF may confirm value type and prescription, if desired.



Step 4 – Harvest contractor implements prescription specified in FMP as part of normal operations.

Step 5 – SFL holder prepares and files the *Changes to Operations* document in block file.

Module 13

Boundary Line Marking Reference

for the

2021 to 2031
Nagagami Forest FMP

13.0 Introduction

13.1 Purpose

This module has been specifically designed for use by approved boundary markers working on the Nagagami Forest. Its primary function is to provide assistance in understanding FMP requirements and to further enhance the line runners' ability in recognizing and accurately reporting a wide range of detailed harvest block information for the companies that employ them. There appears to be a trend developing where Forest companies are increasingly requesting more information from field workers during the preliminary stages prior to harvest. With this in mind there was an attempt during the development of this reference manual to strive for specific objectives, those being:

- to increase the quality and level of consistency in boundary marking throughout the SFL area
- to provide the tools that give the boundary marker the ability to make decisions in the field
- to increase the awareness and understanding of the FMP requirements, in particular the Area of Concern and Values documentation
- to offer information that allows the boundary marker to identify, document and to some degree deal with potentially contentious issues that arise in the field during the boundary marking process

This manual is to be used as a guide only. It was designed as a tool to assist the boundary marker while carrying out their duties on the Nagagami Forest. It should not be interpreted in any manner that might lead to the circumventing of existing legislation and or HPL policy.

13.2 Policy

- All approved allocations and AOC boundary lines will be established on the ground through the employment of Global Positioning System (GPS) technology that is able to achieve sub meter accuracy where this remains practical and economically feasible. Any change to this approach will remain at the sole discretion of the SFL.
- Individual Harvesting Contractors will coordinate and contract out all GPS boundary line marking for their proposed activities, and

13.3 Procedure

The Harvesting Contractor

1. Organizes AWS harvest maps, FRI/SAP/Digital Imagery photographs for their own harvest blocks,

2. Indicates any desired adjustments within the block boundary on a submitted map for shape file update (i.e. identification of intentional/planned residual patches),

3. Indicates additional information requirements that the SFL holder wishes to be recorded, such as planned road locations, water crossing locations, etc.

4. Acts as field contact for line markers to provide scheduling information such as road construction, etc.,

Optional:

5. Optional – Reviews available current aerial photography and accurately delineates the true forest stand boundaries adjacent to alder and/or grass lands, (i.e. identification of true high-water line) in order to provide updated shape files to markers for the purposes of maximizing volume recovery along AOC's,

6. Optional - Indicates any interior block layout that the SFL holder is responsible for and requires to be marked over and above the approved allocation boundary line, such as RTM or RTO viewscape reserves and planned interior residual patches.

SFL Holder (Hornepayne Lumber Limited Partnership):

1. Prepares shape files for all scheduled harvest blocks for distribution to the respective Harvesting contractor available on Nagagami Forest website,

2. Ensures quality control (e.g. GPS settings, information provision and collection, FMP training sessions for markers, line marker competency),

3. Provides documentation control (e.g. maintains boundary line marking record in harvest block file) – Due Diligence,

The Boundary-Marking Contractor:

It is recognized that liability concerns may also arise from the contracting of boundary marking on the Nagagami Forest. These concerns will be addressed by ensuring the following are available.

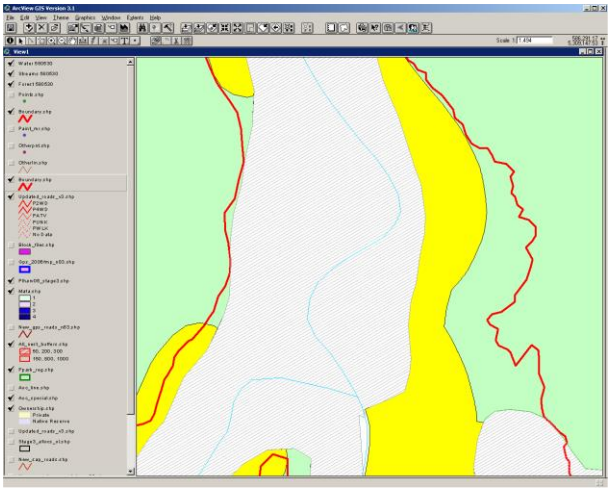
1. Acquires and maintains, during the entire period of the contract, a commercial liability insurance policy in an amount of not less than $2,000,000 pertaining to its activities on the Nagagami Forest and identifying HPL as a named insured,

2. Provides WSIB Certificate of Clearance, or individual waiver if applicable,

3. Employs boundary line markers who are competent and provides a documented record of training, experience and GPS expertise, for the individual markers,

4. Provides the SFL holder with detailed field notes,

5. Prior to commencement of harvest, returns boundary shape file, with field notations to the SFL holder with the associated map for verification of line placement and distribution back to Harvest contractor. *(Note: submitted shapefile line on left acceptable while noisy lines as indicated on right not acceptable).*



6. The Contractor must provide digital field note information in format prescribed by the SFL holder.

Requirements:

The SFL holder must ensure that each line marker employed is competent with proven experience. When requested, the boundary line contractor must provide the SFL holder with proof of these qualifications when contract markers are employed for boundary marking on the Nagagami Forest. Ideally a potential marker would possess all of the qualifications listed below. However, consideration will also be given to those individuals who can meet at least two of the identified categories.

1. Opportunity to obtain in-the-field training. This training to be provided by an approved marker in order to ensure awareness with the standards and procedures required for all aspects of license and Area Of Concern marking.

2. Demonstrated experience marking of forest approval boundaries.

3. The availability of proven technology to assist in marking (e.g. Global Positioning System)

Issues:

- Any on-site irregularities with the AOC documentation must be identified and brought to the attention of the SFL holder.

- All unidentified and/or incorrect values must be reported to the SFL holder.

- Reserves must never be marked narrower than the site conditions permit without an approved amendment, revision or 'change to operation' documentation in place.

- Noticeable errors resulting in too narrow a reserve should be corrected by increasing the reserve to provide adequate protection as per slope guidelines.

- Ensure that random spot checks are completed at the time of marking to verify that width of reserve is consistent with FMP requirements.

- Ensure that reserve widths are established using an offset method from the high-water mark.

- Certain reserve widths are measured from the normal high-water levels of creeks and lakes. The normal high-water level can be difficult to determine, for example in a low, wet area full of cedar or alder. In some situations, these areas are entirely wet and a stream channel is difficult to locate. In such cases the edge can be anywhere from the bush line to a possible stream channel. Consider the fact that where species such as moss, bog laurel, and alder grow, there is often enough of a root mat to act as a good sifter for silt if erosion was to occur, and these areas can be included in a reserve. Good judgement must be used. Consider also the amount of accuracy required. If there is little or no wood to harvest, make the reserve wide. Spot checks of reserve widths must still be carried out along the line (e.g. may include, offsets of stream channel, offset of high water mark edge, physical measurements or laser range finder measurements) In all cases the method of measurement must be documented in the electronic data (i.e. line file) and/or final line marking report submitted by Contractor.

- Any man-made activities found on block (i.e. mining, cabin, road) must be reported to the SFL holder.

- Any conflict with other resource users flagging (i.e. blaze marks, ribbon, mining exploration work, etc.) on the block must be reported.

- Efforts should be made to improve and protect viewscapes as deemed necessary by the Compliance Inspector responsible for the harvest block. The need for a viewscape must be communicated to the SFL holder with the final decision on its necessity resting with the plan author.

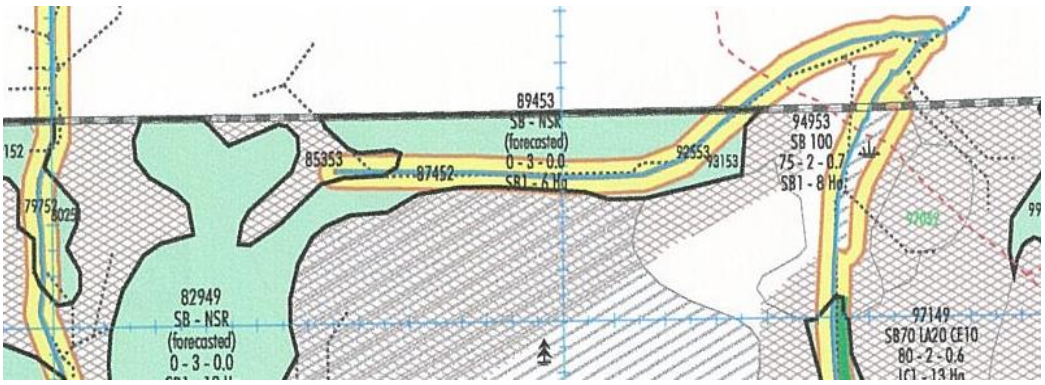
- In certain instances, the establishment of residual patches will occur to address biodiversity prescriptions in the harvest block. In some circumstances the location of these patches may vary from those planned on the *Areas Selected for Operations* map but caution should be exercised as many will be 'fixed' locations that are associated with a value (i.e. nest site) or have been linked to natural features on the landscapes to connect wildlife habitat features such as moose aquatic feeding areas. These can only be moved on approval of the SFL holder. Refer to Module 8 for additional details.

- Modified operations are permitted on some streams where other wildlife habitat is to be encouraged or where there is a decision to emulate forest fire patterns on the landscape. There are various harvest options available and markers must be cognizant of the approved method selected for the sites prior to marking.

13.4 Area of Concern Marking

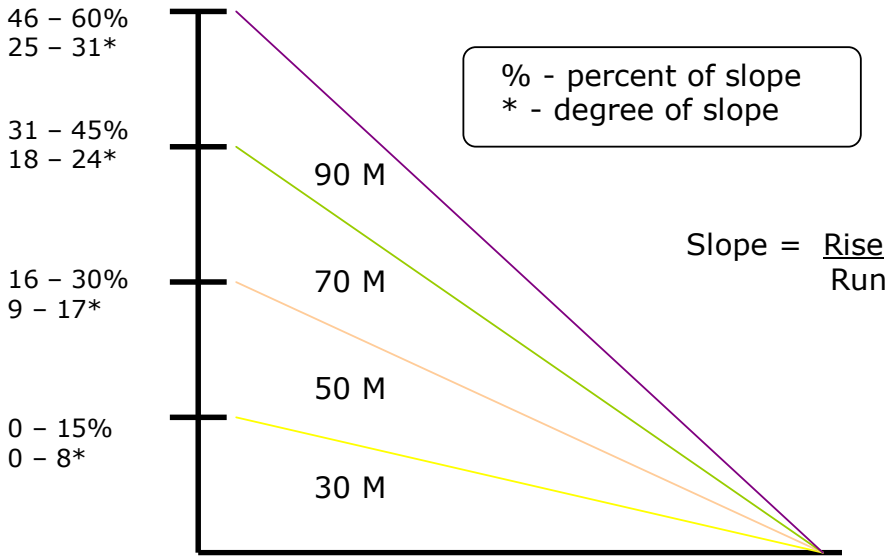
13.4.1 Reserve Widths to Protect Sensitive Flowing Waters: Rivers and Streams

Determination of the streams potential sensitivity has been made during the forest management planning process and symbolized with an orange outline to indicate medium potential streams (MPS).



HPS: In the case of 'Rivers' and 'Stream segments' that have *High Potential Sensitivity* (HPS) to forest operations, slope widths will be based on actual site conditions encountered. That is to say, that as the slope leading to the stream or lake body increases, the width of the reserve must increase proportionally. *Figure 1* illustrates the varying slopes (i.e. indicated in both percent and degrees) and the reserve widths required for each slope. In all cases, reserve widths do not exceed 90 meters for protection of water quality.

Figure 1: AOC width determination using percent or degree of slope

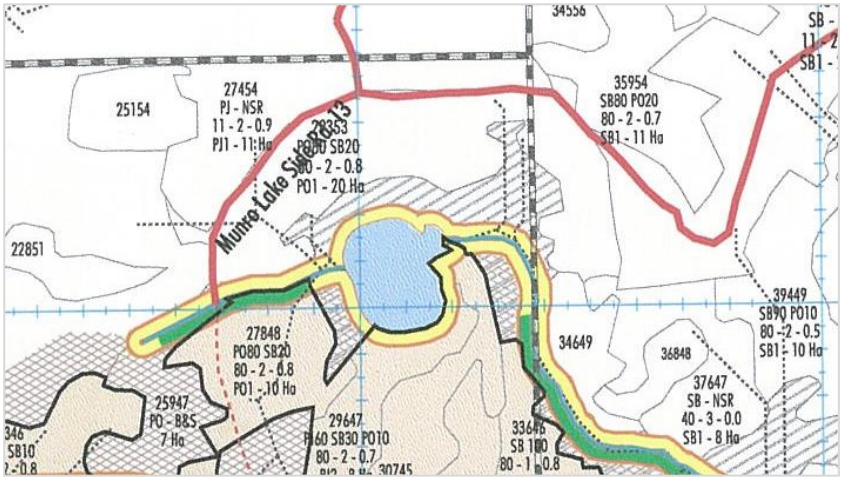


- MPS: AOC reserve widths will be 30 meters in the case of 'stream segments' that have *Moderate Potential Sensitivity to forest operations* (MPS)

- LPS: AOC reserve widths will be 3 meters in the case of 'stream segments' that have *Low Potential Sensitivity to forest operations* (LPS).

- *Modified Harvest Shorelines*: AOC reserve widths will be 3 meters on the shoreline of lakes, and 15 meters on streams and rivers that have been selected for modified operations during the forest management planning process.

13.4.2 Reserve Widths to Protect Water Quality on Lakes and Ponds and Associated Shoreline Forest



Determination of class sizes for lake and pond has been made during the forest management planning process and symbolized with an orange outline to indicate medium potential streams (MPS).

- *Large Lakes, Medium Lakes, Small Lakes and HPS Ponds*, slope widths will be based on actual site conditions encountered. Similar to streams, as the slope leading to the lake body increases, the width of the reserve must increase proportionally (i.e. *Figure 1*). In all cases, reserve widths do not exceed 90 meters for protection of water quality.

- *MPS Ponds:* AOC reserve widths will be 30 meters in the case of stream segments that have *Moderate Potential Sensitivity to forest operations.*

- *LPS Ponds:* AOC reserve widths will be 3 meters in the case of ponds that have *Low Potential Sensitivity to forest operations* (LPS).

- *Modified Harvest Shorelines*: AOC reserve widths will be 3 meters on the shoreline of on Large Lakes, Medium Lakes, Small Lakes and Ponds that have been selected for modified operations during the forest management planning process.

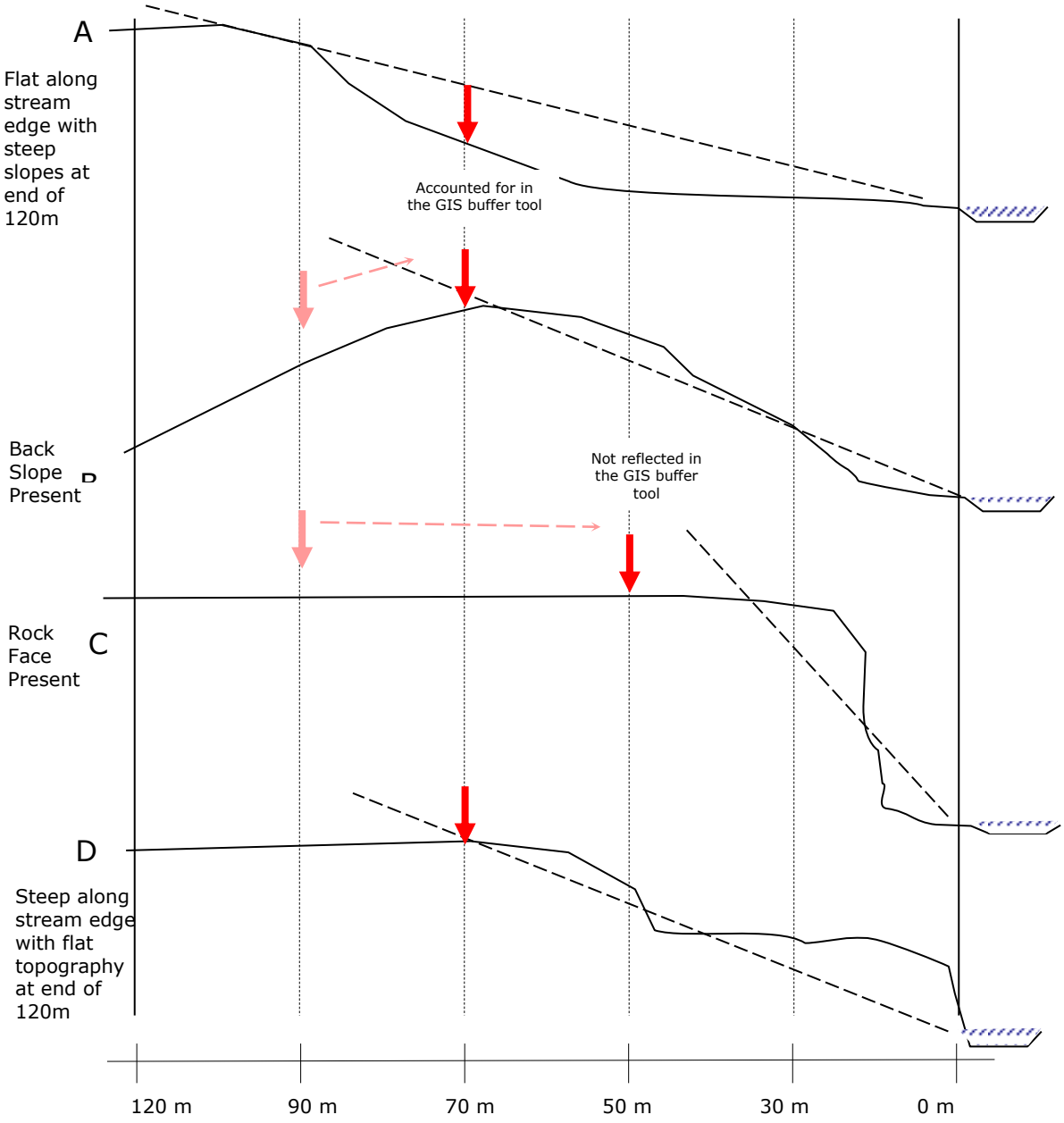
Line Markers must also consider the actual slope conditions encountered along the reserve. The following example demonstrates how the G.I.S. buffer tool would adjust the AOC reserve width where slopes change significantly for the stream edge up into the harvest block.

For examples B and C shown in Figure 2 a 90-meter reserve width would have been selected based on the initial determination of slope angle from the creek edge using the slope guidelines (Figure 1). However, in example B the slope is adjusted for back slope and in example C the marker also notes that the terrain is generally flat from the contour elevation 120 to 50. Therefore, a 70 m (B) and 50 m (C) AOC boundary is established at the top of the slope while still ensuring protection of the stream.

1
2

Figure 2: G.I.S. Buffering Tool for Riparian Reserves

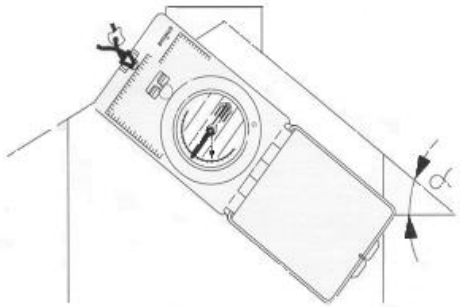
- Buffers applied at the "high water mark", (outside edge of open muskeg or grassland)
- If AOC intersects standing timber , maintain a minimum of 30 m standing timber
- AOC width can be reduced in presence of a "back slope" to crest of hill
- Slope is computed for **maximum** elevation within 120 meters of shoreline considering aspect
- Average slope (i.e. calculated over the distance between the max elevation point and the waters edge) is used to determine the AOC width
- AOC width applied from high water mark



13.4.1 Slope and Height Field Calculations for Silvia/Suunto Compasses

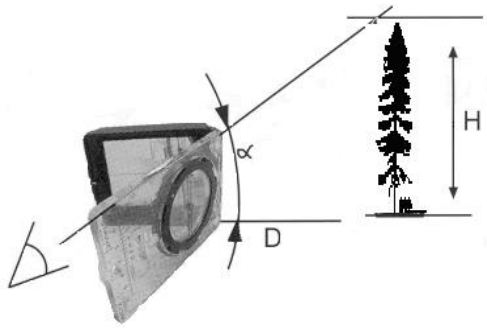
Measuring the Gradient: The scale for declination correction also functions as a scale for the clinometer. This scale is read at the back of the compass. Open the lid completely and set the scale ring at 270. Set the compass on its side and parallel to the surface to be measured. Hold the compass upright. This enables the clinometer indicator to move freely. Finally, read the angle of gradient indicated by the clinometer (see illustration 1).

Illus. 1:



Measuring the Altitude: Set the scale ring at 270^{o} and open the lid approximately 30^{o}. Turn the short edge of the compass at the upright position so that the mirror is on the left. Use the long, upper edge of the compass base plate and aim at your target. You should simultaneously read the angle of altitude through the mirror view (see illustration 2). You will now be able to calculate the altitude of your target using the following equation: H= D tan % *(where, H = altitude, D = distance and % = angle of altitude).*

Illus. 2:



13.5 Determination of High-Water Mark for Line Marking Purposes.

The following operating practices are intended to provide boundary markers with an approved method of determining starting points for the various documented and undocumented Area of Concern reserves on the Nagagami Forest.

Remember, actual field conditions must be considered when determining the point at which the reserve widths are measured.

13.5.1 Width of Shore land Vegetation

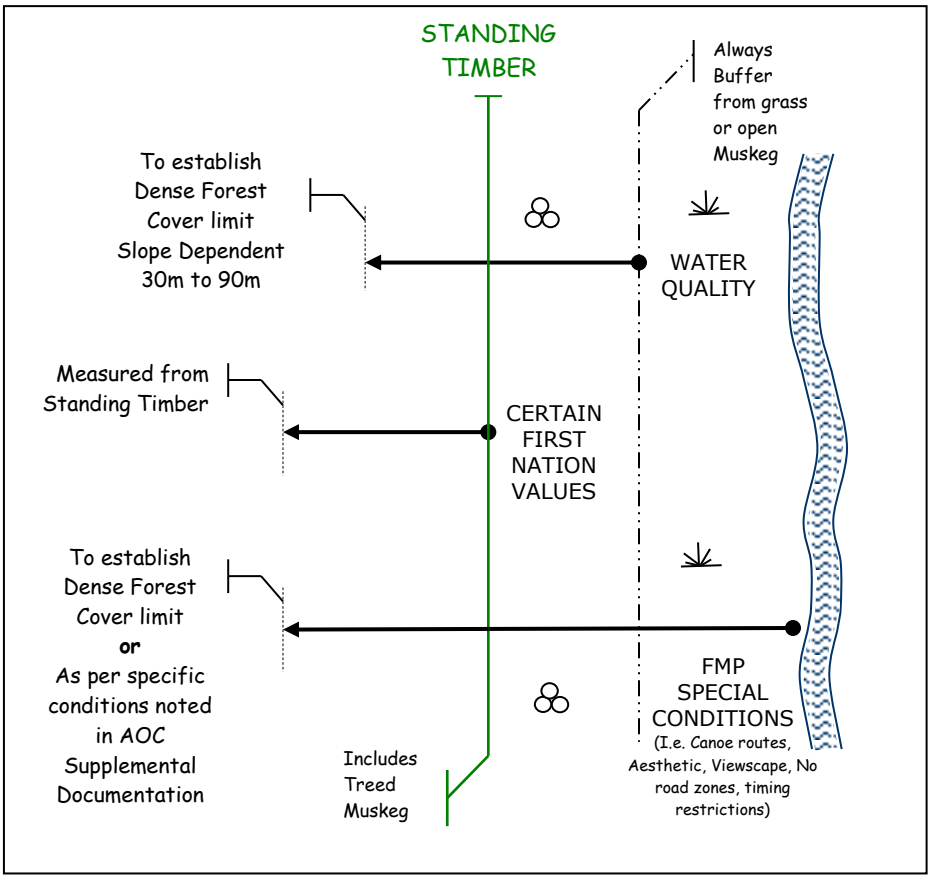
An "area of concern" (AOC) is a defined geographic area within the areas selected for operations which is adjacent to an identified value(s) which are portrayed on the values map for the management unit. Using the MNRF approved implementation manuals (i.e. refer to AOC Supplementary Documentation), a detailed prescription was developed for each AOC in order to prevent, minimize or mitigate possible adverse effects of forest management operations on the value.



30 meter Riparian Fisheries Area of Concern Reserve

These prescriptions have been prepared for either an individual AOC or groups of AOC's that have a common value. For the group of areas of concern, the value to be protected and the selected prescription is common to the group. The prescriptions include reserves (i.e. prohibition of operations), modified operations (i.e. specific conditions or restrictions on operations), or regular operations (i.e. in accordance with the silvicultural ground rules), individually or in combination.

The AOC's are also clearly shown on the harvest operations maps provided to Harvesting contractors at the start of each operating year. These maps reflect the prescription prepared during the FMP as well as any information regarding new values that have been identified during the term of the FMP. As well, all riparian fisheries area of concerns have reserves that are to be measured from the normal high-water mark. The high-water mark zone is defined as the point where seasonal flooding resulting from spring run-off will not scour/erode the soil. Figure 4 provides for a simplified reference diagram with required start points for measuring various types of areas of concern.

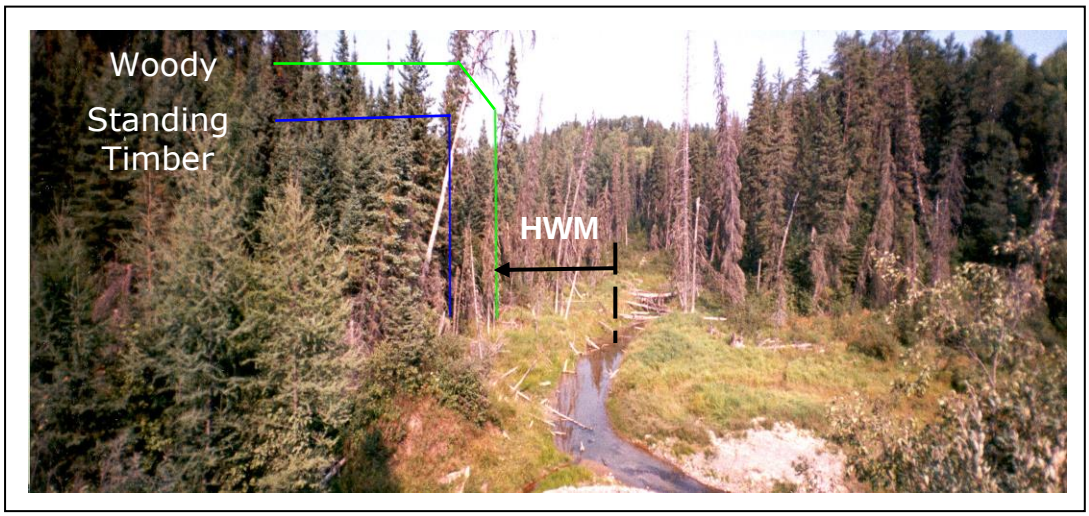


Measure points for various area of concerns encountered

13.5.1 High Water Mark

Estimating the normal high-water mark will be guided by the following principles.

1. AOC reserves will be measured from the normal high-water mark, which is considered to be the point where woody stems, such as willow, dogwood and alder occur as shown below.



Example of Normal high-water mark

- Normal high water is defined as the outside edge of an open muskeg or grassland. The measurement of area of concern widths (i.e. regular, modified) will be made by measuring from the normal high-water mark to determine where regular and/or modified operations are permitted. Refer to Figures 6 to 18 for various examples of conditions that could be encountered in the field.

- All wetlands (i.e. grasslands and open muskeg site types) which extend above the normal high-water mark, within allocated stands, have had a standing timber riparian AOC prescribed. It is recognized that these wetlands provide the same protection from erosion, sedimentation, trapping nutrients etc. that standing trees do. However, a cautionary approach was taken for those grassland areas that extend beyond 300-meters from the stream or lake edge. An assessment of these sites must be made at the time of operations to determine its suitability in providing for fish habitat and wildlife protection (i.e. abandoned beaver pond grassland versus a functioning wetland).

- All grasslands that extend beyond the 300m zones that have been subsequently determined have low wetland function will have reserve dropped. A GIS analysis has flagged these areas for future assessment by the MNRF biologist to determine if modified or regular harvest operations may be permitted. They will be assessed on a case-by-case basis for modified operations and an amendment will only be processed for those zones not previously identified through this GIS analysis.

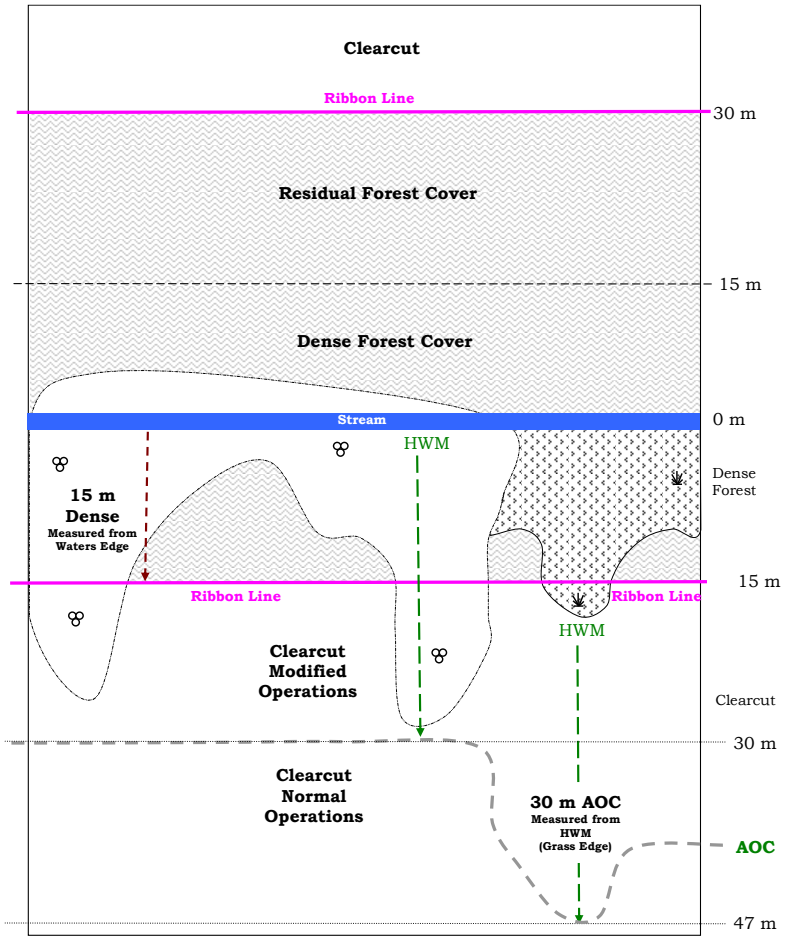
- Where slope dependent AOC's intersect forested wetland (i.e. Treed muskeg) it will be treated as standing timber in the application of this rule.

- Actual site conditions will be taken into account at the time of boundary marking (i.e. incorrect typing of stand boundaries for alder, grassland, tree muskeg, rock etc. as described on the Forest Resource Inventory maps). In the case of AOC boundaries, the actual stand conditions will be used for the purposes of establishing boundary lines.

- AOC widths will be occasionally adjusted downwards to account for the presence of backslope (i.e. area within the prescribed AOC where water flows away from the stream). In such cases, the AOC width will be the first standard buffer width greater than the distance to the crest of the slope (e.g. 49 meters, measure to the crest of the slope, will be marked as a 50 meter AOC ,or 31 meters measured to the crest of the hill, will be marked as a 50 meter AOC).

- Limits of residual forest cover on aquatic features will be measured from the high water mark. The *Residual Forest* cover limit will be marked on the designated travel corridor side of the aquatic feature.

- Limits of dense forest cover on aquatic features will be measured from the stream edge. The *Dense Forest* cover limit will be marked on the side of the aquatic feature designated for modified harvest operations.



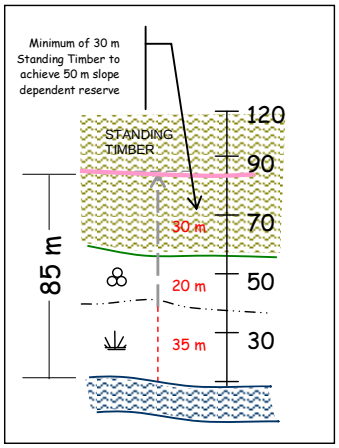
Examples of Various 50m Riparian Reserves

AOC Widths – 30 m and 50

Travel Corridor (Residual)

Modified Harvest (Dense)

Figure 6:



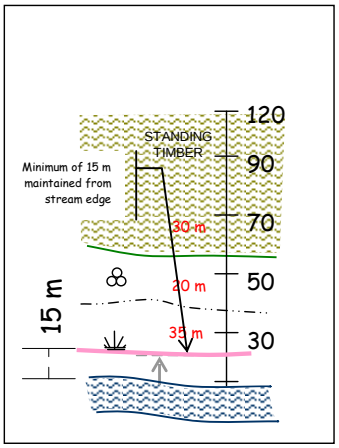
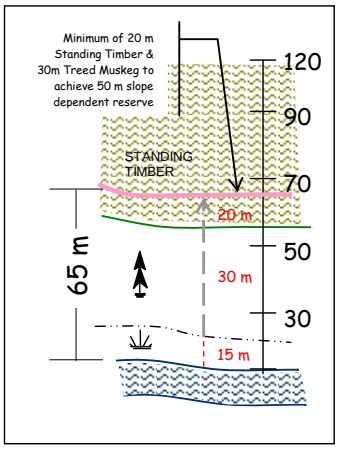


Figure 7:



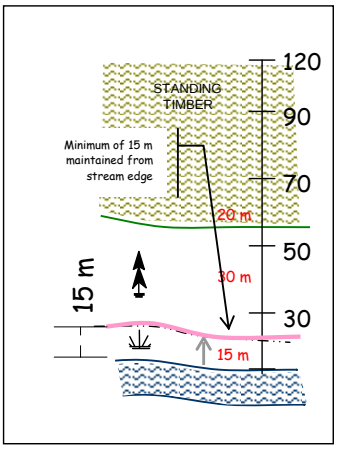
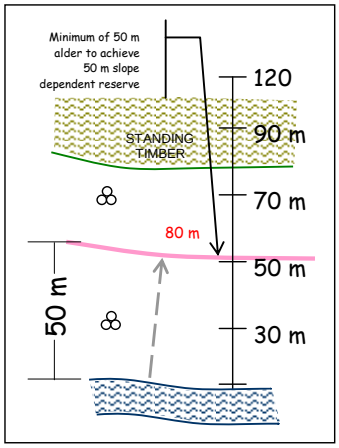
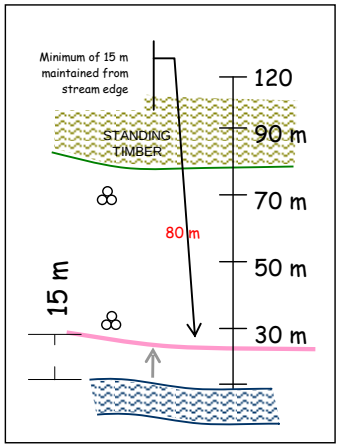


Figure 8:





1

AOC Width – 70 m and 90 m

Figure 9:

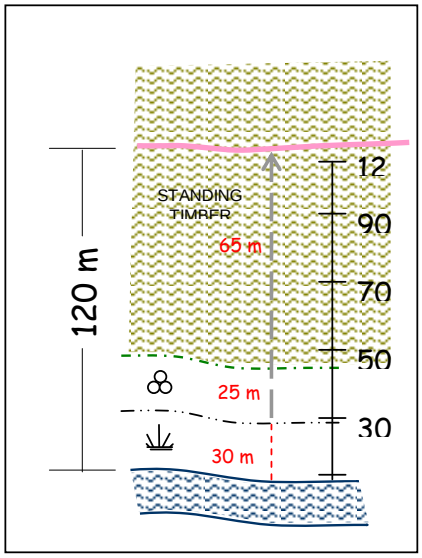


Figure 10:

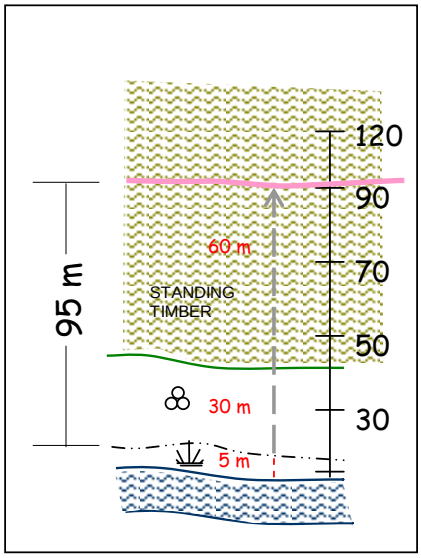


Figure 11

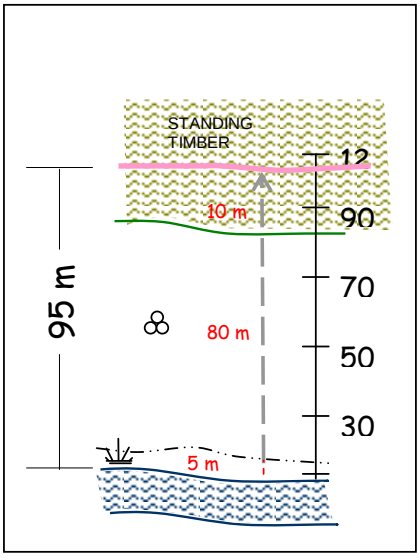
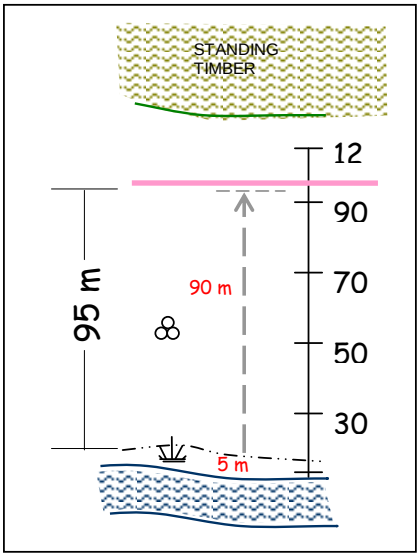


Figure 12:



Note: Modified harvest is not permitted on shorelines where established slope dependent reserve widths are 70 m or 90 m. Full reserve widths are to be established as indicated above.

1

AOC Width – 50

Figure 13:

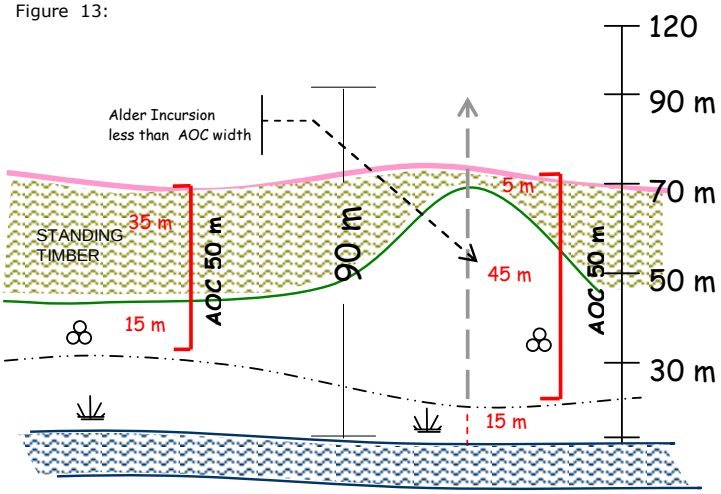
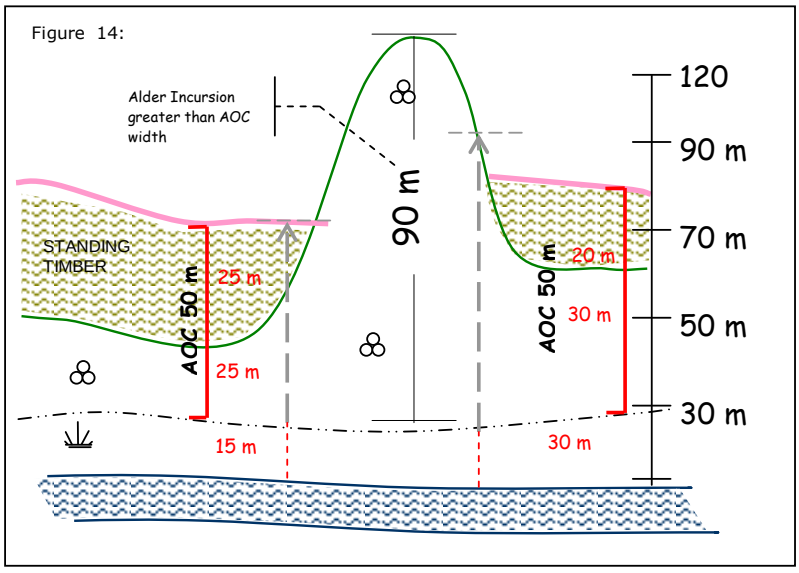


Figure 14:



AOC Width – 50

Figure 16:

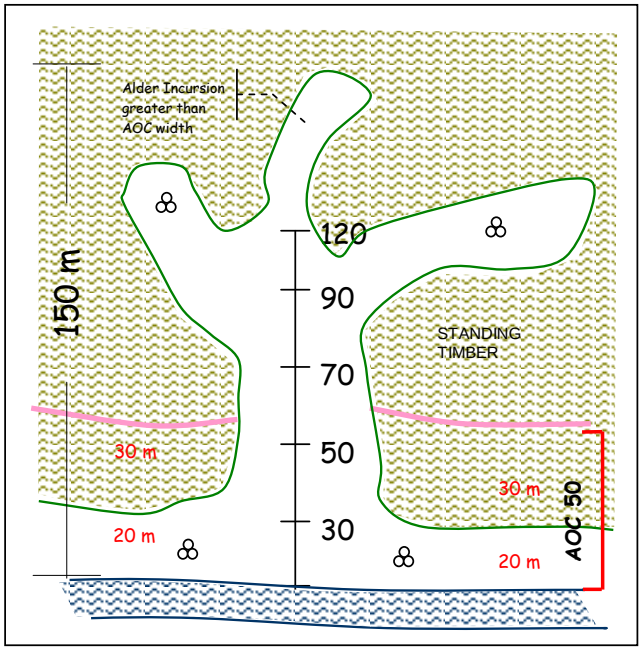
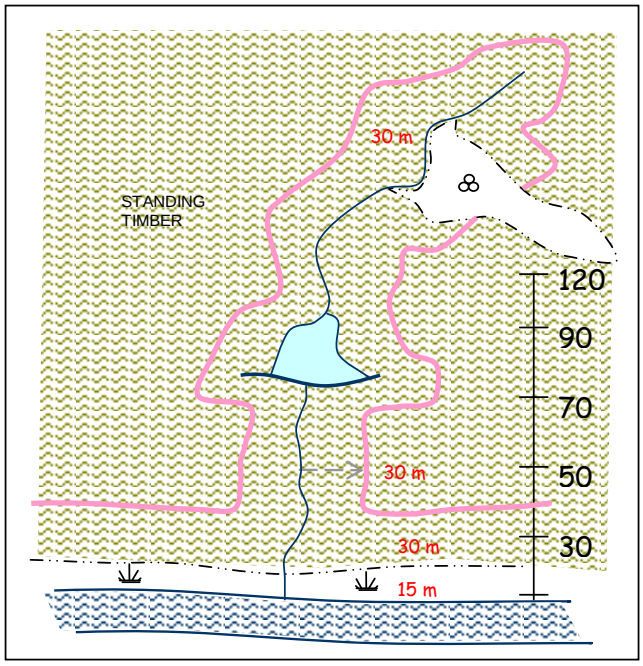


Figure 17:



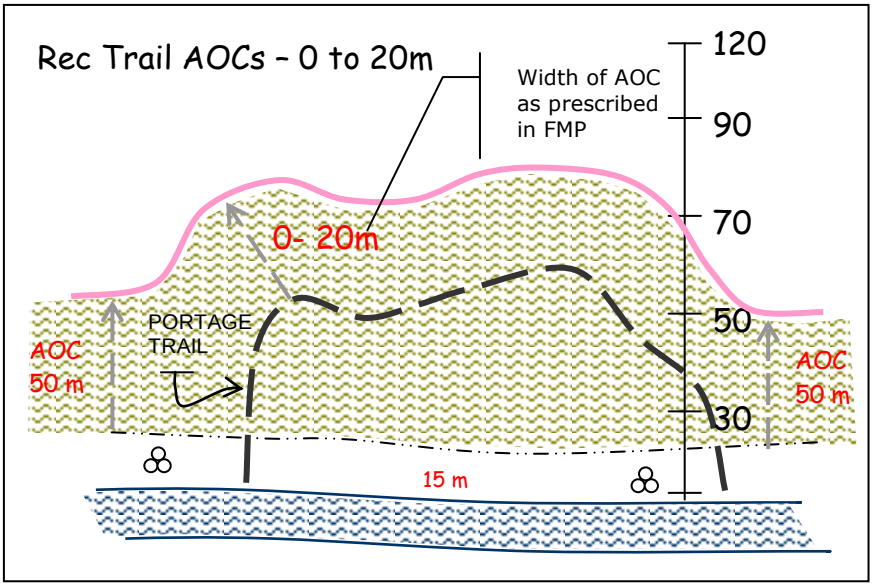
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2

Other AOC Width

Figure 15:



13.6 Field Operations

13.6.1 Method of Approval Boundary and Area of Concern Boundary Marking

It is essential that a systematic method of block marking be employed to ensure that areas of concern are adequately protected through the implementation of the area of concern planning. This involves the efficient and effective marking of boundaries where normal harvest is permitted.

13.6.2 Timing

The marking should be done well in advance of the operations to ensure the boundary lines are complete prior to harvest and to verify areas of concern and rectify any prescriptions, which may have changed since the development of the plan. (Use Forest Operation Inspection Report to document discrepancies.)

13.6.3 Responsibility

It is the responsibility of the SFL holder to ensure that all marking is completed in a timely and accurate manner. *Note: Those Harvest Contractors that assume responsibility for marking must also assume responsibility for accuracy of boundary locations.*

13.6.4 Method

A certain amount of preliminary work must be done prior to the actual marking. The first step is to familiarize the markers with the relevant guidelines as well as the rationale for the area of concern prescriptions. Some of the documents which will be of assistance include:

1. The Values and AOC Planning Documentation in the Forest Management Plan (Table FMP-11)

2. The Annual Work Schedules

3. HPL Reference Manuals

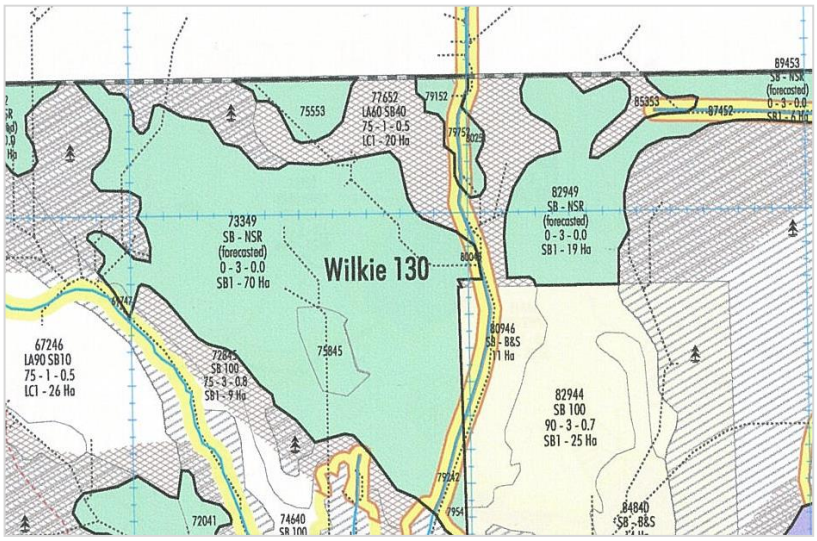
As many Harvesting contractors may operate on several units, the prescriptions may not necessarily be consistent from one Management Unit to another. Therefore, it is important to know and understand the requirements associated with the Nagagami Forest.

13.6.5 Field Operation

The annual work schedule or FMP maps will indicate the reserve type and the reserve width. There are three distinct types of areas; a) no-cut reserves, b) block prescriptions and c) modified harvest areas.

It is important to determine if the specific AOC width must be measured from the water's edge, from the high-water mark or from edge of the tree line (i.e. refer to appropriate supplementary AOC documentation in FMP for specific details)

Figure 19 provides an example of a harvest allocation map and the associated line marking report (Figure 2) that is provided following field implementation.



Sample of Allocation map, which forms part of the Annual Work Schedule

In no cut reserves determine the route to be ribboned by considering the actual natural features wherever possible. It may be necessary to alter the line while in the field, however these details should be passed on to the SFL holder by means of the final marking map provided by the line marking contractor. It should include rationale for any changes to proposed marking width or direction. Examples could include steep topography, slumping of creek edge causing increase in reserve width, additional reserve left to protect riparian areas, unidentified camp, FRI stream which does not actually exist etc.

Note: Under <u>no</u> circumstances should any marking extend outside the proposed approval boundaries or within the prescribed Area Of Concern width without prior approval of the SFL holder.

In 'selection' harvest areas the tree marking will be with blue paint and/or ribbon. The area must be walked to consider operability, terrain and volumes prior to marking the trees to be harvested. The block cut areas should be tentatively selected using aerial photos then walked prior to marking.

At times, line markers may also be responsible for the locating of road centerlines through AOC's on behalf of the harvesting contractors. Road locations through reserves or a modified reserve is severely restricted. When roads do pass through a reserve they should be at right angles whenever possible, with the road centerline marked to ensure the location falls within the operational road boundary (ORB) approved in the Annual Work Schedule or the Primary/Branch road corridor approved in the FMP.

Some basic techniques for ribboning are:

- As a minimum, when sharp changes in line direction occur or where a reserve width changes, three ribbons **must** be hung, and tighten up on flagging, to highlight the change.

- Tie ribbon as high as possible so harvester operator can easily see them.

- Consider which direction cutting will be coming from and tie the ribbon so that it will be visible.

- Avoid tying on small dead branches on the trunks of trees which frequently break off, and small limby balsam that become snow loaded. An attempt should be made to flag some well-spaced larger trees if long stretches of brush encountered.

- Ribbons should be spaced close enough that you can look behind and see **three** ribbons. Ensure that a feller buncher cannot fit between the ribbons.

- Remember how the area will look when the leaves are on the brush.

- Points of measure should always be taken from bays, inlets and corners of creeks.

- Never mark less than the prescribed width.

- If area in the vicinity of the reserve is unlikely to be harvested due to poor quality/low volumes/unmerchantable tree species, then do not spend time on extreme accuracy but mark 20 - 30% over required width. Example – mark transition between merchantable timber and edge of alder if reserve width larger than required.

Area of Concern Marking

- The following AOC identifier codes were developed specifically for this management plan:

APA - Archeological Potential Areas
BAT - Bat Hibernacula
BGC - Bonaparte's Gull Colony
BMS - Bear Management Station
BSC - Bank Swallow Colony
BSN - Barn Swallow Nests and Colonies
CAB - Trappers Cabin
CALV - Caribou Calving and Nursery Areas
CO - Cottage (remote and non-remote)
CCH - Confidential Cultural Heritage Values
NCCH - Non-Confidential Cultural Heritage Values
CRA - Canoe Route (Category A)
CRB - Canoe Route (Category B)

CSR - Common stick nesting raptor
CWA - Caribou Winter Use Areas
DEN1 - Black Bear Dens
DEN2 - Wolf Den
EAG-1: Bald Eagle Primary Nests
EAG-2: Bald Eagle Alternate Nest
EAG-3: Bald Eagle Inactive nests 38
EWW - Eastern Whip-poor-will
GBH-1: Great Blue Heron Active Colony
GBH-2: Great Blue Heron Inactive Colony
GNR - Ground Nesting Raptor
LP - Land Use Permit
ML - Mineral Lick
MR - Moose residual patches
MSIM - Multi-Species Inventory and Monitoring Plots
NR - Nesting Raptors
ON - Center of Ontario
OSP-1: Primary Osprey Nest
OSP-2: Alternate Osprey Nest
OSP-3: Inactive Osprey Nest
PER - Peregrine Falcon
PGP - Provincial Growth Plot
PK - Provincial Park
PSP - Permanent Sample Plot
RHZ-1: Lakes, Rivers, and High potential Sensitivity ponds and streams
RHZ-2: Moderate Potential Sensitivity Ponds and Streams
RHZ-3: Low Potential Sensitivity Ponds and Streams
RTM-1: Designated remote tourism main base lodge (structure)
RTM-2: Designated remote tourism main base lodge water and viewscape reserves
RTO-1: Designated remote tourism outpost lodge (structure)
RTO-2: Designated remote tourism outpost lodge water and viewscape reserves
RW - Railway
SH-1: Lakes and ponds
SH-2: Rivers and streams
USR-1: Red-Shouldered Hawk Primary Nest
USR-2: Northern Goshawk and Great Grey Owl primary nest
USR-3: Great Gray Owl, Northern Goshawk, or Red-Shouldered Hawk Alternate Nest
USR-4: Great Gray Owl, Northern Goshawk, or Red Shouldered Hawk Inactive Nest

- Forest operations prescriptions, which will include provision to emulate wildfire patterns on the landscape have been incorporated into the viewscapes. The planned Residual Forest areas are also clearly shown on the harvest operations maps.

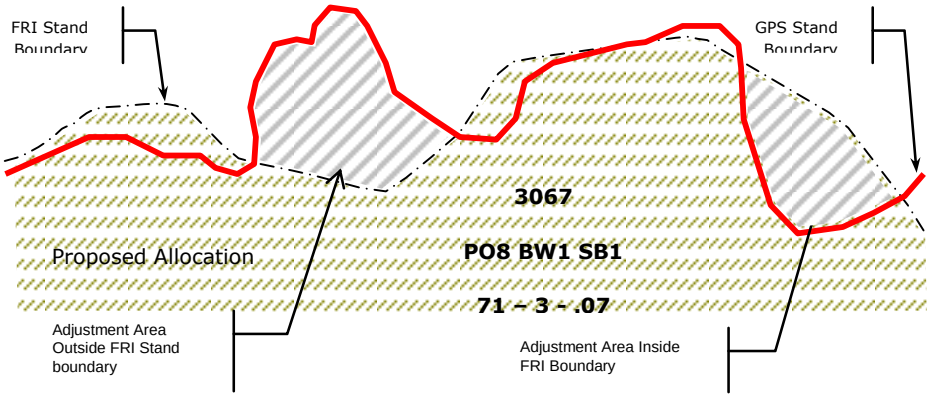
- Implementation strategies for the above list of AOCs can be found in the Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (Stand and Site Guide)

13.7 Special Considerations

13.7.1 Incorrect FRI Description (Rock, Spruce Bog, Open Muskeg, DAL)

Fringe area resulting from mistyped FRI data that exceeds 2 ha will be submitted to the SFL holder for approval prior to harvest. Industry will communicate with MNRF as necessary. All fringe areas that are harvested as a result of incorrect FRI data will be recorded in FOIP.

Non Productive			
	Alder and Shrub Swamp	UCL	Unclassified Land Ex: Could include existing clearings for Aggregate Pits, Mining Works, Right of ways clearings for Road, Hydro and Pipelines,
	Treed Muskeg	DAL	Agricultural Land
	Open Muskeg	NSR	Not Sufficiently Regenerated. Includes those areas previously harvested (i.e. cut-overs) for which a forest description has not been assigned
	Grass and Meadow		
RK	Rock	B&S	Barren and Scattered – Includes only those areas previously harvested (i.e. cutover) or plantation areas



In certain instances the FRI photo interpreters incorporated some "straight lining" of the stand boundaries during the delineation of photos, while actual boundaries encountered in the field where found to be more irregular (i.e. as represented by the red line above).

<u>In all cases</u> the final approval boundaries will remain consistent with the original intent of selecting areas for operations during the FMP allocation process.

Example: A selected stand boundary is 1) entirely enclosed by or next to an existing cutover or plantation or 2) the selected stand has boundaries that were where intended to end against a lowland spruce or alder swamp.

In both situations, only those areas that can be regenerated under an approved SGR will be permitted to be included within the final boundary. In particular, markers must ensure that adjustments occur only between the boundaries of proposed harvest blocks

13.7.7.2 Private and Alienated Land Boundaries (e.g. Conservation Reserves and Provincial Park Boundaries

- A forest operator or anyone else may, without the services of a licensed surveyor, mark the limit of forest operations to coincide with a property boundary only if:

  a) The property boundary had been previously established by a licensed surveyor and the boundary markers and monuments can be located; or

  b) There is an agreement with the neighbouring landowner regarding the placement of the limit of forest operations.

- If the above requirements have not been satisfied, the forest operator shall not mark the limit of forest operations with the intent to have it coincide with a property boundary. In all situations, marking of the limit of forest operations, as described above, must never be portrayed as a boundary survey or the establishment of a property boundary.

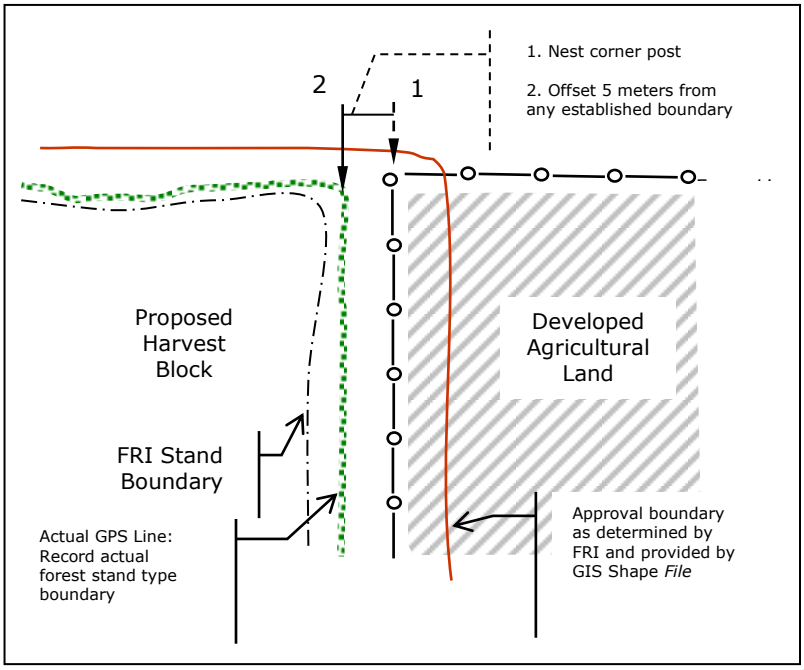


Figure 38: Discrepancy between GIS data and actual field conditions adjacent to private and alienated lands (i.e. provincial parks and conservation reserve)

Leaving buffers to avoid the danger of trespass

- In cases where a property boundary has not been previously established, it is recognized that the cost of a survey is prohibitive to forest operations. It is permissible for the forest operator or licensee to leave a buffer between forest operations and where the property boundary is thought to be in order to reduce the danger of trespass. As a minimum a **10-meter** buffer will be used but the width of buffer left will remain at the discretion of the harvesting contractor and should

reflect the level of uncertainty regarding the true location of the property boundary.

Notification of Landowners

- Forest operators on Crown land located immediately adjacent to private property, registered tenured Crown property, or Crown land parks and protected areas (existing or proposed) will make all reasonable efforts to contact the landowner(s) of the land parcel(s) before marking of the limit of operations is finalized in the field and before operations are to commence. Attempts should be made by the SFL holder to contact landowners personally and in writing where practical. However, experience has proven this is not always practical or feasible given the number of absentee landowners and/or difficulty in obtaining contact information associated with Patented Claims under the Mining Act or Veteran Patented Lots under the Veterans Act of 1901.

MNRF maps showing property boundaries

- Many MNRF maps show features that are intended to illustrate property boundaries. Examples of this include licence maps where the licence boundary corresponds to a Crown land boundary and Ontario Base Mapping which shows township lots and concessions and land ownership information. MNRF topographic and resource information maps are not Plans of Survey and users should be aware of their limitations. A surveyed boundary must always be considered the "correct" boundary location over Ontario Base Mapping information or other map bases or that provided by a Global Positioning System (GPS) using map coordinates.

    1. For properties within an organized Municipality, information regarding the ownership of land and related information is available from the Municipal Office.

    2. Where the property is outside an organized Municipality, landowner contact information is available from a Land Registry Office.

    3. Where current landowner contact information can not be obtained from the above source, the local MNRF district office may be contacted for assistance.

- Where no agreement is reached with the adjacent landowner and the limit of forest operations is established (normally with a buffer), documentation must be produced to ensure there is a record of the relationship between the limit of forest operations and the property boundary. On the Nagagami Forest, Operations maps will clearly show that the limit of forest operations has been established with a buffer on the allocated stand boundary immediately adjacent to the property boundary. This will document that the final limit of operations that has been marked is not a legal survey and is not intended to establish the property boundary.

Marking the limit of operations in the field will also reflect the following principles:

- Fence lines, old blaze marks and old paint markings should not be counted on as indications of a property boundary. They may however be used as part of an agreement between the forest operator and the landowner regarding the limit of forest operations. The only reliable evidence of a property boundary is that provided by a survey conducted by an Ontario Land Surveyor.

- Existing survey markers may be used to assist in choosing where to mark the limit of operations if the location, purpose, and validity of the monument are supported by a Plan of Survey. This documentation will be the responsibility of the SFL holder to obtain when used.

- Survey corner posts, monuments, iron bars, blaze lines or other survey markers must not be pulled down, defaced, altered or removed.

- The limit of forest operations will be marked with flagging tape that is not confused with a property boundary (i.e. labelled).

Record Keeping:

The Boundary Marker must ensure that all actual measurements are recorded on a 1:20,000 scale map with the following indicated.

1. Actual measurements of each individual line established or GPS coordinates

2. Actual bearing used for each line or final GPS coordinates.

3. Location and description of control points used to establish start points for marking of Areas of Concern (i.e. lake edge, swamps)

4. GPS settings used

5. Block number

6. *Optional:* Location of reference points established along approval or AOC boundaries (i.e. Nest Points.)

Maintain a map of the reserve lines that show exactly as they were marked.

- State when and who marked the reserve, comments, etc.

- Describe the potential for carrying out modified harvest techniques on the area.

- Describe the detail of the actual block layout and approximate dimensions.

- Describe the trees selected if it is a modified harvest.

- Location of spot checks and/or stream offset lines used to verify reserve width and or reference points. These points will be permanently marked using GPS to facilitate post harvest verification. Number and location of points will remain at the discretion of the SFL Inspector but as a minimum will include at least one reference point for every 800 meters of line established.

- Markers should locate the reference points established along approval or AOC boundaries (i.e. Nest Points.) where they may be used to aid in

orienting forest operators for the purpose of establishing interior boundaries (e.g. Residual Patches)

SUMMARY REPORT CHECK LIST

Values:

- *Wildlife:* habitat, nesting, reproductive areas (calving, dens), cover/protection, food sources
- *Fisheries:* spawning, rearing areas, shade, water quality/temperature, fish movement/migration
- *Water Quality:* sedimentation/siltation, erosion, natural flows, temperatures, feeder streams
- *Land Use:* LUP, cabins, mining, maintained trails, parks, outfitters
- *Tourism:* hunting, fishing, snowmobile, skiing, walking, canoeing/boating
- *Cultural Heritage:*
- *Aesthetic:* viewscapes, unique features, canoe routes
- *Scientific:* Research Plots

Values – Potential Problems:

- in wrong location on map
- do not exist in the field
- did exist but are now gone (stick nest)
- not listed or identified anywhere

Additional Information:

- CLAAG areas,
- regeneration/advanced growth (species, stocking, location)
- unmarketable wood (species, location of heavily stocked areas - bypass)
- bypass areas (cedar swamp, unmerchantable wood, unmarketable wood)
- quality and size of wood (pole material, pulp, cull, over mature)
- riparian areas
- proposed stream crossings (proposed location OK)
- inoperable areas (bedrock, swamp)
- safety issues (cliffs, old mining work - trenching)
- mining activity (grid system, claim posts)
- unidentified existing roads
- potential gravel deposits
- proposed road locations (any significant problems with layout)
- evidence of hunting (bear baits, tree stands)

Additional References

- Updated Mining Claim Information: www.mndm.gov.on.ca/win-cgi/claimsMapCGI.dll
- Updated Declinations: www.geolab.nrcan.gc.ca/geomag/

Figure 2: GPS Line Marking Report

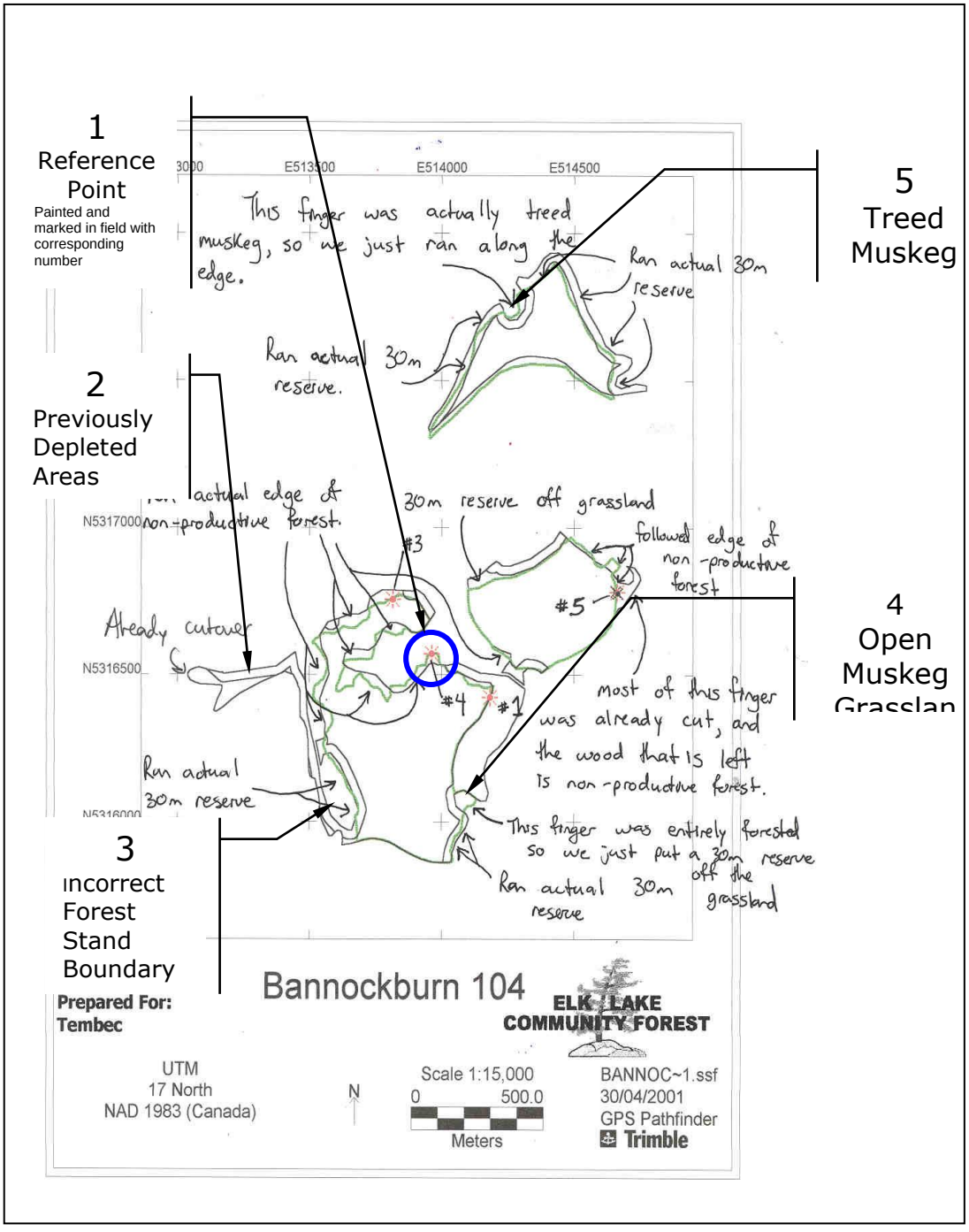


Figure 39: Example of GPS Line marking Report submitted for block file

Problems arising in the field:

- If there is any question as to how an AOC should be marked on the ground, it can be deferred until another day.

- If it is not practical to defer the marking of an AOC, the markers must use their best judgment and consult with the SFL holder.

- When in doubt, Industry will consult with the MNRF prior to cutting so that a satisfactory arrangement can be made, e.g., ponds going dry, creeks turning into ponds, etc.

- Values such as heron rookeries, osprey nests, eagles' nests, etc., which have not yet been identified, should be noted and reported to the SFL holder who will report to MNRF. New values encountered must have appropriate prescriptions applied.

- Reserves can never be marked narrower than indicated on the FMP map without an approved amendment in place.

- At the request of the SFL holder, line markers may be requested to mark 3-meter buffers on obvious riparian areas.

- The actual location of creeks frequently differs from what is shown on the map. The actual creek should be protected and the SFL holder notified of the change.

- If you should encounter, during a field inspection, that the slope adjacent to a segment of a shoreline is obviously steeper or shallower than indicated, then if the AOC is slope dependent at that location (no orange outline on riparian AOC), the reserve width should be adjusted to provide for the required protection as indicated in the fisheries guidelines (i.e. as per slope dependent reserve requirements).

- Efforts should be made to improve and protect identified viewscapes as required.

- The change should be discussed with the SFL holder, duly recorded, and reported to MNRF.

Before you start . . .

☑ Determine marking priority for the block selected

☑ Have the most current AWS approval maps and photographs of the Block

☑ Ensure that the map you have is at the proper scale (1:20,000)

☑ Have the private lot lines on the map checked for accuracy by the Company Representative.

☑ Discuss safety issues/company requirements with the Rep.

☑ Get your boundary layout approved by the company Rep.

☑ <u>Contact the SFL holder Representative regarding:</u>

- The GPS settings to be used
- Where the reserve width starts from ("high water mark" or "standing timber")
- How to deal with riparian areas
- The time of year proposed for the harvest that can cause visibility concerns for feller operators (i.e. will snow be on trees or will area be in full leaf-out, have flags been established during snow free conditions and are now too low to the ground).
- Length of time from boundary establishment to the commencement of harvest
- Boundary: colour of flagging to be used and method of applying the flagging
- What else they require you to flag and what colour to use (e.g. riparian areas, nested reference tree locations along approval boundaries)
- How to mark and record the location of a reserve width that you measured
- Unidentified Values: how to deal with new values when found
- Incorrect Values: how to deal with known values from map that do not exist in the field or are in different locations
- Additional Information: what they want you to be looking for and commenting on in writing, while working in the block (Refer to Summary Report Checklist)

Module 14

Assessing Potential Impact of Forest Management Operations On Nesting Birds

for the

2021-2031 Nagagami Forest Management Plan

14.0 Assessing Potential Impact of Forest Management Operations on Nesting Birds

14.1 Potential Impact Assessment Key

Answer the following questions to determine (rate) the 'potential impact classification' (i.e. High, Moderate or Low) for any proposed forest management operations (i.e. skidding, tree planting, etc.) for a particular nesting bird in question;

Criterion	Description and score
A	Duration of individual events (e.g., a truck driving past a nest is a discrete event): 0. Seconds 1. Minutes 2. Hours
B	Number of individual events per day: 0. Few (< 5) discrete events 1. Many (≥ 5) discrete events 2. Events are continuous (e.g., harvest operation)
C	Time period over which events occur during the breeding season: 0. Minutes 1. Hours 2. Days
D	Detectability of events at nest: 0. Low likelihood of being heard or seen 1. Likely to be heard 2. Likely to be seen
E	Number of pedestrians involved in activity: 0. None 1. Few (< 5) 2. Many (≥ 5)
F	Number of small (e.g., chainsaws) or large (e.g., skidders) pieces of equipment involved that produce noise: 0. None 1. One large or a few (< 5) small pieces of equipment 2. More than one large or many (≥ 5) small pieces of equipment

The overall score = [(A+B+C)*(D+E+F)]/36

A score ≥ 0.67 suggests a HIGH potential impact
A score ≥ 0.33 suggests a MODERATE potential impact
A score < 0.33 suggests a LOW potential impact

14.2 Examples of Assessing Potential Impact of Forest Management Operations on Nesting Birds using Key

Example 1: A mechanical harvesting operation involving 1 or more feller bunchers, 1 or more grapple skidders, and many people that could be heard for numerous weeks from an osprey nest would score:

Criterion A - 2
Criterion B - 2
Criterion C – 2
Criterion D – 1
Criterion E – 2
Criterion F – 2

= [(A+B+C)*(D+E+F)]/36
= [(2+2+2)*(1+2+2)]/36

Total score of 0.83 (High Potential Impact)

Example 2: A small crew of tree planters working around an osprey nest in a cutover for 1 day would score:

Criterion A - 2
Criterion B - 2
Criterion C – 1
Criterion D – 2
Criterion E – 1
Criterion F – 1

= [(A+B+C)*(D+E+F)]/36
= [(2+2+1)*(2+1+1)]/36

Total score of 0.56 (Moderate Potential Impact)

Example 3: One truck hauling within sight of an osprey nest (> 5 loads per day) for a week would score a 0 for criterion A, a 1 for criterion B, a 2 for criterion C, a 2 for criterion D, a 0 for criterion E, and a 1 for criterion F for a total score of 0.25 (Low Potential Impact).

Criterion A - 0
Criterion B - 1
Criterion C – 2
Criterion D – 2
Criterion E – 0
Criterion F – 1

= [(A+B+C)*(D+E+F)]/36
= [(0+1+2)*(2+0+1)]/36

Total score of 0.25 (Low Potential Impact)

The following table provides some examples of how common activities typically rank using the above approach.

Potential impact	**Examples**
High	Harvest operation Large tree plant (≥ 5 people) if visible Mechanical site preparation Road construction
Moderate	Ground (air blast) herbicide application Large tree plant if not visible Small tree plant if visible Small crew using brush saws
Low	Aerial application of herbicides Boundary/tree marking Hauling Routine road maintenance (e.g., grading)

Note: For complex operations, the cumulative potential impact of all concurrent activities should be assessed. For example, when a harvest operation involves concurrent felling, skidding/forwarding, roadside delimbing, slashing, and loading, all activities should be included in the evaluation of potential impact.

Module 15

A Forest Workers Field Guide For Determining Stream Permanency

for the

2021-2031 Nagagami Forest Management Plan

15.0 Forest Workers Field Guide for Determining Stream Permanency

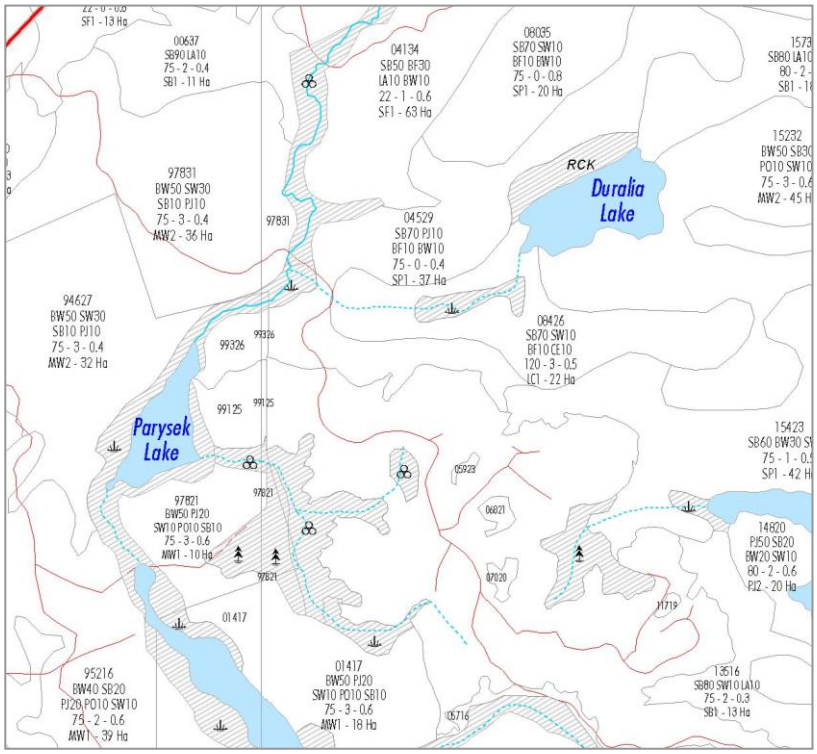
15.1 Introduction

Due to the wide range of forest types, site conditions, climatic factors and fish habitat in the province this guide should be used with some flexibility and operations adapted to meet local conditions. The general principle operators must keep in mind is that harvesting should be carried out so as to avoid damaging banks, keep logging debris away from the stream, and avoid the occurrence of significant erosion. The purpose of this document is to assist forest operators in the implementation of forest management operations around unmapped stream values.

Direction is provided in the new DFO Protocol and the Forest Management Planning Manual. Any discrepancies encountered in classifying unmapped stream segments will be reviewed with the area biologist.

15.2 Background

In the past the 1:50,000 scale map National Topographical System were used to map stream values during forest management planning. During more recent planning exercises the Ontario Base map (OBM) 1:20,000 scale map was used to provide a more comprehensive stream layer. This has resulted in identification of many more streams for which Areas of Concern (AOC) planning has been carried out during forest management planning. The forest industry and MNRF have developed this field assessment guide to promote consistent identification of stream permanency.



During the preparation of the 2021 - 2031 Nagagami Forest Management Plan all mapped streams have had a detailed prescription developed for each AOC in order to prevent, minimize or mitigate adverse effects of forest management operations on the value.

15.4 Intermittent and Permanent Stream Characteristics

The *Forest Management Planning Manual for Ontario's Crown Forests (2004)* identifies streams as "a flowing, channelized body of water of any size. During the recent development of the *Protocol for the Review of Water Crossings Proposed Through the Forest Management Planning Process (2005)* streams were described as "water courses with flowing water, including rivers, and may be permanent, intermittent, or ephemeral". It is clear that an important first step is to define stream permanency.

Ephemeral:

Ephemeral flows are stream flows in channels that are short-lived or transitory and occur from precipitation, snow melt, or short-term water releases. *(Armantrout N.B. compiler. 1988, Glossary of Aquatic Habitat Inventory Terminology, American Fisheries Society, Bethesda, Maryland)*

Note: Terminology associated with ephemeral streams includes gullies, swales and rills. For the purposes of this guide, ephemeral streams will be treated as intermittent streams.

Intermittent:

In the field, an intermittent stream is a stream that flows only during wet periods. This definition includes streams or portions of streams where the channel is above the water table, and which flow for only brief periods in direct response to recent precipitation or snowmelt. Intermittent streams tend to have poorly defined stream banks. Intermittent flows occur at certain times of the year only when ground water levels are adequate but may cease entirely in low water years or be reduced to a series of separated pools *(Armantrout N.B. compiler. 1988, Glossary of Aquatic Habitat Inventory Terminology, American Fisheries Society, Bethesda, Maryland).* An intermittent river, creek or stream is defined as one which flows for fewer than 9 months per year under average annual precipitation conditions. An intermittent creek or stream must have channel with defined bed and banks of a permanent nature. *(Lakes & Rivers Improvement Act Technical Guidelines-Criteria and Standards for Approval)*

Permanent:

In the field, permanent streams are streams that have a natural defined channel without terrestrial vegetation in the stream bed. Permanent or perennial flows are flows that are continuous throughout the year. *(Armantrout N.B. compiler. 1988, Glossary of Aquatic Habitat Inventory Terminology, American Fisheries Society, Bethesda, Maryland)*

Although stream permanency can be assessed during snow free conditions the ideal time to assess the stream permanency is during the low flow periods often

occurring in August. This allows forest workers including boundary line markers and road locators to obtain an unobstructed view of stream banks, the stream bottom and vegetative conditions.

15.5 Site Assessment

Consistent determination of stream permanency requires the selection of appropriate assessment sites on the stream channel. An assessment must be conducted on a stream segment at least 100 metres in length, so that the natural variability of stream characteristics can be observed. Other factors that should influence assessment site selection include the location of beaver ponds, lakes, wetlands, seeps, slope and roadways.

Stream permanency assessments should be performed under snow-free conditions else permanency must default to higher risk category. Joint visits with area biologists is encouraged when determining permanency of unmapped streams.

Summary: Minimum of 100 metres of stream with low to moderate slope and avoid the following site conditions:

- Immediately downstream of lakes, beaver ponds or road ways
- Steep slopes > 30% (17°)
- Wetlands (all types), seeps or beaver meadows

15.6 Stream Evaluation

Although supporting criteria that may assist a stream permanency determination include the presence of aquatic insects and water temperature, forest workers can assess the following three (3) primary stream characteristics to determine stream permanency:

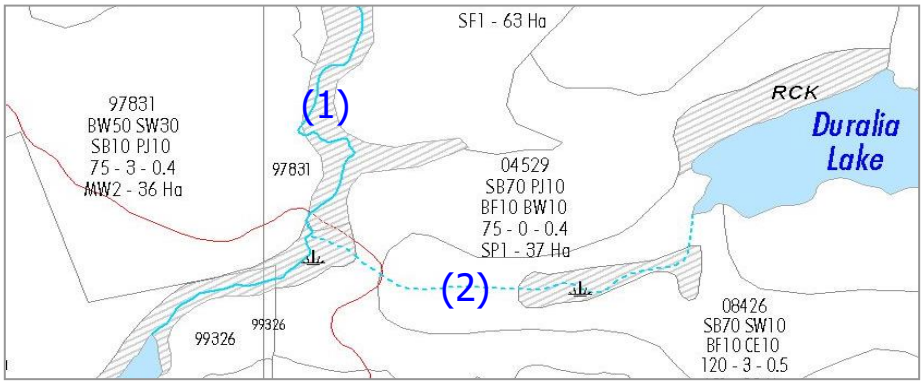
1. Flow duration,

2. Established channel and,

3. Instream vegetation.

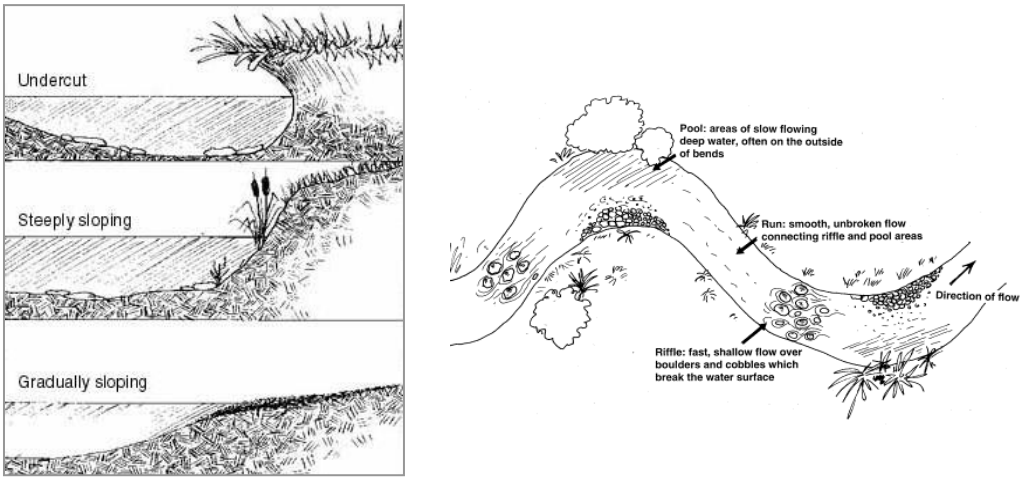
Flow Duration Streams that flow less than 9 months of the year are unlikely to provide direct fish habitat. However, some streams may provide spawning or nursery habitat during seasonal flow conditions. Streams that are normally dry in June or July indicate that they are intermittent, flowing less than 9 months of the year. Lack of flow at other times of the year is not necessarily a good indicator of an intermittent stream. Alternatively, if a stream is flowing in August, during a very dry year, it is almost certainly a permanent stream. It is important that field staff take into account recent weather events when evaluating flow conditions and assessing the permanency of streams. In drought conditions, when summer water levels are lower than average, even permanent streams and rivers may dry out.

Example of Permanent (1) and Intermittent (2) streams identified on 1:20,000 maps



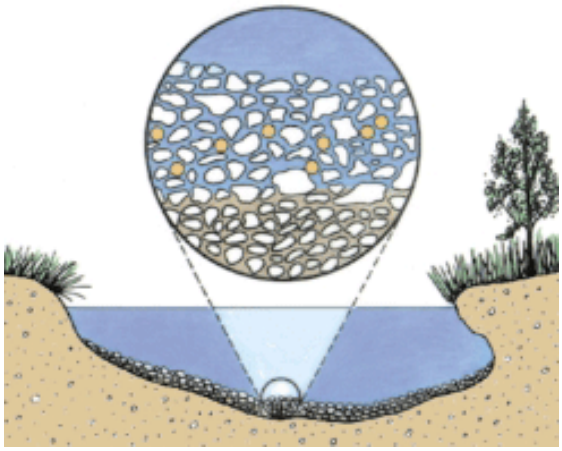
Established Channel

Several factors need to be considered to determine if an *Established Channel (i.e. Permanent stream)* is present. These include bank/stream bottom transition, bank stability, stream bottom substrate and live tree roots (root mat) in the channel. An established channel is one where the stream bottom and banks are well defined.



Established Channel (Permanent Stream) Vs. Stream Morphology

Poorly Defined Channel (Intermittent Stream)
The stream bottom looks significantly different than the surrounding forest floor. The banks are relatively stable (no significant erosion), with terrestrial plants that have grown to the edge of the stream, forming a sharp break point between the forest floor and the streambed. The stream bank may form a lip or undercut. An established channel is generally characteristic of a permanent stream.



Intermittent streams do not normally have an established channel. They tend to have a gradual transition between stream bottom and the surrounding forest floor. Topsoil or a root mat may form the bottom of the stream channel. Gravel or sand may be deposited on the forest floor. An unstable channel with eroding banks may be present, especially on steep grades.

Instream Vegetation

The presence of established perennial grasses and other upland plants on the stream bottom is strong evidence that the stream dries up for much of the growing season. These plants are indicators of intermittent streams when they are found in the low flow portion of the channel. The low flow channel is that part of the stream channel that conveys summer base flows. It may encompass the entire channel as in a small spring fed creek, or may occupy a small portion of the stream bottom if ground water input to the stream is minimal.

Perennial upland plants established in the low flow channel may be present in intermittent streams. Permanent water in a channel prevents the spread of terrestrial plants into the channel. Seedlings may colonize the dried portion of the stream channel during summer drought conditions. The colonization by seedlings outside the low flow channel is not evidence of an intermittent stream. Clumps of forest floor that remain as islands in the centre of the stream are not considered upland vegetation growing in the channel.

The following drawings and pictures illustrate permanent and intermittent stream characteristics using the three (3) primary stream characteristics noted above to determine stream permanency.

Permanent Streams

Permanent Stream Characteristics

Permanent Streams



Established Channel (Permanent streams)

Flow Duration

- More than 9 months per year

Established Channel

- Sharp transition between stream bottom and bank
- Bottom substrate is different than forest floor
- Stream banks are relatively stable
- No live tree roots or root mat in channel bottom

Instream Vegetation

- No perennial upland plants in low flow channel

Supporting Criteria

- Presence of aquatic invertebrates
- Water temperature less than 15°C in July/August

Permanent Streams



Sharp transition between stream bank and channel



Bottom substrate different than banks

Permanent Streams



Low flow channel may be present in both permanent and intermittent streams
Islands of plants are not indicators of intermittent streams. May be present in both permanent and intermittent streams. Seedlings germinating in a drying channel do not indicate an intermittent stream. May be present in both permanent and intermittent streams



Banks relatively stable
No live tree roots in channel



Sharp break point between forest floor and streambed



Stream forms lip or undercut (clay)

Intermittent Streams

Intermittent Stream Characteristics

Intermittent Streams



Poorly Defined Channel (Intermittent streams)



Poorly defined banks

Intermittent Streams



Stream bottom similar to forest floor



Stream flows less than 9 months per year

Intermittent Streams







Irregular transition between bank and stream bottom

Intermittent Streams





Irregular transition between bank and stream bottom (Clay)

Intermittent Streams







Live root mat in channel bottom

Intermittent Streams





Stream bottom similar to forest floor

Ephemeral Streams
(Includes gullies, swales and rills)

Ephemeral Streams





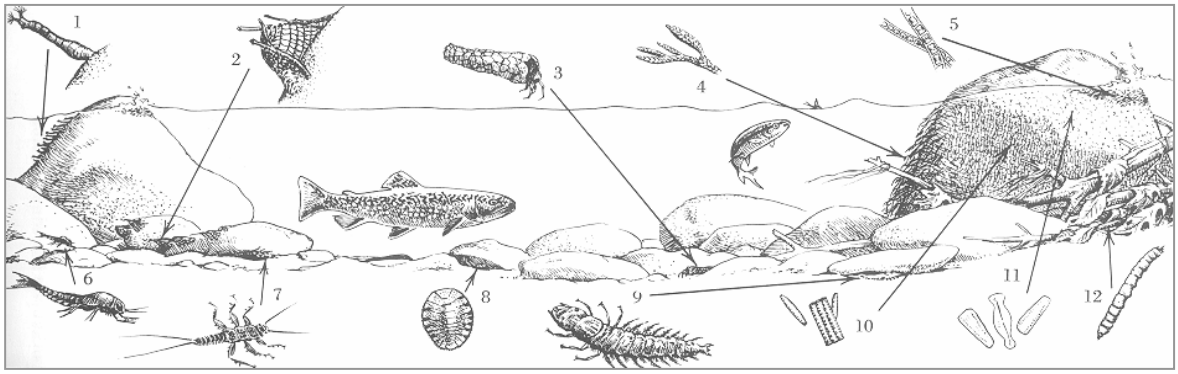
Stream flows in rills (i.e. newly forming channels) that are short-lived or transitory

15.7 Supporting Criteria

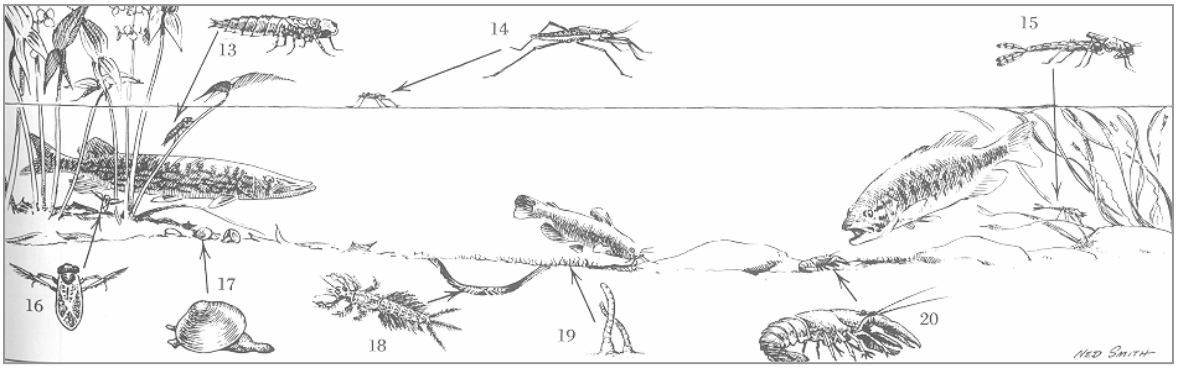
Identifying large permanent streams and very small intermittent streams is fairly straightforward even or the layperson. Although supporting criteria are not the primary considerations in determining stream permanency, there are transitional situations where an intermittent stream becomes permanent and the decision is not as simple since both permanent and intermittent stream characteristics are present. The advice of the local MNRF Area Biologist should be sought to determining stream permanency as they can assess for the presence of aquatic invertebrates and water temperatures.

(1) Black Fly larva; (2) net spinning caddisfly; (3) stone case of caddisfly; (4) water moss

Fast stream



Slow stream



(Fontinalsis); (5) alga Ulothrix; (6) mayfly nymph; (7) stonefly nymph (Perla); (8) water penny; (9) hellgrammite; (10) diatoms (Diatoma); (11) diatoms (Gomphonema); (12) cranefly larva; (13) drangonfly nymph; (14) water strider; (15) damselfly nymph; (16) water boatman; (17) fingernail clam (Sphaerium); (18) burrowing mayfly nymph (Hexagenia): (19) bloodworm; (20) crayfish

In certain situations, a stream may alternate from surface to subsurface flow. The stream's permanency classification should be maintained in the areas of sub surface flow. The location of underground stream sections should be estimated based on the evaluator's best judgment.

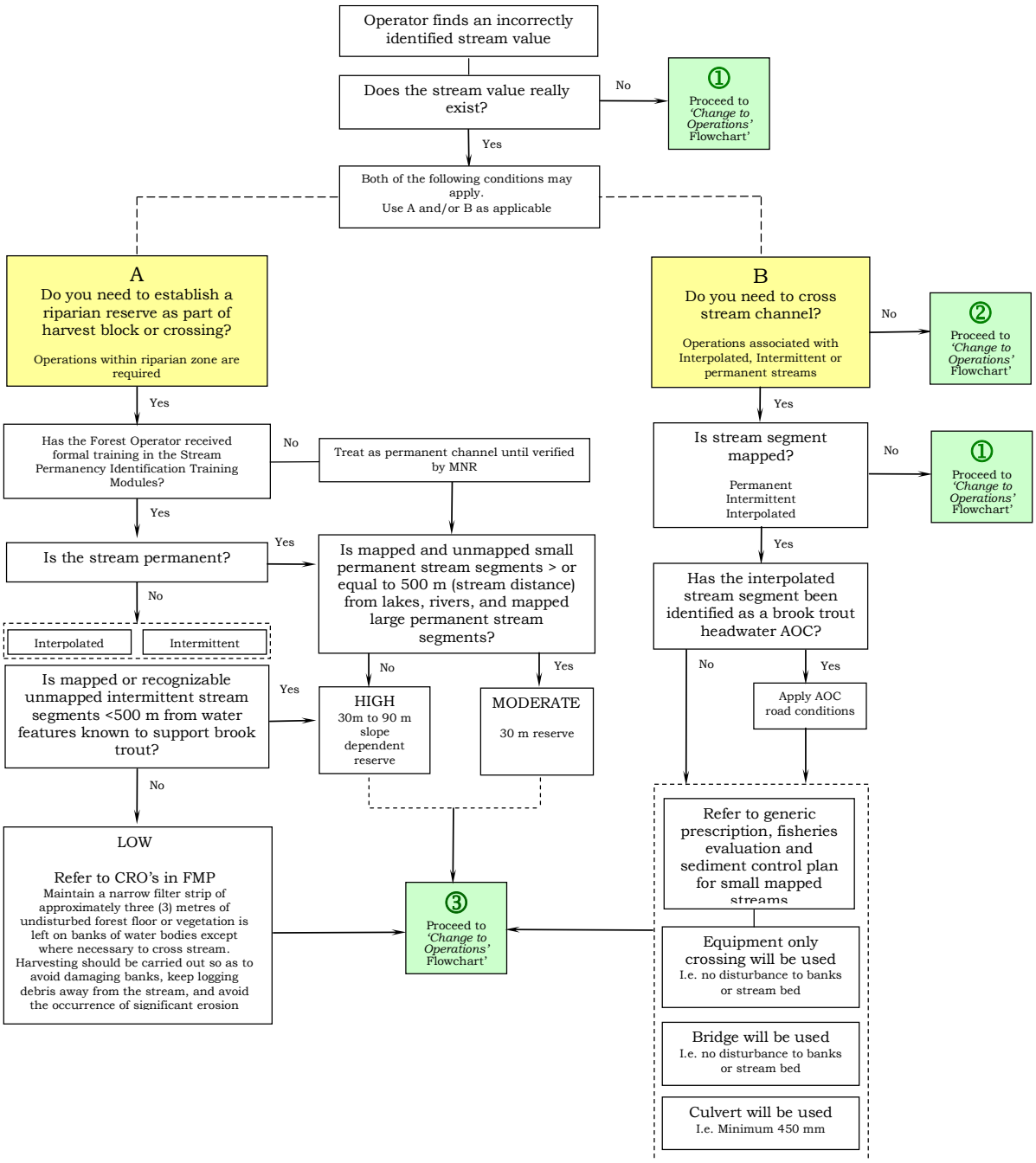
It is expected that as the evaluator's expertise improve over time there will be less of a reliance on the expertise of the Area Biologist.

15.8 Data Collection

Module 12 of the CRO reference document for the 2021-2031 Nagagami Forest Management Plan provides for a notification protocol for '*Changes to Operations'* (I.e. new or misidentified value that has immediate impact or conflicts with forest operations proposed in Annual Work Schedule (AWS) on the Nagagami Forest). This protocol has been specifically designed for use by forest operators working on the Nagagami Forest. It is suggested the stream classification table be added to submissions to assist in determining permanency. The SFL holder will coordinate and prepare all '*Changes to Operations'* for the forest management-planning period related to recommendations that arise from verification of values by the MNRF and confirmation of the Area of Concern prescription proposed.

The following key provides direction on the identification and reporting responsibilities of Forest Operators. They should be used in conjunction with the Nagagami Forest Management Plan Implementation Manual

1


Operator finds an incorrectly identified stream value
Does the stream value really exist?
No
① Proceed to 'Change to Operations' Flowchart'
Yes
Both of the following conditions may apply. Use A and/or B as applicable
A
Do you need to establish a riparian reserve as part of harvest block or crossing?
Operations within riparian zone are required
Yes
Has the Forest Operator received formal training in the Stream Permanency Identification Training Modules?
No
Treat as permanent channel until verified by MNR
Yes
Is the stream permanent?
Yes
Is mapped and unmapped small permanent stream segments > or equal to 500 m (stream distance) from lakes, rivers, and mapped large permanent stream segments?
No
Interpolated
Intermittent
Is mapped or recognizable unmapped intermittent stream segments <500 m from water features known to support brook trout?
Yes
No
Yes
HIGH
30m to 90 m slope dependent reserve
MODERATE
30 m reserve
LOW
Refer to CRO's in FMP
Maintain a narrow filter strip of approximately three (3) metres of undisturbed forest floor or vegetation is left on banks of water bodies except where necessary to cross stream. Harvesting should be carried out so as to avoid damaging banks, keep logging debris away from the stream, and avoid the occurrence of significant erosion
③ Proceed to 'Change to Operations' Flowchart'
B
Do you need to cross stream channel?
Operations associated with Interpolated, Intermittent or permanent streams
No
② Proceed to 'Change to Operations' Flowchart'
Yes
Is stream segment mapped?
Permanent
Intermittent
Interpolated
No
① Proceed to 'Change to Operations' Flowchart'
Yes
Has the interpolated stream segment been identified as a brook trout headwater AOC?
No
Yes
Apply AOC road conditions
Refer to generic prescription, fisheries evaluation and sediment control plan for small mapped streams
Equipment only crossing will be used
I.e. no disturbance to banks or stream bed
Bridge will be used
I.e. no disturbance to banks or stream bed
Culvert will be used
I.e. Minimum 450 mm

Module 16

Fire Prevention and Preparedness Conditions and Procedures

for the

2021-2031 Nagagami Forest Management Plan

16.0 Forest Prevention and Preparedness Procedures

16.1 Procedures

The following procedures will be utilized on the Nagagami forest during the fire season:

1. All Harvesting Contractors companies will contact the MNRF Fire office (i.e. Fire Indices Hotline) on a regular basis in order to monitor the 'Fire Intensity Codes'. Refer to Nagagami Fire Weather Zones (See Appendix E) for the Nagagami Forest to determine which station is to be used on their particular block. Only the 1600 hr forecast is used to determine the next days fire intensity codes with any required modification to operations determined using the 'Operations Modification Table' as specified in the '*Modifying Industrial Operations Protocol'*.

2. Harvesting Contractors will modify operations as required and note these changes on their Operations Maps as part of the forest operations inspection program reporting (i.e. suspend, modify or reinstate forest operations).

3. The SFL holder will provide notification of start-up of forest operations to MNRF as part of its weekly Forest Operations Inspection Program (FOIP).

4. In those cases where more than one contractor wishes to aggregate and collectively come together to share equipment across multi harvest blocks (I.e. within 10 km radius), then these grouped blocks will be identified in the AWS. For the group of blocks a single contractor will be identified as the lead with the responsibility to ensure availability of minimum resources and equipment as well as the responsibility for coordinating efforts to ensure required monitoring is completed and documented (e.g. dedicated patrols).

16.2 Response to a Fire

Each Harvesting Contractor is required to initiate an initial attack on any fire started in and around their operating area and these initial attack procedures are to follow:

1. Immediate suppression using all available manpower and equipment.

2. Immediate notification of the actions being taken to the MNRF fire office and Hornepayne Lumber Sawmill office. A detection report will be submitted to the MNRF as soon as possible and will include the following details
    a. Date and time
    b. Location and size of fire (OBM Coordinates)
    c. Values threatened (i.e. human life, equipment, processed timber, buildings etc.)
    d. Access to fire (i.e. road or aircraft)
    e. Fire Condition (i.e. behaviour, fuel type)
    f. Distance to water source
    g. Action taken (i.e. list of equipment and number of company fire suppression staff on site)
    h. Company representative name

3. Continual suppression effort by company until MNRF fire crews arrive on site to assume suppression responsibilities.

4. Once MNRF has assumed responsibility for fire suppression, company manpower and equipment will be available as required upon MNRF request (Refer to Appendix A and B). On request for this equipment by the MNRF, the Company will continue to provide for direct on-site supervision of their staff and equipment until released from these responsibilities.

5. In the event that a request is made to other companies or contractors to assist in providing additional equipment or manpower for initial fire suppression, then compensation will be consistent with MNRF rates and conditions provided for in MNRF Fire Compliance Guidelines –Forest Fire Operations Business Practices by Forest Industry

16. 3 Fire Prevention Rules and Regulations for the Nagagami Forest

16.3.1 General

- Fire season is in effect from April 1 to October 31.
- Refer to Forest Fire Prevention Act
- Lunch fires are not permitted during the fire season; use a thermos bottle.
- Burning refuse and debris is forbidden on SFL areas.
- The use of tailor-made cigarettes is not recommended. Refer to article 28 & 29 of the FFPA.
- Do not smoke while walking or working in the bush or while operating your machine. If you must smoke, sit down to do so at roadside or in your lunch shack. During extreme fire hazards there may be further smoking restrictions as prescribed by the on-site supervisor.
- Use your ashtray for cigarettes, cigars, etc. when driving.
- Use a lighter, not matches.
- Be careful with fire at all times.
- Compliance Inspectors will conduct routine monitoring during fire season and report general findings in FOIP (Forest Operations Inspection Program).
- In those instances where an existing water delivery system is not available on heavy equipment or where it is not practical to mount back pumps (i.e. susceptible to damage) it is permitted to position back packs strategically at the roadside to ensure immediate use in the event of a fire. This option may only be used if a serviceable fire extinguisher is available on the equipment at the work site to provide an initial response on discovery of a fire. It is the operator's responsibility to reposition the back packs as required to ensure that they remain available as operations progress within the harvest block.

16.3.2 Inspections

- Harvesting Contractors will ensure installation of spark-arresters on all building chimneys and machine exhausts (Refer to Article 33 of the FFPA).

- During periods of high fire danger, foreman will attempt to group the workmen as closely as possible.

- Harvesting Contractors may stagger the working hours during periods of high fire danger, in order to reduce fire risk.

- During periods of high fire danger, Harvesting Contractors will patrol the roads in the harvest area after the workers have left to reduce the risk of fire.

- Harvesting Contractors will check fire equipment to ensure it is in working order, at the following schedule:
    a. Hoses - start of season
    b. Pumps - monthly
    c. Pack pumps and misc. Fire equipment - weekly

- Consistent with the Forest Fire Prevention Act (FFPA), inspections requested under the direction of Ministry officials designated under the FFPA.

16.3.2 Power saws

- Refuelling will be done in an area free from flammable material.

- Store fuel in containers that are designed for this purpose.

- Power saws are to be equipped with mufflers equipped with spark arrestors.

- Each power saw operator must have a suitable fire extinguisher.

- Refer to Reg. 10(1) of the FFPA

16.3.3 Skidders and Other Machinery

- All skidders and other machinery will be equipped with spark-arrestors on the exhaust pipe and must not be altered or modified FFPA Reg. 12

- Radiators, skidpans, and around the sides of motors will be cleaned regularly to prevent a build-up of leaves, twigs, branches, etc., which may be ignited from motor heat. Refer to Reg 11. (1)(2)(3) of the FFPA.

- If welding must be performed away from the garage, the machine will be parked on the gravel road or turnout. Following the welding, the area will be inspected to ensure there is no risk of fire.

- When welding, a fire extinguisher will be available for immediate action at the site where welding is carried out.

- Each machine will be equipped with a functional approved fire extinguisher (6A 80BC minimum rating) and checked periodically Reg. 9(1)(2)(3) of FFPA.

- All heavy equipment that is not being operated will be placed or left in an area free from flammable material Reg. 11 (3) of FFPA.

16. 4 Fire Suppression Measures to Be Carried Out by Company Contractors in The Event of a Fire

16.4.1 General

- Copies of the Fire Plan will be given to shareholders. Furthermore, copies will be posted in the office.

- The MNRF will compensate forest companies for any initial action resulting in expenditures as per the general principles outlined in the MNRF AFFES Policy FM 2.15, Forest Operations by Forest Industry- Business Practices

- MNRF will compensate the company for employees working directly as fire fighters if they are certified SP-100 fire fighters (i.e. includes additional training for work around aircraft, initial attack duties etc.) as per the protocol (Refer to AFFES Policy FM 2.15, Forest Operations by Forest Industry- Business Practices). Staff trained to the SP-102 Training Standard for the purposes of fire prevention and initial action are not trained for the purposes of extended fire suppression duties during "Escalated Fire Operations".

- Fire crews will be organized in the following manner:
    a. Pump man
    b. Nozzle man
    c. Hose handler & layer

16.4.2 Procedure

- Immediate suppression action by all available resources (manpower and equipment) on fires originating on the operating area.

- Immediate notification of action being taken to the MNRF by dialling 310-FIRE and HPL at 1-807-868-2426.

- Immediate suppression action on all fires in the general area if possible, even though not on the operating area.

- Make up an invoice entitled Ministry of Natural Resources Fire Fighting Payroll, recording names of all personnel involved as well as equipment used on fire. This will be given to the Ministry by the Harvesting Contractors. The format for the invoice will be in accordance with the "Forest Operations by Forest Industry – Business Practices, AFFES Policy FM 2.15" which governs the Industry/MNRF relationship in fire matters.

- Rates of pay will be those allowed by the Ministry of Natural Resources.

Immediately upon arrival of the Ministry official (i.e. as designated under the FFPA), an investigation as to the cause of the fire will begin under the direction of the Ministry official.

Module 17

Nagagami Forest Aerial Herbicide Application Program

for the

2021 to 2031 Nagagami Forest FMP

Objectives

The objective of the aerial herbicide application program is twofold:

1. Release conifer trees from competing grass, shrub and herbaceous vegetation in order to free target species of competition and allow those species to reach free-to-grow status.
2. To site prepare and remove undesirable vegetation in advance of treeplanting activities or to promote natural conifer ingress.

Alternatives to Herbicide Application

Control of vegetative competition is one of the most critical determinants of the success of any forest regeneration project. Many alternatives exist for managing competing vegetation with varying degrees of success. Herbicides, manual and mechanical cutting, and animal grazing are just a few of those available tools. Through the Integrated Pest Management (IPM) process, all available information and treatments are considered in order to manage competition levels effectively, economically and in an environmentally sound manner. Forest managers have found that the proper use of herbicides using the IPM approach is the most cost effective and safest method of reducing undesirable competition.

Part 1: Communication Plan

1. The following communications guidelines will be followed.

2. The MNRF will advise in writing (if available):

    (a) The most recently registered owners of private property adjacent to spray block.
    (b) Work permits issued within a 1 km radius of the proposed spray block.

    A briefing session will be conducted for First Resource Management Group staff (acting as agent for the SFL holder, HPL) involved in this program and contractor representative(s) prior to the implementation of the Aerial Spraying Program.

3. Newspaper advertisements will be placed by the MNRF, 7 and 30 days prior to project commencement.

4. The public will have access to a map of the Sustainable Forest License (SFL) outlining individual spray blocks. These maps will be available at First Resource Management Group office in Hornepayne and at the Wawa MNRF office. Written public comments are to be recorded and will be given consideration by HPL.

5. The Ontario Ministry of the Environment, Conservation and Parks will be provided with

completed and signed permit applications c/w appropriate maps and photos for review and processing.

6. The MNRF Wawa District Manager and The Ministry of the Environment, Conservation and Park in Sault Ste. Marie will be contacted by e-mail in advance of the program by the Project Supervisor.

7. Herbicide Fact Sheets will be made available at manned restricted access points and at the mix/load site for review by interested or concerned public.

8. Proposed spray areas, (blocks), will be clearly posted with standard application signs approved by the Pest Control Section prior to application. The date of treatment will be added to these signs immediately following herbicide applications. Standard information on the signs will be:

    (a) name of herbicide
    (b) date of application
    (c) contact information for First Resource Management Group office for further information

9. The signs will remain posted for 30 days following application and will be removed prior to November 1st

10. Operational communications will be carried out as follows:

    (a) Aircraft, mix/load site, and ground control will be in touch with each other continuously via truck mounted and/or hand held radio communicators

    (b) The Project Supervisor will report the highlights of spraying activities on a regular basis to First Resource Management Group staff members

11. A report summarizing project details will be forwarded to the Ministry of the Environment, Conservation and Parks and to the MNRF in Wawa before November 15th by First Resource Management Group.

12. One common question asked is: *"Can I pick the berries?"* The response will be as follows and is consistent science-based information: *"Although Health and Welfare Canada has not placed any restrictions on consumption of berries even immediately following spraying, the Ontario Ministry of Natural Resources recommends that berries not be picked in the same year from areas that have been sprayed. All areas treated have been clearly posted. You are free to pick berries on any un-posted Crown Land".* Upon request, berry pickers will be directed to other potential berry areas.

    Please note: There will be no "do not pick the berries", advisement on the spray signs as

per direction from the pest control section.

13. Any reports of off-target vegetation damage, public, or animal incidents will be immediately investigated and reported by the Project Supervisor to the Ministry of the Environment, Conservation and Parks and the MNRF Wawa District Manager.

14. All proposed spray blocks have been identified through the Annual Work Schedule (AWS). Any concerned members of the public and/or organizations are also entitled to comment during the review of the AWS.

Part 2: Project Operations Plan

The Operations Plan has been developed to provide guidance and assistance to Project Supervisor & Licensed Applicator during the execution of spray applications. The Plan strives to maximize spray effectiveness while minimizing the risk of adverse, off target, effects. The health and safety of employees, contractors, the public in general, and the environment will take priority over all other concerns during the application phase of the program.

1. Application Time Frame: June 5th to September 30th.

2. The Project Supervisor will hold a regular briefing session with spray staff (including pilots) to review the planned operations. Placement of staff and the control of access are to be reviewed and stressed.

3. The Project Supervisor will ensure spray pilots have a clear understanding of targeted area boundaries before application commences.

4. Once the aircraft are over the block they are under the operational control of the Pilot(s).

5. Weather will be monitored on the spray blocks continuously during planned operations.

6. Long and short range weather forecasts will be checked on a regular basis by the Project Supervisor & Licensed Applicator.

7. Applications of the herbicide will not occur:

   (a) 4 to 6 hours before predicted rainfall or after actual rainfall or when vegetation is wet
   (b) Steady wind in excess of 8 km/hr
   (c) Humidity less than 50%
   (d) Temperature greater than 24 degree Celsius

8. Spray pilots will be provided with up to date, accurate overview map and photos of the proposed spray blocks. All areas of concern (buffer zones, habitation, etc.), will be clearly

identified.

9. Proposed blocks will have total targeted spray volumes calculated in advance of operations. Loads will be directed to specific blocks. Application volumes on each block will be recorded.

10. Mixing, loading and weather records will be maintained by the applicator.

11. Empty herbicide containers will be transported to a central collection area in a manner suitable to the Ministry of the Environment, Conservation and Parks .

12. The suitable time period for tending treatment will be following hardening off of crop pine and spruce trees. This occurs during the latter part of the active growing season and before the first "hard" frost, (August 1st - September 30th), approximately. Hardening off will be confirmed by field sampling prior to herbicide application for tending areas only.

13. Aerial site preparation operations are scheduled to start as early as June 5th.

Part 3: Safety Plan

The objective of this plan is to ensure the safe and effective delivery of the aerial herbicide program. All applicable Federal and Provincial Acts and Regulations will be complied with. Competent supervision and control on First Resource Management Group operations will be provided through a qualified Project Supervisor & Licensed Applicator.

Security will be maintained at mix/load sites by the applicator while the herbicide is on site. Spray blocks will be checked in the air and/or on the ground for presence of unauthorized people before spray operations commence. Blocks will not be sprayed when unauthorized people are knowingly present. The mix/load site, pilots and ground control will be in radio or cell phone contact with each other at all times during spray operations. All spray blocks are identified as emergency herbicide dump locations.

The applicator on each mix/load site will have on hand the following:

- Water shower deluge
- 2 X 20 Lb. CO_2 fire extinguishers
- Spill containment materials

First Resource Management Group on each mix/load site will have on hand the following:

- Individual first aid kits
- Toxicological fact sheets

Herbicide Material Safety Data Sheets will be on site. Emergency phone numbers will be with the Project Supervisor & Licensed Applicator and on site staff. The mixing/loading, fueling station, fuel storage, and herbicide storage areas are designated as no smoking areas.

Empty pesticide containers will be transported to an MECP approved storage location.

The licensed applicator has the responsibility to ensure the safe delivery of the program as prescribed.

This includes safety of operations at the mix/load site, air operations, ground operations, traffic control, and containment of spills and disposal of empty containers to Ministry of the Environment, Conservation and Parks specifications.

Part 4: Security Plan

Objective

This plan addresses the security of the total project. By implementing the following controls and checks, members of the public will not accidentally be adversely impacted, no damage or loss of equipment/material will occur, personal risk to project staff will be minimized, and no delay or disruption of the operation will be incurred. Access to spray blocks is closed to the public.

Action

1. All spray blocks will be posted to prevent the accidental spraying of, or injury to, member(s) of the public. This will be accomplished by addressing the following:

    a) The public will be informed of the project through the use of newspaper ads and mail-outs. (Paid ads to be placed 7 and 30 days in advance of the operation by the MNRF). The Spray Plan or Project Description, (depending on the location of request), will be available to the public for review.

    b) The public will be informed of the project through the posting of signs, (Notice of Aerial Spraying), located at all the key access routes to the area to be sprayed.

    . c) Direct contact will be made by the MNRF with all known users of the spray blocks, or those expected to encounter access disruption due to the project, through a mail-out.

    d) During the spray operation, public access will discouraged. Manned or Unmanned barricades may be used to facilitate restriction.

e) Efforts will be made to detect people who may be in the restricted area(s) by either deliberate action or inadvertent access, (fly-in or canoe-in), by undertaking aerial and/or ground reconnaissance before spraying.

f) In the event of a suspected or actual spray incident, persons involved will immediately:

(1) Be provided with a toxicological fact sheet for pesticides being used, (see M.S.D.S. sheets - Safety Plan);

(2) Be provided with the opportunity to shower and to have tents and clothes laundered;

(3) Be advised that, if they have any concerns, then First Resource Management Group staff will transport them to medical authorities for examination/consultation.

2. The operations base and helipad will be secured by discouraging public access, (to prevent loss or damage of equipment and materials, personal risk to project staff, or delay/disruption of the operation). This will be accomplished by:

(a) The possible establishment of manned and/or unmanned barricades to enforce the closure.

(b) In the event of difficulties, (civil disobedience, Ontario Provincial Police may be consulted/utilized).

3. Immediately following the operation, all barricades and equipment will be removed.

Vocal Confrontation

Description of Occurrence	Staff Response	Notification
Vocal Concerns: Concerns directed at spray program. Complaints received by staff assigned to security at spray block barricades, mix/load site or in transit.	**Provide** approved Fact Sheet describing herbicide in use. **Explain:** 1. prior notification process (i.e. 30 & 7 day public notice). 2. NAN notification. 3. Program in compliance with plan approved by MECP, MNRF. 4. Carried out by qualified/licensed applicators. 5. Describe posting of spray blocks. 6. Pre-spray surveys conducted. 7. Local band notification. **Document** conversation 1. who; 2. when (date & time); 3. nature of discussion; 4. what occurred.	In all cases: 1. **SECURITY** to notify **PROJECT SUPERVISOR & LICENSED APPLICATOR.**

Passive Confrontation

Description of Occurrence	Staff Response	Notification
Situation progresses to **Passive** confrontation where members of public proceed past established security points in order to delay or disrupt operation by: 1. Occupying spray block; 2. Occupying mix and load site; **OR** 3. Restrict staff from traveling along road corridors leading to spray block.	Project Supervisor/Licensed Applicator will respond as follows: 1. **At Spray Block** a) by confirming details of incident reported by security staff or pilot; b) ending spray session at affected block; c) continue spraying in alternate block(s) 2. **Mix/Load Site** a) secure site; b) ensure safety and FRMG staff, contractor personnel & general public are not compromised; c) **IF AND ONLY IF** safety not compromised continue in designated block 3. **Access Roads** a) instruct staff to return to mix/load site; b) barricades will be flown to required locations (under no circumstances will First Resource Management Group staff be left at assigned location without a vehicle) spray will continue in block. **OR** a) where approved plans require a manned barricade spray session will be discontinued in this location; b) designate alternate spray block(s); c) session will continue in alternate block as per approved plan 4. **Document incident.**	In all cases: 1. **SECURITY** to notify **PROJECT SUPERVISOR & LICENSED APPLICATOR.** 2. **PROJECT SUPERVISOR & LICENSED APPLICATOR** to notify **on site staff** & **MECP** (if spill reported). 3. **PROJECT SUPERVISOR** to **GENERALMANAGER**. 4. **PROJECT SUPERVISOR** to notify **O.P.P**. if necessary

Intimidation and Threats

Description of Occurrence	Staff Response	Notification
Intimidation & Threats: Situation progresses (at either the spray block and/or mix and load site) in which FRMG personnel, contractor personnel, or equipment is threatened or intimidated by a member of the public through: 1. an action 2. tone of voice 3. physical presence	**Project Supervisor/Licensed Applicator will respond by:** 1. Securing site - communicate to staff to secure block, mix/load site (ie. equipment, herbicide storage, etc.); 2. communicate with contractor staff; 3. Determine: a) ending session; b) continuing session in present or alternate block; 4. **Document incident.**	**In all cases:** 1. **SECURITY** to notify **PROJECT SUPERVISOR & LICENSED APPLICATOR.** 2. **PROJECT SUPERVISOR & LICENSED APPLICATOR** to notify **on site staff** & **MECP** (if spill reported). 3. **PROJECT SUPERVISOR** to **GENERALMANAGER**. 4. **PROJECT SUPERVISOR** to notify **O.P.P**.

Description of Occurrence	Staff Response	Notification
Situation progresses to an **Active** confrontation (at either location) when a member of the public inflicts; 1. Damage or loss to equipment and/or materials; 2. Personal violence against project staff (defined as **any** physical contact); 3. Any action which delays/disrupts staff in performing duties.	Staff will respond immediately at: **1. Spray block** a) Staff to leave assigned post immediately; b) call for assistance (each staff to be equipped with 2 way hand held radio); c) Project Supervisor & Licensed Applicator to end session immediately and advise all FRMG and contractor staff involved; d) end spray session **2. Mix/Load Site** a) Project Supervisor to end session immediately and advise all FRMG and contractor staff involved; b) secure site as best as possible under circumstances; c) all staff to leave assign post immediately & meet at previously designated location; d) divert aircraft to alternate landing sites if possible; e) request assistance from OPP on site **3. Document incident.**	In all cases: 1. **SECURITY** to notify **PROJECT SUPERVISOR & LICENSED APPLICATOR.** 2. **PROJECT SUPERVISOR & LICENSED APPLICATOR** to notify **on site staff** & **MECP** (if spill reported). 3. **PROJECT SUPERVISOR** to **GENERALMANAGER**. 4. **PROJECT SUPERVISOR** to notify **O.P.P**.

Active Confrontation

Module 18

Licensing and Wood Measurement

for the

2021-2031 Nagagami Forest Management Plan

1.0 Licensing and Wood Measurement

1.1 Introduction

The FMP provides various strategies to deal with the licensing and utilization of Crown resources on the Nagagami Forest. The *Northeast Region Creating Forest Operations Opportunities in Low Market Conditions Strategy* is to be considered throughout the licencing process. Licencing and various wood measurement agreements that are prepared reflect the cooperative arrangement of the SFL holder and their third-party operators.

1.2 Overlapping Licencing and Approval

All harvest operations described in the forest management plan will be carried out under an 'Approval to Commence Harvest Operations' issued to the SFL holder on the Nagagami Forest. However, in some cases a Forest Resource Licence (FRL) is issued by MNRF on the request of the SFL holder. The following outlines the process for licensing and approvals on the Nagagami Forest:

- Prior to the implementation of the FMP, the SFL holder assigns harvest allocations from the approved forest management plan to each Harvesting Contractor.
- The SFL holder is responsible for the securement of the FRL annual harvest approvals and authorities to haul (ATH) with a copy held by management contractor.
- Any overlapping licensee is responsible for obtaining and managing their bills of lading (BOL) from MNRF
- Copies of the harvest approvals and ATH documents will be held by the SFL holder.

1.3 Wood Measurement

1.3.1 Brush Mat and Construction Material

The following is a field and documentation procedure that operators will follow when reporting to the MNRF on the utilization of merchantable timber under road bed (brush mat).

- Only merchantable wood harvested from the right of way and utilized as brush mat is reported.
    - Miscellaneous tallies will be made at the end of the harvest block and/or access operation or by March 31st of each fiscal year
    - Whereby volume and species will be determined by road/block average for that area and submitted to the Forest Technical Specialist in the applicable MNRF administrative district.
    - Three methods are approved for determining volume:
        1. Estimate e.g., number of trees times average cubic meter/piece =Volume cubic meter/species.
        2. Stick Scaling individual stems
        3. Factor e.g. Average volume per Km

- Merchantable timber used for other operational requirements such as bridge construction or culvert installation will also be reported;

- Merchantable wood harvested from the road right-of-way and not utilized as brush mat and/or construction material is reported under the standard scaling method (i.e. mass scale or Domestic Scale Agreement)

- Trees deemed merchantable (having a butt minimum diameter of 10 cm) are measured and reported;

- Volumes will be reported separately by harvest block identification or road name following the approved names in the FMP;

- From a sample area taken along both sides of the road an average diameter will be used to assess the number of stems required to determine the total cubic metres of merchantable wood. Sample will be similar in terms of species composition, diameters and terrain conditions;

- Recorded information will be species and diameter at the butt;

- The total length of right of way will be reported as per the reporting schedule;

- Right of ways not requiring brush mat construction will be documented.

Corduroy Reporting Sheet

1 kilometre of road corduroy = 344.000m³

Overlapping Licensee Name: _____

Licence Number: _____

Approval Number: _____

Corduroy ID Number _____

Location of Corduroy (road name, block number, etc):

_____

_____

Ground identifiers (GPS way points, stakes, etc):

_____

_____

Length of Corduroy (km or 100m, indicate which used): _____

Method used to measure length: _____

Date installed: _____

Date measured: _____

Species: _____

(Note: Indicate the % of each species if more than 1 species is utilized)

Overlapping Licensee Contact: _____

1.3.2 Procedure for Flare Removal

The Harvesting Contractor will trim root collar flares on merchantable conifer species (spruce, balsam fir and jackpine) on operations within the Nagagami Forest. This is not considered a normal practice and the procedure is required as a safety precaution for conifer with excessive root collar flare when the destination is to a saw mill. It is a complementary practice that addresses operational concerns while maintaining a standard that is deemed to be in compliance with the Crown Forest Sustainability Act.

- Where conifer has been scaled at a skidway:
  - If the "scale mark" is removed during trimming, it must be replaced to indicate that the stem has been scaled.
  - Trimming could occur prior to scaling in which case these pieces will be scaled in the same manner as mechanical damage, where log faces have been squared.

- Where flares are trimmed after conifer has been piled at roadside or processed at the stump, the flare butt log will be processed as follows:
  - Flare projection will be removed with a chain saw creating a rounded butt-end.
  - A 10 cm to 16 cm piece will be removed from the log or until the root collar flare is removed.

- The Harvesting Contractor will instruct its operators to minimize the production of flare butts. Operators will be trained and instructed on the procedures and specifications. The Harvesting Contractor will provide close supervision during these operations.

- HPL staff will monitor flare removal to ensure it is being performed as per direction in module. If in the opinion of the Crown, the waste of merchantable fibre becomes excessive because of this procedure, the Crown will communicate with the SFL holder and the issue will be resolved or wasteful practice charges may be applied.

- The intent of this agreement is to allow the Harvesting Contractor to remove butt flare for safety purposes only, and not for rot removal, which would affect the cull factor. Cull factors are calculated based on the percentage of rot present in harvested wood. This procedure is not intended to eliminate rot from harvested wood.

1.3.3 Scaling Agreements (Fixed Volume/Biofibre and Fuelwood)

The Ministry prepares various scaling documents that have been developed for use on the Nagagami Forest. They are available as both a *Container Agreement* (Fixed Volume/Biofibre and Fuelwood) and *Domestic Scale Agreement*. These agreements adhere to the following principles:

- The SFL holder agrees with the Ministry that the Agreements apply only to Crown forest resources harvested and sold as fuelwood and/or biomass.

- In all cases, the removal of Crown forest resources from the place of harvesting before measuring must be authorized in writing by the Ministry (Authority to Haul Unscaled Crown Forest Resources).

- Where Crown forest resources are authorized to be moved from the place of harvesting before measurement, the Harvesting Contractor will observe any conditions of control required as part of the Authority to Haul Unscaled Crown Forest Resources (i.e. for example the use of Ministry bills of lading).

Copies of the agreement have been developed and are available for review by operators on the website.

1.3.4 Interpretation Note for Topping and Butting Practices on the Nagagami Forest

A review of on-site work practices related to utilization resulted in the identification of operational issues during the 2011-2021 FMP period. A great deal of effort was required in closing these issues and preventing their re-occurrence. An onsite meeting with both MNRF and forest industry staff was carried out on March 21, 2019 in several harvest blocks and the following is the agreed to resolution for these issues moving forward.

Some of the key principles:

- The goal is to get as much of the merchantable stem processed and hauled from the block as possible. It was recognized by industry staff that a large part of the issue could be addressed by improved merchandizing of the stem.

- An emphasis is to be placed on the production of 9' "stud" logs to minimize the losses taken in the production of 8' "pulp" logs produced on the forest. Pulpwood continues to be the largest challenge to managing losses, as without studs as an alternative, pulp remains physically attached to the sawlogs. When replacing pulpwood with studs there is some concern that some merchantable material, (merchantable portions <9' in length) left at the harvest site may reduce the merchantable portion delivered/scaled, contributing to stumpage and subsequent renewal.

- Assessments to date (small sample size) showed an insignificant change in total merchantable volume. Only pulpwood pieces straddling merchantability (2.7m passing under 9.1cm) were processed into pulp but could not be processed into studs. The diameter of these non-stud, pulpwood pieces were predominantly tallied in the 10cm class on the large end, all tapering into unmerchantable size classes.

- Assuming pieces are loaded and scaled with an equal distribution of butts and tops, roughly 50% of these pieces will tally on the large end as merchantable pulpwood and 50% as unmerchantable pulpwood. Each piece tallied on the merchantable end (assuming 10cm class) total 0.020m3, pieces tallied on the unmerchantable end do not contribute to stumpage or renewal.

- Assuming half the pieces will tally merchantable and half the pieces will tally unmerchantable, 100 pieces of 10cm class pulpwood would be required to make 1 merchantable cubic meter.

- Harder to quantify are defective sawlog pieces that would still make pulpwood, ex. Excessive sweep or crook, heavy rot, etc.

- The SFL holder will continue to monitor slash piles, harvest yields and the renewal account balance to assess any changes.

- Operators will normally identify potential issues with utilization within the first week of operations. Do not wait until operations are completed!

- MNRF re-iterated that the scaling manual is clear on what constitutes a merchantable piece and any deviation must be approved in the FMP.

- MNRF recognized the difficulties associated with local markets (i.e. particularly chip and pulp wood markets). Previous methods of dealing with merchantable pieces of any length where costly and ineffective and more so in these economic times.

- It is the expectation of all parties that the volumes of non-specification wood will be minimal.

Topping practices:

- It is recognized that industry topping should not exceed 10 cm diameter class outside bark in order to meet the maximum 2.5 m length. This is particularly important on full tree processing at roadside.

- All pieces 2.5 m in length and greater having a top diameter of 10 cm diameter class or greater outside bark at small end must be utilized. This could be achieved by improved merchandizing techniques.

- Harvesting Contractors need to monitor work practices on CTL operations to reduce the amount of unmarketable material being generated. Operators may need to adjust lengths lower in the stem which would allow the final top end piece to be less than 2.5 m.

- <u>It is imperative that problems are communicated early!</u>

Excerpt from Scaling Manual Third Edition 2007

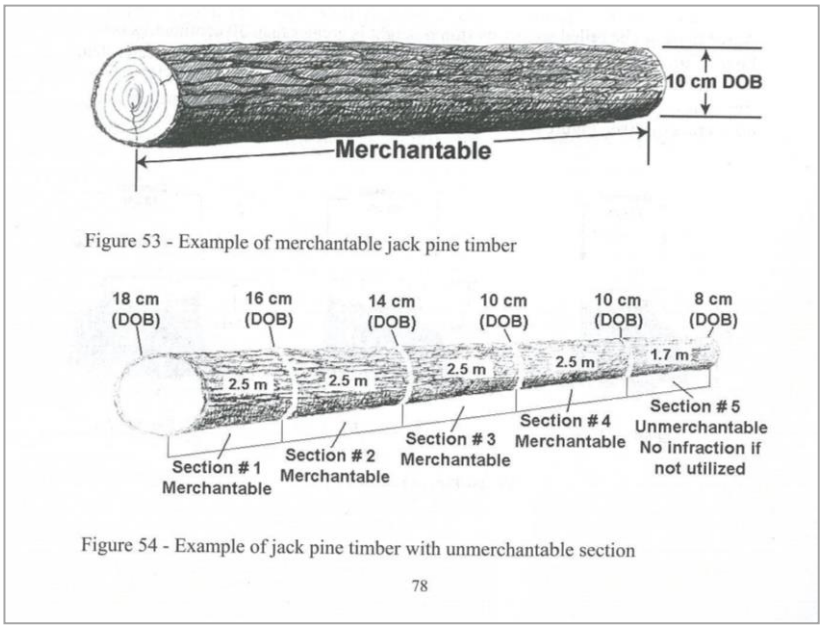


Figure 53 - Example of merchantable jack pine timber

Figure 54 - Example of jack pine timber with unmerchantable section

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To resolve this issue, it has been agreed that:

1. In the case were merchandizing will not be effective and the SFL holder notes a reduction in marketable timber being produced then MNRF will be contacted immediately.

2. Estimating volumes to ensure that Crown interest is protected (i.e. stumpage received on merchantable timber) will only occur with prior consultation and approval of MNRF.

3. Volume will be calculated by the SFL holder and approved by MNRF.

4. Miscellaneous tally cards will be submitted for agreed upon volumes as determined by field staff.

Butting practices to remove defect and mechanical damage:

- In general, MNRF has found a prevalence of butting occurring on tree length operation or those operations where wood is skidded to roadside prior to processing.

- Butting has included cull, partial defect, fire scar and mechanical damage (i.e. appears to have been a result of an increase in wood quality requirements at mills)

- Mechanical damage must be addressed by means of improved work practices rather than removal of stem pieces. However, material left at roadside associated with flare removal parallel to stem is not an issue

- In CTL operations prevalence of butting has occurred as a result of excessive testing of trim saw on merchantable pieces. This practice needs to be discouraged.

- Low stumps heights resulted in increase in flare. Some of the butted material would normally have been left on stump but higher stumps result in increase wear to equipment. A balance must be achieved between these operational issues and remains at the discretion of the operator.

- There is no defect deduction for TL material until volumes are weighed therefore removal of defect in the bush results in decreased volumes when factors are applied. MNRF must ensure that Crown interest are protected (i.e. stumpage received on merchantable timber)

- **Once again, it is important that problems are communicated early!**

To resolve this issue, it has been agreed that:

1. Where the Harvesting Contractor notes a prevalence of defect for which cull removal would improve wood quality MNRF will be contacted immediately.

2. Butting will be permitted when less than 60 cm long and greater than 50% defect.

3. Butting will be permitted only with prior consultation and approval of MNRF when butting longer than 60 cm or leaving greater than 2.5 m length cull pieces.

4. Butts to be left at roadside until the volume is calculated by the SFL holder and approved by MNRF.

5. Miscellaneous tally cards will be submitted for agreed upon volumes as determined by field staff.

1.4 Temporary Holding Yards

There are times during operations when it may become necessary to move harvested timber to areas that are more accessible for future hauling (i.e. from winter road onto gravel road). These locations are intended to be for short term, and normally not recurring use.

The following direction will apply in these circumstances:

1.4.1 Stockpiling of wood

1. **Stockpiling of wood within the allocated area (i.e. block) from which it was harvested:**

    - Where wood is being stored roadside for future hauling within the same block from which it was harvested, no further approval will be required.
    - Where wood is being stored within another approved block from the same AWS year.

- Where wood is being stored within an approved branch or primary road corridor.
- BOL's will not be required for stockpiling where no holding yard agreement is necessary. BOL's must be used for hauling to final destinations.
- It is the responsibility of the licensee to ensure an extension to the Authority to Haul (ATH) is in place prior to its expiry.

2. Stockpiling of wood outside the allocated area (i.e. block) from which it was harvested:

- In the case of Crown Lands, an LUP will be required. See the District MNRF.
- In the case of Private Lands, written authorization from the landowner will be required which may include an email consent.
- In all cases, a Temporary Holding Yard will be required to be added to the ATH through District MNRF. Section 1.4.2 (below) provides direction from Procedure FOR 05 05 26 regarding Temporary Holding Yards (concentration points)
- Use of BOL's will normally be required, and will be directed by the Holding Yard Agreement BOL's will be from the previous year's (year of harvest) approval.
- A ledger tracking wood movement into and out of the holding yard will normally be required to be maintained.
- It is the responsibility of the licensee to ensure an extension to the Authority to Haul (ATH) is in place prior to its expiry.

1.4.2 Conditions applicable to all temporary Holding Yards:

- Where a Holding Yard is required, the request will be made by the SFL holder to the District MNRF containing, as a minimum, the following information:
    1. The source of the forest resources by licence and approval. If the unscaled timber is to be from multiple approvals, the controls to keep this wood separate by approval must be identified.
    2. The location of the holding area with map
    3. Rationale for the requirement of the yard
    4. The period for which the yard is required
    5. The approximate volume and species to be transported to the yard
    6. How and where the timber will be measured and the final destination(s)
    7. A letter of permission from the landowner or permit holder if the location is on private land.

- Remember to identify any wood left at roadside on the back of the Operations Map under the Wood Measurement/Movement activity. Indicate approximate volume (loads/m3), species (conifer/hardwood) and location (operations map).

- In the event the down piled wood is not removed from the holding yard within two years after the date of the start-up notice or, failing a properly filed start-up notice, two years after the date of approval of the AWS under which the operation was authorized, or where wood is not removed prior to the expiry of the Holding Yard, then an Operational Issue will be created in FOIP to record this occurrence.

- In order to extend the existing HPL *Authorizations To Haul Un-Scaled Crown Forest Resources* that 1) extend the haul beyond March 31, or 2) leave wood at

roadside in the harvest block, or 3) extend the haul beyond March 31 from the stockpile areas, the following information must be submitted as soon as possible to the SFL holder for each area that the above applies:

a. Licence #
b. Approval #
c. Management Unit:
d. Block # (or stockpile location)
e. Date you wish ATHUCT to be extended to (i.e. Hauling completed by July 31 maximum or as specified by Tenure and Measurement branch of MNRF)
f. Map showing down pile location. Remember to identify any wood left at roadside in your FOIP report.

- Send information by e-mail and fax maps in order to ensure that it can be processed quickly. If not notified by **March 15** of each year then it will be assumed that you have moved all your wood to the mill.
- The Harvesting Contractor is responsible for required cleanup and debris management at the site. In those cases where damage to existing plantations occurs then the SFL holder is responsible for renewal of site.

1.4.3 Free Use of Crown Lands:

- As reminder, Table "A" of the "Free Use Policy" (PL3.03.01) dated February 26, 2003 lists the following activities as 'permitted free uses' for the Forest Industry:

  - Transitory occupation by equipment such as mobile slashers and chippers, mobile harvesting equipment and supporting mobile accommodation trailers (e.g. individual recreational trailers or similar mobile structures), etc. that are directly involved in and move with an active forest harvesting and management operation. Excluding locations extensively used by the transient public (e.g. public camping areas and access points.).

  - Gates approved and located as per the road use strategy in an approved Forest Management Plan.

  - Note: the activities listed above may be subject to other approval requirements / permission (e.g. Public Lands Act Work Permits).

1.4.4 Previously Scaled Crown Wood:

- In the case of ***'Previously Scaled'*** Crown wood**:**

  a. Request to move wood using 'Declaration of Previously Scaled Wood' form. Proponent indicates approximate volumes and destinations points on form, which is then submitted to MNRF District.

  b. Declaration approved (i.e. signed by Tenure and Measurement) and returned to SFL. (Note: Form is available on the Nagagami Forest website in *Operators Site* section)

c. Copy of form forwarded to Destination mills scale house by MNRF (i.e. as per locations indicated on the form). In the case of *Stock Pile Agreements* they usually require that a shipping ledger be maintained at each harvest approval site and a receiving ledger be maintained at the storage location. Refer to your specific agreement for details.

d. No MNRF Bills of Ladings required, however, where a formal *Holding Yard Agreement* has been put in place there is usually a requirement to use a company BOL and maintain a ledger of wood movement. Refer to your specific agreement for details.

Date:____ Declaration #:____

KIRKLAND LAKE DISTRICT
DECLARATION OF PREVIOUSLY SCALED CROWN TIMBER
2006 - 2007 SEASON

EFFECTIVE FROM APR 1, 2006 TO MARCH 31ST, 2007 "EXAMPLE"

NAME: FORESTRY CONTRACTING.
ADDRESS: R.R #1 ENGLEHART
CONTACT PERSON: JOE SMITH PHONE #: 544-3121 FAX#:

Wood was cut under the authority of:

Forest Resource Licence #	Or Licence #	APPROVAL #	TOWNSHIP	VOLUME (# OF LOADS)	SPECIES
	807247	808248	VARIOUS	5000	Po, Sp.

Current location of previously scaled Crown timber if different from above:

TOWNSHIP: EBY LOT: 10 CONCESSION: 2

OR YARD LOCATED AT:

DESTINATIONS: (Please include any VIA Locations)

CODE	DESTINATION NAME & LOCATION	CODE	DESTINATION NAME & LOCATION
31609	GFP. ENGLEHART		

I, JOE SMITH, confirm and attest by my signature that the above volume(s) of Crown timber has been manually scaled by a licenced MNR approved scaler or Mass Scaled at a MNR approved point of delivery per an existing Authority to Haul Unscaled Crown Timber form and that a return for Crown dues has been made.

*____ BILL J. TO SIGN.
Signature Crown Representative

Revised March 15, 2006

1.5 Interim SPF Utilization Standards for Topping and Butting Practices on the Nagagami Forest

The following describes the modified operations and associated standards that the Licensee will utilize to address marketability concerns. As previously described in this Module, efforts are being focused on reducing the amount of pulpwood generated on the Nagagami forest. The primary method for doing so is in the production of 9' stud pieces (approx. 282 cm in length) out of logs having a top diameter of 10 cm (i.e. as an exact measurement) or greater outside the bark at the small end. Any merchantable log with a butt diameter of ≥10 cm outside the bark, but tapering down below 10 cm at the top end (282 cm) is being considered as un-marketable on approval of the MNRF.

The scaling manual defines "merchantable timber" as *"any conifer, poplar or white birch log in which more than one-half the total content…is sound wood…"* and similarly defines a "merchantable tree" as *"a standing conifer, poplar or white birch tree where more than one-half the total wood content is sound."* With this broad definition, the term *"merchantable"* applies to all reasonably sound wood of all species, regardless of whether it has an economic demand.

The Scaling Manual and the Forest Operations and Silviculture Manual prohibit wasteful practices and state that the minimum utilization standards must be followed on all forest resource operations unless otherwise described in the approved Forest Management Plan. Deviation from these minimum utilization standards and the leaving of merchantable trees and/or wood fibre are often incorporated in the FMP in order to satisfy silviculture objectives (e.g. seed trees) or habitat requirements (e.g. downed woody debris (DWD) or residual forest cover). A third and much more variable reason for leaving merchantable timber is a result of market related issues associated with a certain species or product.

Given the location of processing facilities in relation to the operating area, harvest and trucking costs, timber dimensions/quality, and available volume, the economic demand for a particular species or product may vary considerably. Consequently, timber may be merchantable but not be marketable. These market influences are the real determinant of whether a species/product can be fully utilized. Locally, the SFL has seen the number of resource processing facilities and associated markets decrease since its inception. Local impacts have been related to the closure of the Weyerhaeuser Products OSB mill (Wawa), St. Marys Paper Ltd. (Sault Ste. Marie), and most recently the Rentech inc. wood pellet facility (Wawa). Pulpwood (8' SPF) pricing from the Nagagami forest has typically been below the cost of production and delivery to the AV Terrace Bay pulp mill.

Conversely, the Hornepayne Lumber (HPL) and White River Forest Products (WRFP) sawmill facilities in Hornepayne and White River have made significant upgrades to improve recovery rates for sawlog products to ensure economic viability of their facilities. The intent of this interim standard is to reduce rather than eliminate the amount of by-products that are produced during the processing of round wood into dimension lumber at sawmills. Sawmills have continued to develop and expand markets for by-products where possible. For example, mixed wood timber from the license is utilized as biomass at the Hornepayne Power Cogeneration facility, (completed in 2014). Oversize SPF logs (between 45 – 53 cm) are sold to WRFP. Logs greater than 53 cm are typically sold to Midway Lumber Mills Ltd. in Thessalon ON.

A review of on-site work practices related to utilization has continued during the term of the FMP. As market conditions change, work practices and standards need to be tailored to adapt to new harvest systems and equipment on the forest in order to remain competitive. Introduction of cut-to-length processing in the woodlands is the field level response to changes in markets. The fixed-length harvesting heads are a common application currently in use across the province. It has been introduced to maintain the economic viability at resource processing facilities as pulp markets diminish or are eliminated. During this transition, joint field assessments have been conducted and indicate that the interim standards would not substantially increase the amount of fibre left in cutover.

Efforts have still been made to explore as many options as possible to utilize the full tree.

- All methods of harvest will leave a portion of the stem following processing, however, utilization of these residual pieces from the cutover is not operationally feasible at this time (i.e. tops and short defect pieces). It is recognized that organic matter that is not part of a harvested tree (including boles, branches, roots, bark, leaves, needles, debris, soil carbon, etc) will remain on site and contributes to the strategic landscape objectives (e.g. downed woody debris).

- Deliveries of biomass to the Hornepayne Power cogeneration facility will continue but is limited based on proximity to the facility as well as market demands for biomass.

- Use of in-bush chippers has been attempted but requires use of the full tree stem rather than residual portions of stems which limits its application. As well, the wood chips currently generated from sawmills greatly exceed market requirements and makes this option both economically and operationally impractical.

Regular onsite meetings between MNRF and forest industry staff has resulted in the following approach to deal with marketability concerns.

Some of the key principles:

- The goal is to get as much of the merchantable stem to the road as possible. It was recognized by industry staff that a large part of the issue could be addressed by improved merchandizing of the stem.

- Operators will normally identify potential issues with utilization within the first week of operations. Operators cannot wait until operations are completed

- MNRF has re-iterated that the scaling manual is clear on what constitutes a merchantable piece and any deviation must be approved in the FMP.

- MNRF recognized the difficulties associated with local markets (i.e. particularly chip and biofibre markets). Previous methods of dealing with merchantable pieces of any length were costly and ineffective and more so in these economic times.

- It is the expectation of all parties that the volumes of non-specification wood will be minimal. Any reoccurrences of operational issues could result in step and incremental compliance response

- Monitoring for additional markets or a change in market condition by the Licensee will be ongoing, with updates provided to the District MNRF annually.

- If during operations there is a change in markets, the Licensee will notify the MNRF. The decision to return to normal operations or continue modified operations will be made in consultation with the District.

- The Licensee and MNRF will review the available markets prior to issuance of Annual Harvest Approvals and the decision to proceed with continued modified operations will be documented annually in the AWS.

- Impacts to silvicultural operations are not expected as any increase in residual stems can be effectively dealt with by current mechanical site preparation and treeplanting techniques. Existing silvicultural ground rules currently include deferral of mechanical site preparation for up to three (3) years to allow for deterioration of woody debris. An existing seed source is derived from cones left as a result of processing at the stump and provides for natural ingress. This allows for an area-based planting option which has proven successfully in meeting regenerations standards on these sites. Routine post-harvest assessments of these sites will be used to assess and determine which of the silvicultural treatment package options is most effective. These treatment options will be adapted as required to ensure that regeneration efforts remain effective.

The following interim spruce, pine and balsam fir (SPF) utilization standards will be implemented on the Nagagami Forest during these changes in markets:

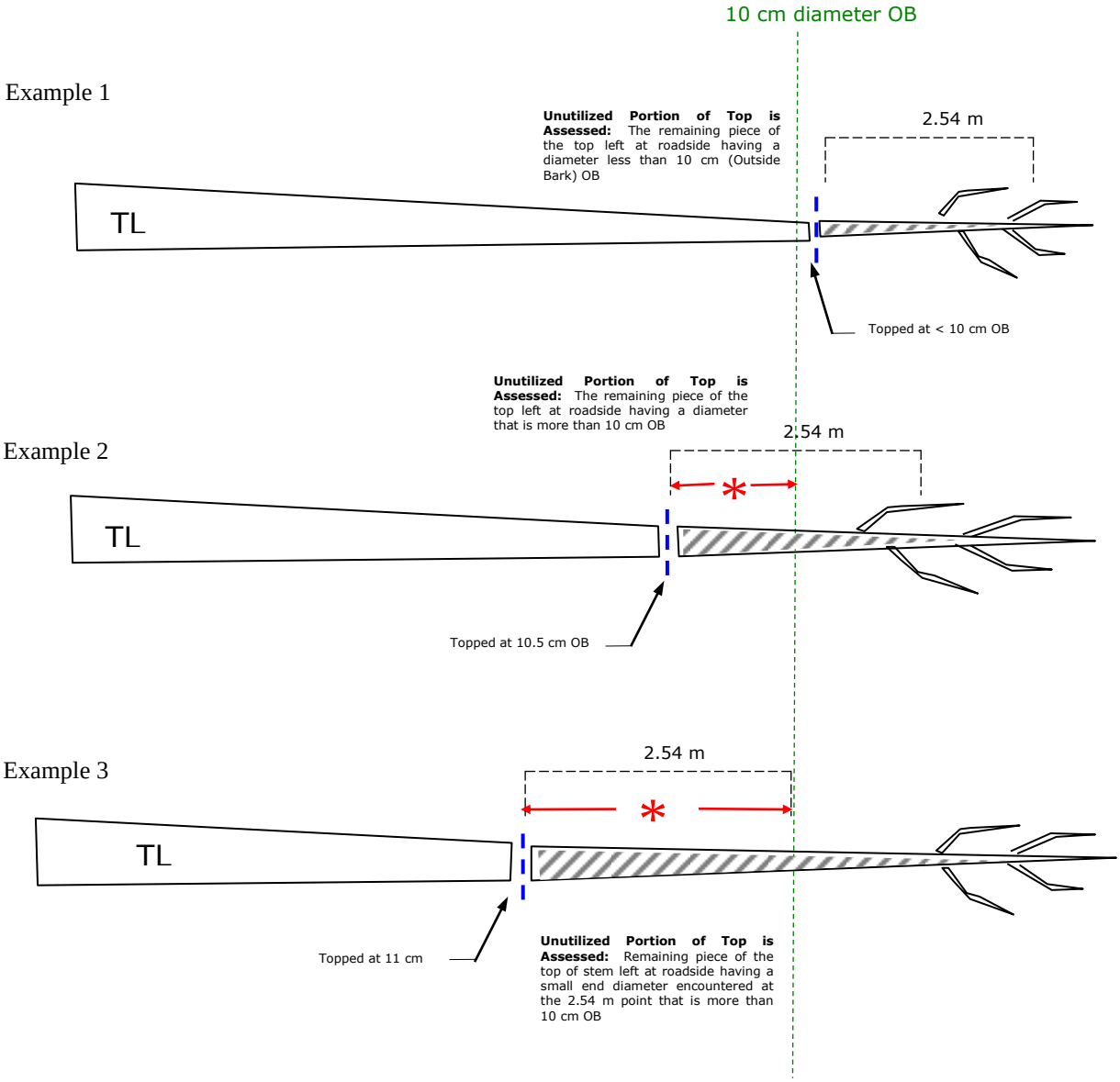
Treelength Topping practices:

- Where full tree logs are skidded to roadside for processing using stroke delimbers, it is recognized that industry topping will not exceed 10 cm diameter outside bark (i.e. no further processing into fixed length logs will occur prior to delivery to mill).

- This could be achieved by ensuring that topping is less than 10 cm diameter outside bark when using stroke delimbers to pre-process full tree material at roadside.

Examples of utilization standards related to roadside processing of full tree stems:





Fixed Length Topping practices:

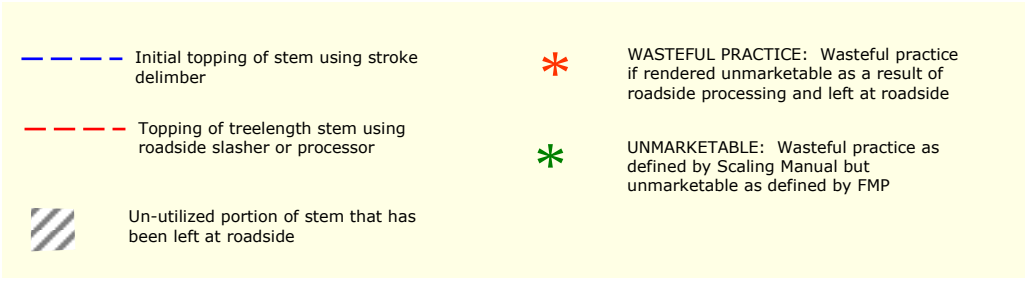
For Stems Pre-processed from Full Tree into Treelength using Stroke Delimber:

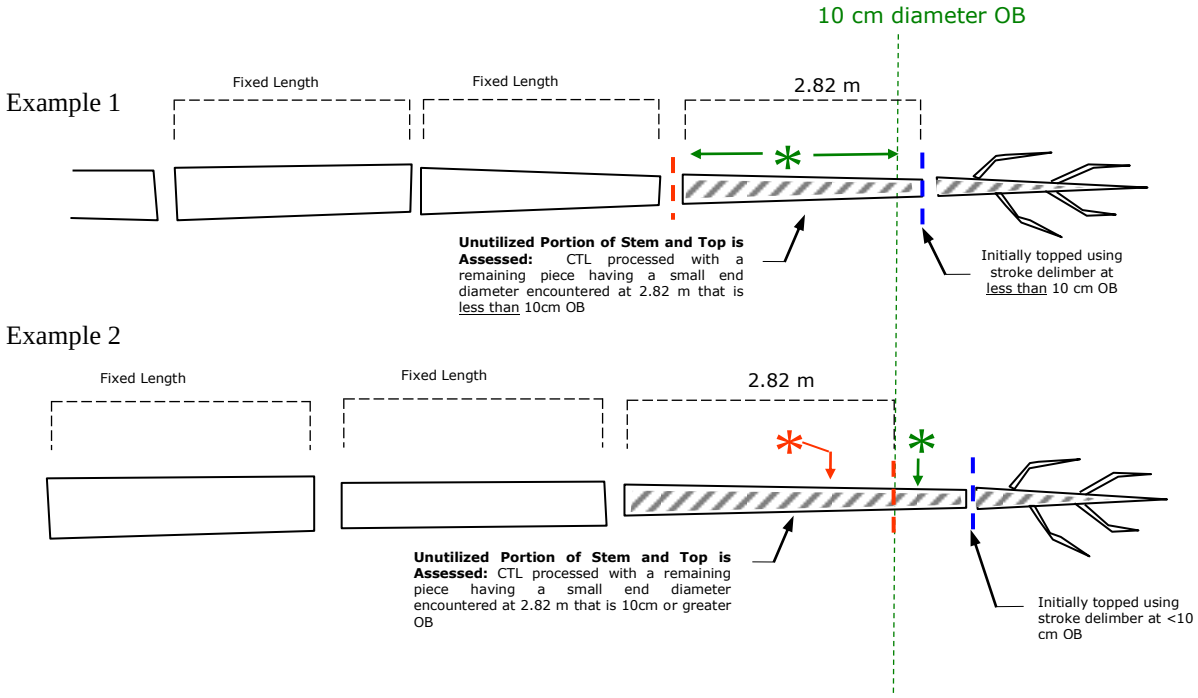
- For fixed length logs produced by roadside slashers, all pieces 2.82 m in length and greater, having a top diameter of 10 cm (i.e. as an exact measurement) or greater outside bark at small end must be utilized.

- This could be achieved by ensuring that topping is less than 10 cm diameter outside bark when using stroke delimbers to pre-process full tree material at roadside.

- Companies need to monitor work practices on CTL operations to reduce the amount of unmarketable material being generated. Operators may need to adjust lengths lower in the stem which would avoid the final top end piece to be less than 2.82 m.

Examples of utilization standards related to roadside processing of full tree and treelength stems:





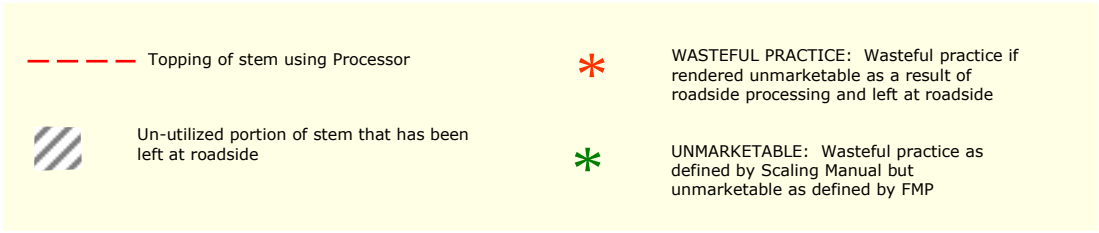
For slashing of Full-tree stems using a Processor:

- For fixed length logs produced by CTL processors, all pieces 2.82 m in length and greater, having a top diameter of 10 cm (i.e. as an exact measurement) or greater outside bark at small end must be utilized. This could be achieved by improved merchandizing techniques in the lower part of the stem.

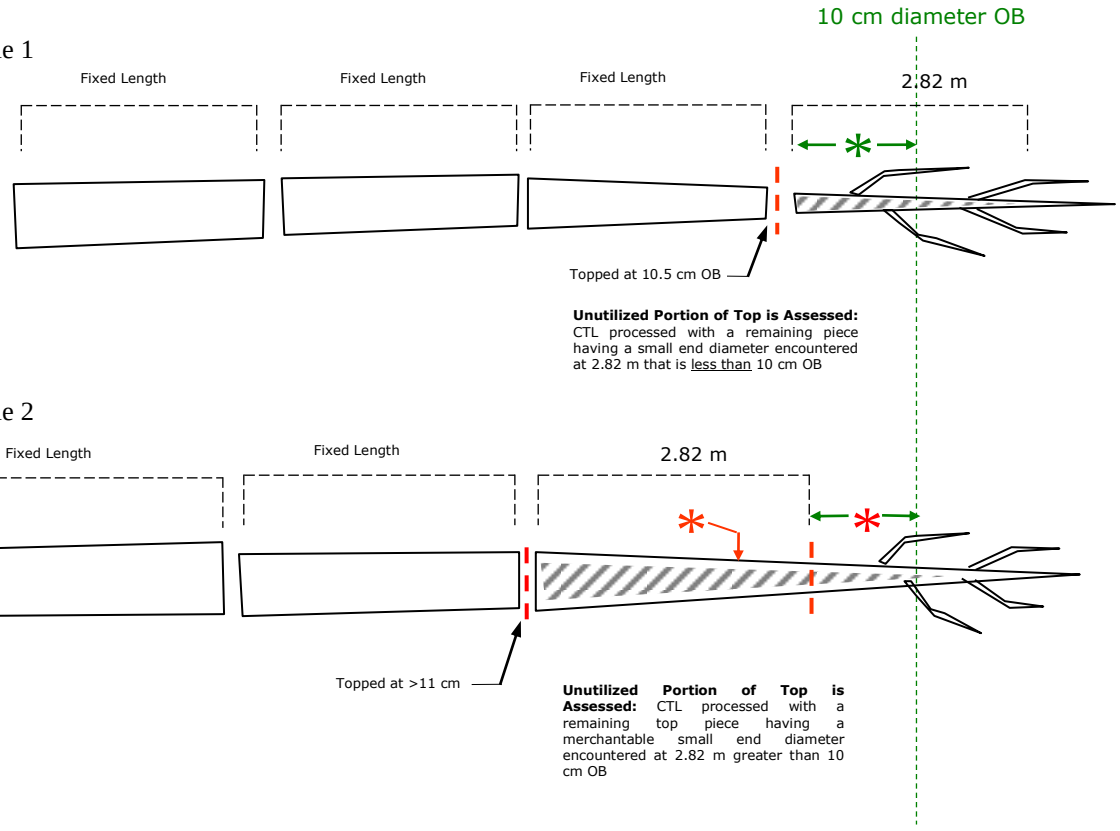
- Companies need to monitor work practices on CTL operations to reduce the amount of unmarketable material being generated. Operators may need to adjust lengths lower in the stem which would avoid the final top end piece to be less than 2.82 m.

- It is imperative that problems are communicated early

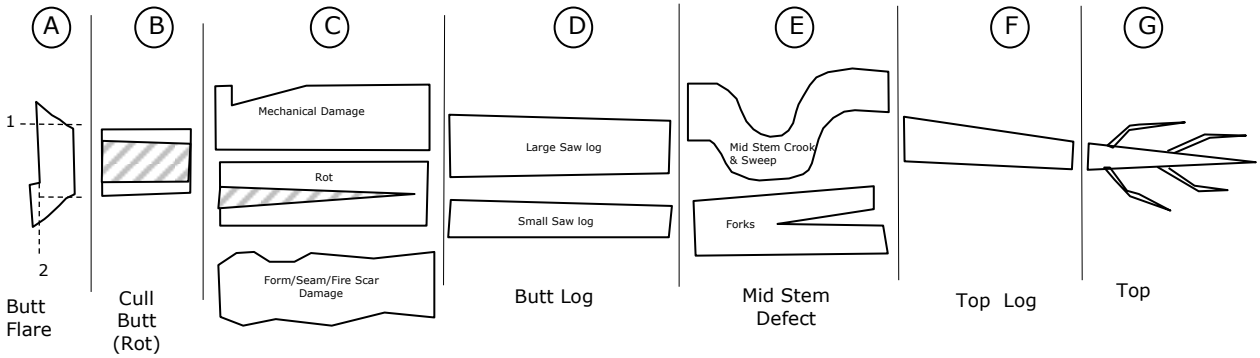
Examples of utilization standards related to roadside processing of full tree stems:



Example 1



Example 2



Butting practices to remove defect and mechanical damage (Sections A, B and C):

- Butting has occurred on tree length operation or those operations where wood is skidded to roadside prior to processing.

- Butting has included cull, partial defect, fire scar and mechanical damage (i.e. a result of an increase in wood quality requirements at mills)

- Mechanical damage must be addressed by means of improved work practices rather than defect removal. However, material left at road side associated with flare removal parallel to stem is not an issue

- In CTL operations butting can occur as a result of testing of trim saw on merchantable pieces. This practice needs to be discouraged.

- Low stumps heights result in an increase in flare. Some of the butted material would normally have been left on stump but higher stumps results in increase wear to equipment. A balance must be achieved between these operational issues and remains at the discretion of the operator.

- There is no defect deduction for TL material until volumes are weighed therefore removal of defect in the bush results in decreased volumes when factors are applied. MNRF must ensure that Crown interest are protected (i.e. stumpage received on merchantable timber)

- Once again, it is important that problems are communicated early

Merchandizing practices to remove natural defects (Section E):

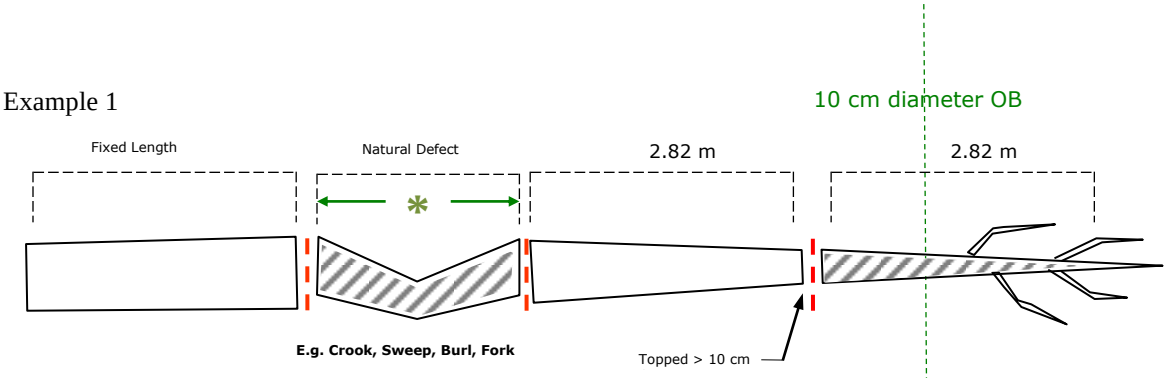
- Portion of stems that have obvious natural defects can result in safety concerns at resource processing facilities. Stems may fragment and/or lodged in equipment during sawing. This may necessitate that sawmill workers manually dislodge the pieces in saws increasing potential for injuries.

- It is also recognized that the time and effort required to deal with stems containing natural defects have had a significant impact on productivity at local resource processing facilities

- Stems with natural defects such as burls, crooks, sweep, forks and heavy branching cannot be processed into dimension lumber. Quality specifications outline a variety of natural defects that are not suitable for processing in order to ensure for the safety, economic viability and equipment limitations at local resource processing facilities.

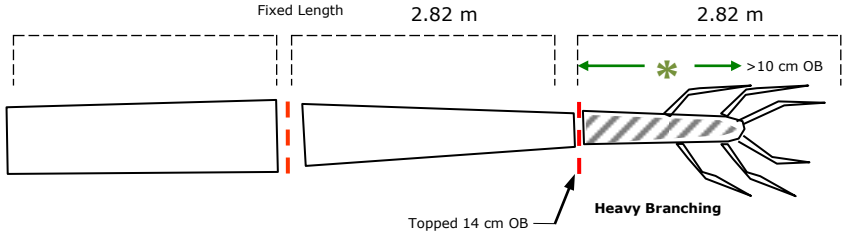
- Efforts will be made to leave poor quality stems as a component of the required wildlife trees.

Example 1



Unutilized Portion of Stem and Top is Assessed: CTL processed with a remaining piece less than 2.82 m but with the small end diameter encountered that is more than 10 cm OB and can be attributed to a natural defect

Example 2

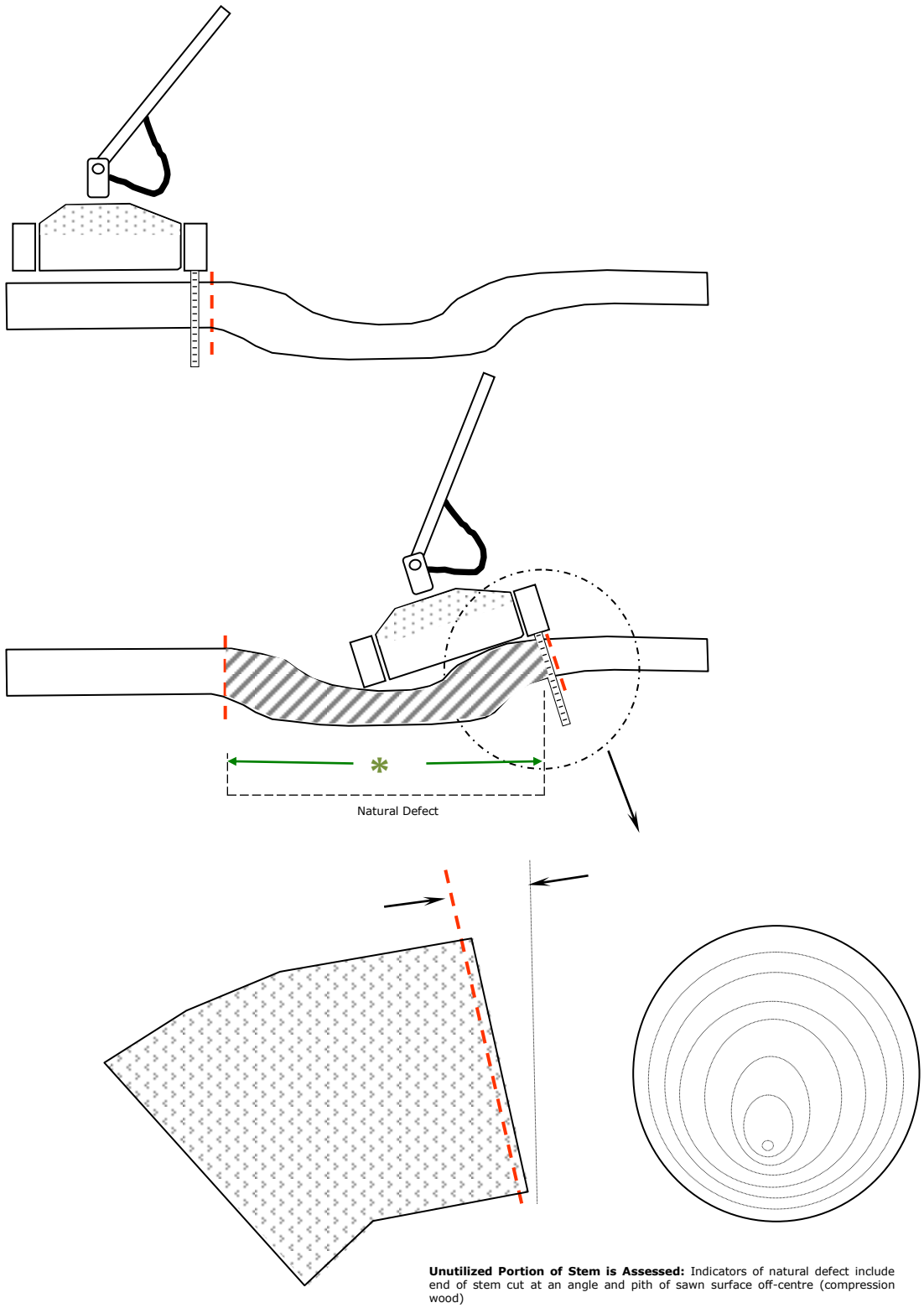


Unutilized Portion of Top is Assessed: CTL processed with a remaining piece less than 2.82 m but with the small end diameter encountered that is more than 10 cm OB and can be attributed to a natural defect - Could be associated with flat-topped and/or heavy branching in conifer

- Efforts will be made to leave the portion of stem removed for natural defects in a manner that can be more easily verified by field inspectors following processing.

- In many cases there will be indicators on the stem removed for natural defect. The processor head will not be able to trim the stem at right angles due to defect. The residual stem will also have compression wood causing the pith of tree to be off-centre of the sawn surface. Both are good indicators that the piece was removed for defect purposes.

Examples of indicators on stem of natural defect:

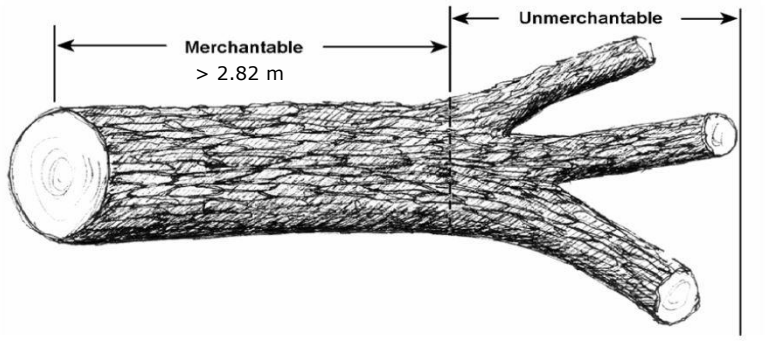


Unutilized Portion of Stem is Assessed: Indicators of natural defect include end of stem cut at an angle and pith of sawn surface off-centre (compression wood)

- Portions of stems will be left where natural defects are so concentrated that the timber in that section will be considered unmerchantable (i.e. heavy branching, burls, forks, severe crook, severe sweep).

    1. Where portion of stems are removed for natural defect and/or heavy branching, they will not contain merchantable sections that are more than 2.82 metres in length.

    2. Portions of stems beyond the point of the natural defect and/or heavy branching that are more than 2.82 metres will be utilized. This could be achieved by improved merchandizing techniques.



- Problems encountered would be communicated while early into the operations

Butting for cull

To resolve these potential issues, it has been agreed that:

***Where the company notes a prevalence of defect for which merchandizing would improve wood quality MNRF will be contacted immediately:

- Want to leave processed 8 to 16-foot cull logs at roadside or in the bush
- want to butt longer than 60 cm pieces to remove cull

***Where the company does not require notification to the MNRF

- Less than 60cm long
- Must be greater than 50% defect (as per the scaling manual)

Module 19

Glossary for Condition on Regular Operations

for the

2021-2031 Nagagami Forest Management Plan

18.0 Definitions

Nests - Primary, Alternate, and Inactive:

- Nests known or suspected to have been occupied within a specific time frame (species-specific) are classified as active (i.e., high likelihood of reuse); all other nests are classified as inactive. When a single active nest occurs within a nesting area, it is classified as the primary nest. When ≥2 active nests occur within a nesting area (i.e., within a circle of a specified radius based on species), the nest with the most recent history of occupancy is the primary nest.

Nests in good repair:

- A nest is considered to be in good repair when there is sufficient nest material present to permit its reuse with minimal reconstruction.

Nest trees with good forks:

- A nest tree is considered to have a good fork when ≥3 large branches form a basket that could support a stick nest.

Occupied nests:

- Occupied nests are those containing eggs or young, or being attended by adults in anticipation of laying eggs. Nests known to have been occupied are those with direct evidence of previous use (e.g., chicks observed in nest). Nests suspected to have been occupied are those with compelling indirect evidence of recent use. For eagles, ospreys, and herons, nests in suitable habitat that are in good repair or contain new material are suspected to have been recently occupied.

Reasonable efforts:

- The term *reasonable effort* implies that a sincere attempt has been made to select the course of action described in the guideline and that any deviation from that source of action has been based on a thoughtful consideration of the consequences of practical and feasible alternatives. Specific examples of what constitutes reasonable efforts are provided in some Modules. More generally, what is considered a reasonable effort should be based on what other reasonable people would have done in a similar situation.

Extraordinary Circumstances:

- In a small number of situations, deviation from direction in this guide may be permitted when strict application of the direction would result in unacceptable socio-economic or environmental consequences and the modified activities are unlikely to have an adverse effect on the objectives of the direction. For example, an occupied hawk nest might be located after some harvesting has been conducted within the AOC. Skidding wood already felled would normally not be permitted during the critical period. However, if there is a high risk that the merchantability of the wood will be compromised by delaying skidding until after the critical breeding period and the risk of disrupting the breeding activity

is considered low, the situation may be considered an extraordinary circumstance and the prescription may allow the skidding activity as subject to appropriate conditions. The extraordinary circumstances identified in individual prescriptions will not be considered exceptions to this guide.

(w) Common Acronyms and Tree Species Codes in Forest Management Planning

Common Acronyms and Tree Species Codes used in Forest Management Planning

Planning terminology

ABIR	Aboriginal Background Information Report
ABS	Air Blast Spray (for herbicide application)
ACOP	Annual Compliance Operating plan
ADM	Assistant Deputy Minister
AEA	Aggregate Extraction Area
AGS	Acceptable Growing Stock
AHA	Available Harvest Area
AHV	Available Harvest Volume
ANSI	Area of Natural and Scientific Interest
AOC	Area of Concern
APL	Archeological Potential layer
AR	Annual Report
ARA	Aggregate Resource Act
ARA	Aquatic Resource Area
ATK	Aboriginal Traditional Knowledge
AWG	Aboriginal Working Group
AWS	Annual Work Schedule
B&S	Barren and Scattered
BMI	Base Model Inventory
CARS	Corrective Acton Requirements (from audits)
CC	Clear Cut
CCSFI	Central Canada Sustainable Forestry Institute
CCSIC	Cent. Can. SFI Implementation Committee
CCP	Caribou Conservation Plan
C&I	Criteria and Indicator
CENFER	Centre for Northern Forest Ecosystem Research
CFA	Canadian Forestry Association
CFSA	Crown Forest Sustainability Act
CID	Current Industrial Demand
CLAAG	Careful Logging Around Advanced Growth
Class EA	*Environmental Assessment Board's Reason for Decision: Class Environmental Assessment by the Ministry of Natural Resources and Forestry for Timber Management on Crown Lands in Ontario (EA-87-02) (also Timber EA)*
CLUAH	Crown Landuse Atlas Harmonization
CLUPA	Crown Landuse Policy Atlas
CMU	Crown Management Unit
CR	Conservation Reserve
CRA	Compliance Reporting Area
CRO	Conditions in Regular Operations
CRR	Crown Round wood Record
CT	Commercial Thinning
DFB	Desired Forest Benefit
DLUG	District Land Use Guideline
DM	District Manager
EA	Environmental Assessment

EA & TC	Environmental Assessment Term and Condition (also T&C)
EAA	Environmental Assessment Act
EBR	Environmental Bill of Rights
EFRI	Enhanced Forest Resource Inventory
EFRT	Evaluate Forest Residual Tool
ESA	Endangered Species Act
FAPs	Forestry Aggregate Pits
FEAR	Five Year Environmental Assessment Report on Forest management
FEC	Forest Ecosystem Classification
FFC	Forestry Future Committee
FFPA	Forest Fire Prevention Act
FFTF	Forest Future Trust Funds
FIM	Forest Information Manual
FIPPA	Freedom of Information & Protection of Privacy Act
FLRA	Final List of Required Alterations
FLS	French Language Services
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FMU	Forest Management Unit (also MU)
FMZ	Fisheries Management Zone
FN	First Nation
FOI	Freedom of Information
FOIP	Forest Operations Information Program
FOIP	Forest Operation Inspection Program
FOP	Forest Operation Prescription
FOSM	Forest Operation and Silvicultural Manual
FRI	Forest Resource Inventory
FRL	Forest Resource License
FRT	Forest renewal Trust
FRTF	Forest Renewal Trust Fund
FSC	Forest Stewardship Council (5 year audit cycle)
FTG	Free to Grow
FU	Forest Unit
FVS	Forest Vegetation Simulator
GIS	Geographic Information System
GLSL	Great Lakes St. Lawrence
HAT	Heritage Assessment Tool
HCV	High Conservation Value
HDUS	Hardwood Uniform Shelterwood (**N**=normal/**Be** =+20% beech content
HPCH	High Potential Cultural Heritage
HSI	Habitat Suitability Index
HSM	Habitat Suitability (Supply) Model
HU	Habitat Unit
HWSEL	Hardwood Selection

HWST	Hardwood Seed Tree
HWUS	Hardwood Uniform Shelterwood
IEA	Individual Environmental Assessment
IFA	Independent Forest Audit
IQR	Inter Quartile range
ISAP	Integrated Science Action Plan
LCC	Local Citizens Committee
LCTS	Land Claim Treaty Section
LDI	Landscape Diversity Index
LEAP	Landscape Ecology Analysis Package
LG	Landscape Guide
LLP	Large Landscape Patches
LPSP	Low Potential Sensitivity Pond
LPSS	Low Potential Sensitivity Stream
LTMD	Long Term Management Direction
LUP	Land Use Permit (issued under Public Lands Act)
MAI	Moose Aerial Inventory
MAFA	Moose Aquatic Feeding Area
MCL	Mixed Conifer Lowland
MEA	Moose Emphasis Area
MECP	Ministry of Environment, Conservation and Parks
MIA	Ministry of Indigenous Affairs
MIST	Modelling Inventory Support Tool
MIRR	Ministry of Indigenous Relations and Reconciliation
MNRF	Ministry of Natural Resources and Forestry
MOA	Memorandum Of Agreement
MSIM	Multi –Species Inventory and Monitoring
MU	Management Unit
N/C	Non Compliance
NCR	Non Conforming Report
NDPEG	Natural Disturbance Pattern Emulation Guide
NELT	Northeast Leadership Team
NER	Northeast Region
NEST	Northeast Science and Technology Unit
NFI	National Forest Inventory
NFRM	Nipissing Forest Resource Management
NHIC	Natural Heritage Information Center
NPP	Net Primary Productivity
NRVIS	Natural Resource Value Information System
OBM	Ontario Base Map
OCM	Online Correspondence Management System
OFI	Opportunity For Improvement (from audits)
OHN	Ontario Hydro Network
OMNRF	Ontario Ministry of Natural Resources and Forestry
ORB	Operational Road Boundary
OPG	Ontario Power Generation
OLL	Ontario Living Legacy
OLT	Ontario Landscape Tool
PB	Prescribed Burn
PCC	Planned Clearcut

PCM	Planned Composite Model
PCI	Planning Composite Inventory
PF	Protection Forest
PFAT	Provincial Forest Analyst Team
PLOOA	Preliminary List of Other Alterations
PLORA	Preliminary List of Required Alterations
PMS	Proposed Management Strategy
PRP	Planned residual patches
PWPMP	Provincial Wildlife Population Monitoring Program
PSP	Permanent Sample Plot
PST	Process Streamlining Test
PT	Planning Team
PWUS	White Pine Uniform Shelterwood
QLP	Qualified Logging Professional
RAC	Regional Advisory Committee
RBT	Remote Based Tourism
RD	Regional Director
RD	Regional Director
RHESSys	Regional Hydroecological Simulation System
REAP	Regeneration Establishment Assessment Program
RMA	Range Management Approach
RMP	Range Management Policy
RoW	Road Right-of-Way
RPAV	Report on Protection of Aboriginal Values
RPF	Registered Professional Forester
RPFO	Report on Past Forest Operation
RSA	Resources Stewardship Agreement
RTVE	Rare, treated, Vulnerable, Endangered
RUMS	Road Use Management Strategy
SAI	SAI Global (forest certification auditing group)
SAP	Supplementary Aerial Photo
SAR	Species at Risk
SEA	Social and Economic Assessment
SI	Silvicultural Intensity
SED	Socio Economic Description
SEIM	Socio Economic Impact Model
SEM	Silvicultural Effectiveness Monitoring
SEV	Statement of Environmental Values
SFI	Sustainable Forestry Initiative (3 year audit cycle)
SFL	Sustainable Forest License (replaces FMA)
SFMM	Strategic Forest Management Model
SFU	Standard Forest Unit
SGRs	Silvicultural Ground Rules
SGS	Societe Generale de Surveillance (Swiss auditing firm)
SIP	Site Preparation
SLUP	Strategic Land Use Plan
SPF	Spruce, Pine, Fir
SQL	Standard (Structured) Query Language
SRNV	Simulated Range of Natural Variation
SSG	Stand and Site Guide

STKG	Stocking
T&C	Term and Condition
TSSA	Technical Standards and Safety Authority (Ontario)
TOR	Terms of Reference

UGS	Unacceptable Growing Stock
VTE	Vulnerable, Threatened and Endangered
WAU	Wildlife Assessment Unit
WMU	Wildlife Management Unit

Tree Species Codes

GY Species Code	Abbreviation	Alternate Abbreviation	Genus	Species	Common Name
45	Ab		*Fraxinus*	*nigra*	Black Ash
46	Aw		*Fraxinus*	*americana*	White Ash
51	Bd		*Tilia*	*americana*	American Basswood
44	Be		*Fagus*	*grandifolia*	American Beech
20	Bf		*Abies*	*balsamea*	Balsam Fir
55	Bn		*Juglans*	*cinerea*	Butternut
38	Bw		*Betula*	*papyrifera*	Paper Birch
37	By	YB	*Betula*	*alleghaniensis*	Yellow Birch
58	Cb		*Prunus*	*serotina*	Black Cherry
22	Cw	Ce	*Thuja*	*occidentalis*	Eastern White Cedar
50	Ew		*Ulmus*	*americana*	American Elm
19	He		*Tsuga*	*canadensis*	Eastern Hemlock
56	Iw		*Ostrya*	*virginiana*	Ironwood
25	La		*Larix*	*laricina*	American Larch
30	Mh		*Acer*	*saccharum*	Sugar Maple
32	Mr	Ms	*Acer*	*rubrum*	Red Maple
33	Ms		*Acer*	*saccharinum*	Silver Maple
42	Ob		*Quercus*	*macrocarpa*	Bur Oak
41	Or	RO	*Quercus*	*rubra*	Northern Red Oak
40	Ow		*Quercus*	*alba*	White Oak
73	Pb	Po	*Populus*	*balsamifera*	Balsam Poplar
3	Pj		*Pinus*	*banksiana*	Jack Pine
70	Pl	Po	*Populus*	*grandidentata*	Large-tooth Aspen
2	Pr		*Pinus*	*resinosa*	Red Pine
74	Pt	Po	*Populus*	*tremuloides*	Trembling Aspen
1	Pw		*Pinus*	*strobus*	Eastern White Pine
13	Sb		*Picea*	*mariana*	Black Spruce
14	Sr		*Picea*	*rubens*	Red Spruce
12	Sw		*Picea*	*glauca*	White Spruce

(x) Implementation Bulletin for Transferring Forestry Road Responsibility

Ministry of Natural Resources and Forestry

Implementation Bulletin

Transferring Forestry Road Responsibility

Ontario

Ministry of Natural Resources and Forestry

Regional Operations Division, Northeast Region

Draft Date: March 6, 2019

ontario.ca/keyword

Ontario

This document contains ideas and text directly derived from the Forest Roads and Water Crossings Initiative Task Team Report and the Draft Crown Land Roads Manual which are the informal basis of ad hoc road responsibility transfers to date. This writing group acknowledges the great work done by those authors and committees, and this protocol confirms that their approach is still relevant today.

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Forestry Roads – Preface

Purpose

Roads are required in a managed forest to extract natural resources; to conduct silviculture; to measure and monitor habitat; for camping and hunting and fishing and hiking; and resource-based tourism. The forest management planning manual directs the construction and maintenance of roads. Forestry roads are classified into three categories:

1. Primary Road: provide principle access to the management unit
2. Branch Road: branches off primary roads or other branch roads and provides access to areas of operations
3. Operational Road: provides short term access to and within harvest, renewal and tending areas

This implementation bulletin builds on the direction of the 2017 FMPM. This document provides guidance to Sustainable Forest Licensee (SFL) and Ministry of Natural Resources and Forestry (MNRF) staff on the process to transfer the responsibility of roads and road networks, with associated infrastructure, from the SFL to the MNRF or a third party (e.g., cottage association).

Scope

This document pertains to forest access roads that are reasonably capable of providing access for licenced highway vehicles (*Public Lands Act*, section 48); are under the jurisdiction of the MNRF (i.e. not municipal roads or highways); and are the responsibility of the SFL, as documented in an approved Forest Management Plan (FMP).

Where a road or road network is no longer required for forest management purposes, the SFL has the option to transfer road responsibility to the Crown. This document describes the process to transfer forest access roads.

Summary

Properly documenting information and decision points is important when transferring infrastructure from one party to another. The 3-page Transfer Plan Template (Appendix

l) was created to facilitate documenting the decisions and progress while transferring a forest access road responsibility from the Sustainable Forest Licensee to the Ministry of Natural Resources and Forestry. This implementation bulletin provides details on how to transfer road responsibility with direction on timing and how to fill in the template. In general:

1) SFL includes plan to transfer road responsibility in FMP
2) MNRF includes future road use management intent in FMP
3) SFL initiates responsibility transfer process by submitting Transfer Plan (with top part filled in and map included) to MNRF via Forest Information Portal (or equivalent) requesting a joint site visit
4) SFL and MNRF conduct a joint site visit: SFL fills in Section 1 of the Transfer Plan with road and crossing conditions noting any problem areas (attach digital coverage); MNRF conducts condition inspection as per their established bridge, roads and crossings inspection methodologies for any roads not being decommissioned
5) MNRF confirms future use management intent (as identified in Table FMP-18) in Section 2.1 of the Transfer Plan
6) MNRF identifies the road bed, crossings and access control condition requirements prior to accepting road responsibility (or transfer to Third Party) in Section 2.2 of the Transfer Plan
    - Note that all bridges being transferred (that are not being decommissioned) will require the SFL to provide a bridge report stamped by an engineer confirming it is in good condition
7) SFL appends Transfer Plan (filled in up to and including Section 2.2) to the AWS
8) MNRF confirms the work to be done by SFL (to fulfill transfer requirements) is properly identified in AWS (Section 3 of Transfer Plan)
9) SFL conducts work during AWS to satisfy requirements prior to road responsibility transfer and submits description within their FOIP report(s) (include FOIP submission identifier in Section 4 of Transfer Plan)
10) MNRF determines if final transfer inspection is required and notifies the SFL (document in Section 5 of Transfer Plan)
11) SFL submits amendment to MNRF for approval to transfer road responsibility (including completed Transfer Plan)
12) MNRF approval of amendment signifies responsibility has been transferred.

Section 1: Process

1.1: Roads and Road Networks in a Forest Management Plan

Roads and road networks used for forest management purposes are under the jurisdiction and control of the MNRF and subject to the *Crown Forest Sustainability Act* (CFSA) when they are included in a Forest Management Plan (FMP). The Forest Management Planning Manual (Table FMP-18) and the Forest Information Manual require that existing roads and water crossings, identified in the roads and water crossings inventory, have responsibility assigned to them (i.e. SFL or MNRF or Other). The responsibility attribute indicates the custodian responsible for the maintenance and monitoring of road and water crossing conditions; however, the assignment of responsibility in a FMP does not convey ownership of the road or road right-of-way. Responsibility for road related infrastructure such as culverts, bridges, signage, railway crossings, etc. is normally assigned to the custodian responsible for the road. However, in certain instances this infrastructure could remain the responsibility of the agent who installed it. The assignment of responsibility depends on a multitude of factors and is informed by the 2003 Forest Roads and Water Crossings Initiative Task Team Report (FRWCI). Road responsibility is documented in the current FMP. Where the information is absent in the FMP, an amendment process must be completed to include the road responsibility. A road used for forest management purposes in a previous FMP cannot simply be left out of the FMP between plans and default to MNRF responsibility without their explicit and documented acceptance.

The direction, management objectives and land use intent for the area in which the road is being transferred, as outlined in the Crown Land Use Policy Atlas, will be considered when confirming the required roadbed and crossing(s) conditions prior to transfer.

Eligibility

Roads and road networks that are the Sustainable Forest Licensee's (SFL) responsibility (as described in Part A Section 1.1.8.10 of the *Forest Management Planning Manual*) may be transferred during the term of the Forest Management Plan. This includes private forest roads, as defined in s.48 of the *Public Lands Act, R.S.O 1990*, c.P.43 (PLA), for which the SFL has occupational authority. Roads under the jurisdiction and control of MNRF are those roads that fall within the definition of 'road' under s.48 of the PLA. Neither MNRF nor the SFL have jurisdiction over, or administration and control of, municipal highways as described under the *Municipal Act, 2001, S.O 2001,* c.25 or highways as

described under the *Public Transportation and Highway Improvement Act, R.S.O 1990*, c.P.50.

All roads that are being used for forest management purposes will be contained in the forest management plan and while they are being used for forest management purposes should not be transferred to MNRF. The responsibility of the SFL to undertake specific activities or for specific infrastructure will be documented in the plan. In instances of shared responsibility, please consult Appendix V.

Roads should be transferred in road networks (including crossings and other infrastructure) not road segments. As such the remainder of this document will refer to road networks, though there may be justification for transferring a single road using this protocol.

Road networks used for forest management purposes in a previous FMP are retained by the SFL into the next FMP unless there is explicit and documented acceptance from MNRF of a transfer in responsibility.

For road networks to be eligible for transfer, the SFL must confirm they are no longer required to support forestry operations or obligations (e.g. silviculture, biodiversity, aggregate, business-to-business arrangements, harvest blocks) prior to advising the MNRF they intend to transfer the road responsibility. However, forest access roads that will be required for forestry in the foreseeable future, but whose primary users are the public, e.g. access to selection cutting in Southern Ontario, may be eligible for transfer at the discretion of the District Manager. Where the intent to transfer was not included in the FMP (i.e. clearly identified in Table FMP-18) public consultation and a FMP amendment will be required.

The MNRF will consider regulatory, operational, resource management, social and economic obligations and applicable guides and policies when determining the future road use management intent.

The District Manager can limit the number and/or the total length of road networks that are transferred within a specific year.

Consultation

Consultation will take place with the public, stakeholders, and Indigenous communities prior to MNRF making a final decision on the future road use management intent. Ideally this consultation will occur simultaneously with the preparation of a Forest Management Plan. Reasonable efforts will be made to identify those persons and Indigenous

communities who may be directly affected by any change in road use. Consultation will include direct consultation with known users and Indigenous communities through the stages of FMP preparation (e.g., information centres for proposed operations and draft plan review).

Standards

The following must be in place during the preparation of a FMP, and upon FMP approval:

- The SFL's intent to transfer the road network(s) must be identified in Table FMP-18 and the FMP Roads Supplementary Documentation (Supp. Doc.), including:
    - expected operating year for the transfer to occur
    - details on monitoring and compliance
    - clear definitions on the environmental and safety requirements
    - access control measures (where applicable)
- A schedule of monitoring activities that is to occur during the 10-year period of the FMP in Table FMP-18.
- MNRF's management use intent [per District Road Use Management Strategy (RUMS)] in FMP-18. The default will be to decommission the road network.
- A FMP roads responsibility map identifying roads to be decommissioned or no longer maintained
- A name or identifier that matches the corresponding geographic data (including length) for all roads submitted as part of the FMP documentation.
- The following statement in the FMP text: "A Transfer Plan will be created for each road network being transferred to the MNRF."; see Appendix I for Transfer Plan template.
- The following statement in the FMP text: "All road networks transferred to the MNRF will be in a decommissioned state as defined by the decommissioning intent in the Roads Supp. Doc., unless otherwise defined in Table FMP-18 and the Road Use Management Strategy."
- An understanding that any road responsibility being transferred to a third party will first go to MNRF so appropriate agreements [e.g. a Memorandum of Understanding (MoU)] can subsequently be issued with a third party under the *Public Lands Act*.

Guidelines

- Prior to determining the future use management intent, MNRF and SFL holder will go through public notification and consultation. The notification and consultation will in part (and if applicable) seek out any alternate user groups and potential entity that could take on responsibility of road networks where suitable. The alternative user group should immediately be able to enter into an MoU with MNRF to be responsible for the maintenance of the roads and associated infrastructure.
- Best available information and a risk assessment framework will be used where necessary to prioritize road network closures. Please refer to the MNRF's Risk Management Framework for process and templates.

Best Management Practices

There is an opportunity to use operational management zones to set decommissioning targets (e.g. zone 1 = 100% operational roads & 10% of branch roads decommissioned, zone 2 = 80% of operational roads decommissioned) to satisfy plan objectives.

- Use Operational Zones to portray road decommissioning plans and responsibility transfer intent during the forest management planning process.
- Include rationale for selection of road closures (e.g. risk to public safety, ecologically-sensitive area etc.).
- Highlight MNRF's use management intent on the roads maps shown to the public during the forest management planning process.

Additional Considerations

- Information should be provided as early in the planning process as possible to provide opportunity for comments on the potential transfer of a road network(s) and allow for a third party to get organized to take responsibility of a transferred road where desired.
- Remaining life expectancy of the structure(s) and road build standards, i.e. operational vs. branch.
- A change in responsibility results in a change in liability, therefore the transfer of responsibility must be done in a fair and equitable manner. It is unreasonable to expect a party to unwillingly or unknowingly accept excessive liabilities created by another party. Accordingly, it is necessary to have adequate historic and

current information for the roads and infrastructure (i.e. crossings, signs, etc.) to be transferred available.

1.2: Transfer Initiation

To initiate the transfer of road responsibility, the SFL submits a Transfer Plan (completing the information in the Heading of the Transfer Template and attaching a map) that identifies the road network, management unit, FMP period, current date, proposed transfer date, and location (map) with a request for a joint site visit. This information will be exchanged via an approved information exchange process (i.e. Forest Information Portal or equivalent). Ideally this information and request will be submitted in the AWS year prior to conducting any work that might be necessary. It is anticipated that the entire transfer process from notification to amendment approval will take more than a year to complete; the amount of time required will depend on the complexity and amount of work required for that road network (including infrastructure).

Standards

Transfer Plan Heading and Sections 1 & 2

- SFL submits Transfer Plan (with Heading completed and map included) via Forest Information Portal (or equivalent)
- MNRF reviews Transfer Plan
- Joint SFL-MNRF inspection occurs
- MNRF conducts road network inspection as per their most recent Roads and Crossings Condition Inspection Procedure (if not being decommissioned)
- MNRF confirms future management use intent in FMP; FMP amendment required if future management use intent will be different from FMP
- MNRF identifies conditions of road and infrastructure that are required prior to accepting road responsibility or transferring to a third party prior to the next Annual Work Schedule (AWS) production

Site Visit to Confirm Road Network Condition

- Upon transfer initiation, plan to conduct a joint SFL-MNRF inspection to ascertain general road and crossings conditions to populate section 1 of the Transfer Plan template (Appendix I).

- Joint inspection conditions of the road infrastructure will follow the inspection processes laid out in the Crown Land Bridge Management Guideline (MNR 2008) and the Road and Crossings Condition Inspection Manual (MNRF 2018) for other water crossings. The Field Guide for Inspecting Bridges on Forest Roads in Ontario may be used as a guide (FP Innovations, 2011).

- Where a joint inspection is not possible MNRF may request information in the form of photos and/or videos and/or text to confirm road and crossings conditions. The SFL will report any accessibility or environmental problems with the road network and identify any problem crossings (#/location) to the MNRF management forester using Section 1 of the Transfer Plan template and include bridge inspection reports/pictures as described below. The MNRF district forester will forward all the bridge inspection information to the Regional Engineering Unit for review. A digital point-coverage for problem crossings or locations is required.
    - MNRF will conduct the condition inspections as per the bridge, roads and crossings inspection methodologies above.

Special Consideration for Bridges

- For each individual bridge that is to remain open for public use (i.e. not being decommissioned), the party who currently owns the bridge and is proposing to transfer the asset (SFL) is responsible for providing a complete inspection report (with pictures) to MNRF. This report must be stamped by a professional engineer licensed to work in Ontario and describe the condition of each component, identify all deficiencies, and assign a condition rating to the bridge, e.g. use the most current Ministry of Transportation (MTO) Ontario Structure Inspection Manual (2008). This report must be shared with the party receiving the asset (MNRF) for review and approval.
    - All bridge components found to be in poor condition or worse must be repaired to be in good condition before the bridge responsibilities can be transferred.
    - On roads to remain open to public use, all bridges are expected to meet the Canadian Highway Bridge Design Code, in consideration of the MTO's Guidelines for the Design of Bridges on Low Volume Roads exceptions and the MNRF Crown Land Bridge Management Guideline (CLBMG) exceptions and have a full truck load (CL-625-ONT) carrying capacity before being transferred.

Confirmation of Management Use Intent

- MNRF confirms consistency with Crown Land Use Policy Atlas.
- MNRF confirms future management use intent is the same as the FMP
    - If yes, proceed to meeting requirements on the road and crossings conditions, and any required signage, prior to transfer.
        - Resources Management Supervisor notifies Regional Engineering Unit (REU) of any bridges to be transferred.
        - If any work is required on the primary components of a bridge, the usual approval process described in the CLBMG will be followed.
    - If no, address the management use intent before proceeding with the transfer.
        - an amendment to the FMP (and possibly Annual Work Schedule revision) will be required to provide opportunity for public and Indigenous consultation to the extent determined by the District Manager. This amendment can be initiated by MNRF, or can be incorporated as part of the amendment to finalize transfer of responsibility, at the discretion of the District Manager.

Best Management Practices

- Each organization shall ensure they invite the appropriate personnel for the site visit and review (e.g. Integrated Resource Management Technical Specialist, biologist, engineer).
- Schedule the joint site visit in the spring/early summer (i.e. after high freshet flows). An early inspection enables an opportunity for MNRF to complete a review during the summer field season.

1.3: Achieving Conditions for Transfer

Standards

Transfer Plan Sections 3 to 5

- SFL includes roads and crossings decommissioning activities in AWS (e.g. crossings to be removed included in Table AWS-2)
- MNRF must ensure AWS includes conditions/requirements identified in transfer plan (i.e. crossings and roads in appropriate tables, text and digital coverages).
- SFL submits a Forest Operations Information Program (FOIP) report (Access category) that will describe the work completed and whether the work is in compliance with AWS.
- SFL includes FOIP submission identifier in Transfer Plan.
- MNRF determines whether or not the conditions for transfer have been met. If not, the SFL will be advised of the inconsistencies and additional work is required.
- MNRF determines if a final inspection is required.

Once satisfied, MNRF advises SFL that all conditions have been met and that the transfer of the road is complete. An amendment to the FMP will be required to indicate the transfer of responsibility has occurred.

- No roads or water crossings shall be transferred until the infrastructure is inspected and identified deficiencies (including safety and environmental hazards) are mitigated.
- Road and water crossing infrastructure must be transferred in good condition as per the MNRF's most recent Roads and Crossings Condition Inspection Procedure.
- Sub-standard water crossings that were initially constructed and failed to meet the standards-of-the-day and/or were re-constructed and failed to meet the standards-of-the-day should not be transferred until the party responsible for its current status restores, modifies or removes the crossings so as to be consistent with the post-forest operations strategy and prescriptions as well as the Road Use Management Strategy.

- SFL is responsible for erecting appropriate signs and barriers as identified following inspection and prior to road responsibility transfer. Signs will be erected consistent with the Crown Land Bridge Management Guidelines (2008) and the MNRF Roads and Crossings Sign Manual.
- MNRF determines whether or not the conditions for transfer have been met.

Guidelines

- Compliance monitoring will ensure commitments are met as per the FMP and AWS. An audit of industry Forest Operations Information Program (FOIP) reports may take place as part of a risk-based district compliance program.
- Ensure requirements for transfer are included in the AWS in which work will take place; include transfer plan as appendix to AWS.

Best Management Practices

- Communicate clearly, and often.
- Roads and road networks will be decommissioned at the same time as their associated water crossings.
- MNRF will determine whether or not the conditions for transfer have been met after receiving the report (e.g. FOIP) that the work is complete.
- Maximize effectiveness of signage:
    - Understand who might be using the Crown land and for what purpose. Ontarians rely on Crown land to meet their recreational needs. Local or regional demographics may influence the degree of acceptability of restrictions on use or access.
    - Provide rationale. Restrictions are more acceptable when they are undertaken for ecological rather than social or economic reasons.
    - If possible, re-direct to other areas where use/activity is permitted. Partitioning of accessible vs. inaccessible, permitted uses vs. prohibited uses over time and space can alleviate conflicts.
    - Provide opportunities for users to voice their concerns. Conflicts can be overcome or mitigated if the decision-making process is transparent and fair.
    - Appeal to moral behaviour. Fear-based messages have mixed results (e.g. communicating fines for non-compliance). Accept that signs will not eliminate non-compliant behaviour.

1.4: Transfer Approval

Amendment Process

The FMP amendment process will document the road responsibility transfer. Once the SFL has completed the work required, to the satisfaction of the MNRF, they will be provided with direction from MNRF to submit an amendment request to:

1) remove the road from table FMP-18 (or change responsibility identified);

2) add the Transfer Plan to the FMP Roads Supp. Doc. for that road network; and

3) indicate to whom they are transferring road responsibility.

Transfer Plan Section 6

- SFL submits FMP amendment to MNRF to transfer road responsibility and update FMP documentation.
- If appropriate, SFL submits AWS revision to MNRF to reflect changes as per road responsibility transfer amendment.
- MNRF conducts appropriate consultation and reviews amendment/revision.
- Transfer of road responsibility is approved through an amendment and road becomes jurisdiction of the Public Lands Act and included in district road use strategies (unless decommissioned)
- MNRF district updates Land Information Ontario and notifies the Regional Resource Information Analysis Unit.
- SFL records information in appropriate Annual Report.

Standards

Amendment Submission and Review

- SFL submits FMP amendment to MNRF to transfer road responsibility and update FMP documentation. Changes will occur to Table FMP-18, associated information products, RUMS, and Supp. Doc. to reflect the changes accordingly.
- If appropriate, SFL submits AWS revision to MNRF to reflect changes as per road responsibility transfer amendment.
- MNRF conducts appropriate consultation and processes amendment/revision.

Amendment Approval

- Approval of amendment is official acceptance of road responsibility transfer from SFL to MNRF responsibility.
- Upon amendment/revision approval, MNRF district updates Land Information Ontario and notifies the Regional Resource Information Analysis Unit.
- SFL will update their road maintenance agreement to reflect the changes (on an annual basis).
- Road becomes jurisdiction of the Public Lands Act.
- MNRF updates their District Road Use Management Strategy.

Section 2: Supporting Documentation

Criteria for the removal of water crossings of abandoned roads, October 1997

Crown Forest Sustainability Act, 1994

Crown Land Bridge Management Guidelines, 2008

Endangered Species Act, 2007

Fisheries Act, 1985

Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales. 2010, Toronto: Queen's Printer for Ontario. 211 pp.

Forest Management Planning Manual, 2017

Forest Roads and Water Crossings Initiative, Task Team Report, October 2003 OMNR.

Ministry of Natural Resources and Forestry/Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings, 2017

MNRF Risk Management Framework

Provincial Parks and Conservation Reserves Act, 2006

Public Lands Act, 1990

Roads and Crossings Condition Inspection Procedure Instruction Manual 2018

Signage on Public Lands- Best Practices for Maximizing Effectiveness, A. Wheeldon, MNRF, 2018

Appendix I

Transfer Plan Template

{See attached Excel file}

Ontario

Appendix II

Flow Chart

Determining Future Use

Management Intent

SFL has responsibility for road network in FMP and wants to transfer road network responsibility

SFL confirms no other silviculture obligations or aggregate requirements on road network to be transferred

SFL submits Transfer Plan (via FI Portal) advising MNRF of their intent to transfer road network

SFL and MNRF conduct joint site visit

MNRF District Manager confirms the future use management intent of road network (FMP-18)

MNRF identifies conditions of road and infrastructure that are required prior to accepting road network responsibility

No Longer Maintain (Road Open)

Maintain (Road Open)

Transfer Responsibility to Third Party

Decommission

Ontario

Flow Chart

No longer maintain

No Longer Maintain

SFL includes roads and crossings decommissioning activities in AWS.

All water crossings scheduled for removal require appropriate approval/notification forms

(Table AWS-2)

SFL removes crossings & bridges (does not render road impassable), installs fords or other measures as agreed to resulting from site visit & DM's decision

SFL submits FOIP report that will describe work completed and whether the work is in compliance with AWS.

MNRF confirms whether or not the work is acceptable & road network responsibility can be transferred to MNRF.

Once work is completed to satisfaction of MNRF they accept responsibility of road network (including all crossings).

SFL reports change in road network & associated crossings & bridges responsibility and status (i.e. very good, good, removed, etc.) in Annual Report upon completion

SFL submits amendment to update road network & associated crossings & bridges responsibility in FMP

Ontario

MNRF Maintain

Flow Chart

MNRF maintain

SFL (bridge owner) provides inspection report per Canadian Highway Bridge Design Code (CHBDC) with quality pics to MNRF engineer, providing enough evidence that bridge is in good condition. MNRF surveys road bed & crossings to ensure they are in good condition.

MNRF District Manager confirms target users; recreational vs commercial. Except where effective physical access control measures are in place, all bridges must carry full truck loads, as per the CHBDC (CL-625-ONT)

MNRF engineer finds bridge condition is questionable (i.e. not evident it is in good condition based on pics)

SFL brings bridge to desired standards

MNRF engineer confirms the inspection report (stamped by engineer) provided by SFL is satisfactory.

MNRF engineer confirms bridge is acceptable to be transferred to MNRF responsibility. A final inspection by MNRF (ideally an engineering rep.) is required for all work on primary components on a bridge

MNRF accepts responsibility of road/network (incl. all crossings)

SFL reports change in road/network & associated crossings & bridges status (i.e. removed) in Annual Report upon completion.

SFL submits amendment to remove road/network & associated crossings & bridges from FMP

Upon amendment approval MNRF data tech provides update to LIO.

MNRF amends their RUS to incl. roads that are now transferred to be their responsibility.

Ontario

Flow Chart

MNRF transfer of responsibility to Third Party

MNRF Transfer of responsibility to Third Party

MNRF and the Third party must do a joint inspection to survey/inspect road bed & crossings to ensure they are in good condition.

For any bridges, bridge owner/responsible entity (SFL) provides inspection report (as describe in Section 1.2 of this bulletin) with quality pics to MNRF District forester and engineer.

MNRF District Manager confirms target users; recreational vs commercial.

Except where effective physical access control measures are in place, all bridges must carry full truck loads, as per the Canadian Highway Bridge Design Code (CL-625-ONT)

For any bridges, MNRF engineer confirms the SFL inspection report is satisfactory. MNRF may procure the services to have a full structural evaluation and inspection by a professional engineer to help determine the bridge condition and associated liabilities

MNRF engineer confirms bridge(s) is/are acceptable to be transferred to Third party

Third party accepts road/network as-is or requests changes to SFL directly

Third party accepts responsibility of road/network (incl. all crossings) under the Public Lands Act

SFL reports change in road/network & associated crossings & bridges responsibility and status (i.e. very good, good, removed, etc.) in Annual Report upon completion

SFL submits amendment to remove road/network & associated crossings & bridges from FMP

Ontario

Decommission

Flow Chart

Decommission

All water crossings scheduled for removal require appropriate approval/notification forms (Table AWS-2)

SFL includes road/network & crossings & bridges to be removed are identified in the AWS

SFL & MNRF conduct joint site visit to confirm decommissioning plan

SFL decommissions road/network. Roadway treatment applied, removes crossings & bridges, adds berms (barriers), and puts up signs (PLA),

MNRF confirms decommissioning follows decommissioning plan and is acceptable. MNRF assesses road & crossings & bridges and produces Leasehold Asset Condition Report

MNRF accepts responsibility of road/network (including all crossings)

SFL reports change in road/network & associated crossings & bridges responsibility and status (i.e. very good, good, removed, etc.) in Annual Report upon completion

SFL submits amendment to remove road/network & associated crossings & bridges from FMP

Ontario

Appendix III

Definitions

Best Management Practice

Suggested practice or strategy to help implement the overall purpose of the standards and guidelines

Bridge

A road structure with a span greater than three metres that is intended to convey vehicles from one side of a watercourse or other physical barrier to the other. In the case of multiple-span structures, the length of the longest span shall be used in determining whether the structure is a bridge for the purpose of this policy document. A culvert or any type of structure meeting this definition is a bridge.[i]

Permanent Bridge
A bridge that is expected to remain in place for more than seven years.[ii]

Portable Bridge
A modular bridge superstructure that has been designed to be used at more than one location during is usable life and that can be moved readily from one location to another.

Temporary Bridge
A bridge that is expected to remain in place for seven years or less. [ii]

Business to business

Business to business is a form of transaction between businesses, such as one involving an SFL company and an Overlapping Licensee company. Business to business refers to a transaction that is conducted between businesses, rather than between a company and an individual or between a company and government.

Decommission

For roads or road networks identified for transfer to MNRF where MNRF's management intent is to not maintain the road for public use, the physical work that will be undertaken to render the road impassable to vehicular traffic, enhance public safety and reduce potential environmental damage (e.g., removal of a water crossing(s), site preparation and regeneration)[ii].

Guideline

Mandatory direction that requires professional judgment for it to be applied appropriately at the local level.

Hazard

Memorandum of Understanding (MOU)

An agreement between MNRF and the owner of the water crossing(s) (including bridges) setting out the responsibilities and obligations of the owner with respect to water crossing construction, inspection, maintenance, repair and, in some cases, removal.

MNRF maintain

Should a road be transferred to MNRF and the intent is to maintain it, the road will be maintained according to the District Road Use Management Strategy. If no strategy exists, level of maintenance will be at the discretion of the District Manager.

MNRF transfer of responsibility to a third party

Should a road be transferred to a third party and the intent is to maintain it, the road will be maintained according to the road use strategy in the FMP. Any variance to the maintenance will be permitted solely at the discretion of the District Manager.

No longer maintain

Culverts and bridges will be removed unless otherwise directed by the District Manager. No maintenance would occur on the road bed or corridor, but the road might remain passible (e.g. fords). Signs will be posted at the beginning of the road to indicate that there is no maintenance on the road and / or road network.

Road (or change to "Forest Access Road"?)

A road that falls within the *Public Lands Act*, 1990 (PLA), Section 48 definition of a road and is reasonably capable of providing access for licensed highway vehicles.

Primary Road:
A road that provides principal access for the management unit, and is constructed, maintained and used as part of the main road system on the management unit. Primary roads are normally permanent roads.

Branch Road:
A road, other than a primary road, that branches off an existing or new primary or branch road, providing access to, through or between areas of operations on a management unit.

Operational Road:
A road within an operational road boundary, other than a primary or branch road, that provides short-term access for harvest, renewal and tending operations. Operational roads are normally not maintained after they are no longer required for forest management purposes, and are often site prepared and regenerated unless otherwise directed by the District Manager.

Road Network

A system of new or existing roads that provide access to a distinct geographic area (Adapted FRWCI).

Road Responsibility

The party responsible for a road is responsible for meeting all of the legal obligations associated with the planning, construction, maintenance and decommissioning of the road and monitoring the road for public and environmental hazards and undertaking remedial work where a hazard has been identified.

The assignment of responsibility for a road does not convey any ownership in the road or in the Crown land occupied by the road or its right of way. Any culverts, bridges, signage and other structures that are stated in the FMP to be the property of the SFL holder, remain the property of the SFL holder during the term of the FMP. Any structures that remain or that are required to remain after the

transfer of the road to MNR, become the property of the Crown, in accordance with Section 24 of the PLA.

The party responsible for the road will have the ongoing obligation to undertake appropriate monitoring and necessary maintenance to achieve road use strategies and ensure safe conditions.

Road Use Management Strategy (RUMS)

A document that provides direction for the monitoring, maintenance and decommissioning of Crown roads, within an administrative district of the MNRF.

Standard

Mandatory direction

Transfer Plan

Document (see template) submitted by the entity responsible for the road (SFL) to MNRF that outlines the timelines, proposed work with notification arrangements, and monitoring schedule for a road/network transfer.

Appendix IV

Considerations for District Managers while deliberating MNRF's intent (FMP-18)

MNRF will consider regulatory, operational, resource management, social and economic obligations and applicable guides and policies when determining the future road use management intent.

Use management strategies of roads/road networks will consider:

> i) The strategic direction associated with other resource plans, policies and directives (e.g., Crown Land Use Policy Atlas);
> ii) The strategic direction being addressed through the use of LLPs [large landscape patches] resulting from the application of the Landscape Guide;
> iii) The management objectives, and emphasis for specific areas (e.g., direction provided by the Crown Land Use Policy Atlas; LLPs as described in Section 3.3. of [the] guide; and
> iv) The potential impact (including benefits) to other natural resource features; land uses, and values (e.g. lakes and streams, cottage sites, boat caches).[iii]

Considerations:

1. Is road network required? For whom and for which purpose(s)?
2. Look at possibilities for third party agreements (unless decommissioning)
3. Indigenous (First Nations and Métis)
4. MNRF infrastructure / park or conservation reserve access
5. ESA / natural heritage values
6. Tourism and other commercial ventures (baitfish, snowmobile clubs, bear management areas and trappers).
7. Public use (recreation, cottage access) and access for other industrial users (Bell, Hydro One, Mining, CP, ONR)

Consider the following: traffic, importance (related to regulated and non-regulated obligations), and reoccurring issues.

Consider who utilizes the road and for which purposes – Indigenous community use, hydro power generation and/or delivery, snowmobile club, authorized trail users,

stocking lakes with fish, dams, boat launches, cottages, trapper cabins, tourism outpost and portage lakes, MOUs, Land Use Permits, recreationists, communication towers, etc. These considerations are similar to that of an Environmental Assessment screening process.

Consider other values such as caribou, Moose Emphasis Areas, provincially-tracked/rare species including those listed under the Endangered Species Act, significant wildlife habitat, Areas of Concern, park or conservation reserve access, Crown infrastructure.

The District biologist has the ability to assess whether a grown over road will be cleared to remove infrastructure, i.e. assess whether more environmental damage will occur through the re-clearing of the road than is warranted to remove the water crossing(s).

Appendix V

Criteria to define situations that qualify for shared responsibility arrangement:

Road responsibility can be shared between two or more parties. This may include forest licensees, the Crown and/or third parties who have a specific and continuing interest in a certain road or road network. These situations must be evaluated on a case by case basis and should include consideration of:

- Reasons for access
- Frequency and ratio of use
- Standards required by users
- Relationship between level of contribution and degree of influence and the probability that obligations can be equitably financed on a continuing basis

Most importantly, the parties must be able to formalize the relationship and clearly assign responsibility by a legally binding mechanism. Where a formal partnership cannot be developed, responsibility will default to the Crown and the infrastructure will be managed

Under what circumstances and to what extent MNRF is prepared to assume partial shared responsibility:

a) Is the road network necessary to access MNRF infrastructure (e.g. dam), research areas, provincial park or conservation reserve?

If Yes, road network can be considered for shared responsibility with MNRF.

If NO go to b).

b) Is the public the primary user of the road network? Where primary means they cause the most wear and tear on the roadbed and infrastructure.

If Yes, road network can be considered for shared responsibility with MNRF.

If No, go to c).

c) Does the road network contribute to social or non-forestry economic benefits?

If Yes, are they significant benefits? Then consider sharing responsibility.

If No, objectives don't likely align with acceptable reasons for shared responsibility.

Appendix VI (MNRF Only)

Mini process map:

[i] Crown Land Bridge Management Guidelines
[ii] Forest Management Planning Manual
[iii] Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales

Ontario

Transfer Plan for [insert road network name] in the [insert Forest name]

Submitted by: _____ Company Name: _____

Date: _____ Proposed Transfer Date: _____

FMP Period: _____

Provide map - show entire network being transferred, or note portions / roads being transferred (incl. bridges and crossings)

1) Pre-transfer inspection results (provide to MNRF the year prior to AWS in which transfer work is planned to occur)

Where possible plan to do a joint inspection to acertain general road and crossings conditions (MNRF staff will use the inspection procedure to conduct electronic field inspection for all non-decommissioned roads). In rare exceptions where a joint inspection is not possible/desired by MNRF, please note any problem areas with accessibility/drivability with water crossing identification (#/location) and provide to MNRF Area Forester. A digital point coverage for problem crossings is preferable.

Notes:

2) MNRF input (to be completed by MNRF & provided to SFL during the AWS year of Section 1 submission)

2.1 MNRF confirms the future management use intent (as identified in FMP-18 & Roads Supp. Doc.) and purpose

Future use intent (in FMP-18)	Confirmed intent	Rationale	Road Use Purpose

Date confirmed: _____ By: _____

Notes:

*Where future road use management is different than the FMP an amendment will be required.

2.2 MNRF requirements prior to accepting road responsibility or transferring to 3rd party (check all that apply).

Roadbed

General Conditions

- ☐ eliminate High Safety Hazards
- ☐ eliminate Low Safety Hazards
- ☐ identify Potential Safety Hazards
- ☐ install Engineered Ford(s) (see Notes)
- ☐ impassable to licensed highway vehicle
- ☐ impassable to ATVs
- ☐ other (specify)

Access Control

- ☐ none
- ☐ sign at entry
- ☐ sign at exit
- ☐ sign at all intersections
- ☐ effective year round physical barrier
- ☐ effective seasonal (summer) physical barrier
- ☐ berm
- ☐ slash piling
- ☐ ditching
- ☐ ripping up the road
- ☐ winter road
- ☐ red or flashing amber light
- ☐ specific wording for signs (specify)

Culverts

General Conditions

- ☐ remove all culverts and rehabilitate all crossings
- ☐ overall Rank > 5000* for each culvert (i.e. Very Good)
- ☐ overall Rank > 4000* for each culvert (i.e. Good)
- ☐ overall Rank > 3000* for each culvert (i.e. Fair)
- ☐ special conditions (see Notes)
- ☐ specific restrictions (see Notes)
- ☐ specific wording for signs (see Notes)
- ☐ other (specify)

Access Control

- ☐ sign at first encountered culvert
- ☐ sign at all culverts
- ☐ effective year round physical barrier
- ☐ effective seasonal (summer) physical barrier
- ☐ berm
- ☐ slash piling
- ☐ ditching
- ☐ ripping up the road
- ☐ winter road
- ☐ red or flashing amber light
- ☐ sign at certain culverts (see Notes)

Bridges

General Conditions

- ☐ provide engineer inspection report - mandatory† for all bridges
- ☐ install bridge signs - mandatory† for all bridges
- ☐ overall rank of very good (or better) for each bridge
- ☐ overall rank of good (or better) for each bridge
- ☐ overall rank of fair (or better) for each bridge
- ☐ install load posting signs†† (see Notes)
- ☐ upgrade bridges to full truck load carying capacity (CL-625-ONT)
- ☐ other (specify)

Access Control

- ☐ sign at first encountered bridge
- ☐ sign at all bridges
- ☐ effective year round physical barrier
- ☐ effective seasonal (summer) physical barrier
- ☐ red or flashing amber light
- ☐ sign at certain bridges (see Notes)
- ☐ specific restrictions (see Notes)
- ☐ specific wording for signs (see Notes)

Railways - **All requirements are mandatory for each railway crossing**

- ☒ stop signs installed at crossing if there is no automatic warning system
- ☒ rail crossing ahead signs** (Wc-4) in place if crossing signs not visible on approach
- ☒ sight lines clear for 400m down the track from a stopped position at the crossing
- ☒ approach grades < ±2% within 8m of the crossing and < ± 5% within 18m of the crossing
- ☒ road approach is smooth and continuous with crossing surface
- ☒ rail and road alignment angles are to be no less then 70 degrees

*As per MNRF Roads and Crossings Condition Inspection Procedure Instruction Manual (2018 or most recent).

**As per MNRF Signs for Roads and Crossings Implementation Bulletin (2019 or most recent).

† Mandatory unless being decommissioned

†† As per the Crown Land Bridge Management Guide and Sec. 14 of the CHBDC

Notes: *Note any variance to the network crossings, etc. here, e.g.:*
Remove and slope all crossings, but install ford at crossings 102 and 103

3) MNRF requirements incorporated into AWS by SFL holder

☐ Section 2 requirements for transfer received from MNRF by _____ name _____ on _____ date _____

☐ Crossings, bridges and road requirements included in AWS tables and text

4) Work is done by SFL holder to satisfy requirements prior to road responsibility transfer

FOIP Submission ID: _____

5) MNRF determines if final transfer inpection(s) is required and confirms whether or not requirements for transfer ha

Is final transfer inspection required?

☐ Yes If Yes, type of inspection: _____

☐ No If No, provide rationale (must be acceptable to District Manager):

_____

☐ Requirements for transfer have been met _____ date _____ _____ name & position _____

Once requirements for transfer are confirmed to be complete, MNRF advises SFL holder they can submit amendment request.

6) FMP Amendment

SFL submits amendment to MNRF for approval to transfer road responsibility (FMP-18), digital road and crossing status, include transfer plan in FMP RUMS supp doc.
Amendment approval completes the road responsibility transfer.