

Final Forest Management Plan Summary

Bancroft Minden 2021-2031 Final Forest Management Plan

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TABLE OF CONTENTS

1.0	LOCATION	1
2.0	PUBLIC CONTACTS	1
3.0	MANAGEMENT RESPONSIBILITY	1
4.0	LOCAL CITIZENS’ COMMITTEE PARTICIPATION	1
5.0	LONG-TERM MANAGEMENT DIRECTION.....	3
5.1	Plan Management Objectives and Indicators.....	3
6.0	PLANNED FOREST OPERATIONS FOR THE 10-YEAR PLAN PERIOD	5
6.1	Silvicultural Systems.....	5
6.2	Forest Units.....	6
6.3	Silvicultural Ground Rules.....	7
6.4	Planned Harvest Area and Volume	7
6.5	Planned Road Access	9
6.6	Planned Forest Renewal and Tending Operations.....	10
6.7	Area of Concern Prescriptions	10
7.0	OBJECTIVE ACHIEVEMENT	11
7.1	Spatial Assessment.....	15
7.2	Social and Economic Assessment.....	16
7.3	Risk Analysis.....	17
7.4	Conclusion of Sustainability.....	18
8.0	ISSUES	18
9.0	PUBLIC CONSULTATION	19
10.0	SUMMARY MAP	19

1 **1.0 LOCATION**

2 The Bancroft Minden Forest Management Unit is located within the Bancroft District and
3 the Southern Region of the Ministry of Natural Resources and Forestry (MNRF).

4 **2.0 PUBLIC CONTACTS**

5 The public contacts for the Plan are:

6 Svetlana Zeran,	R.P.F. Plan Author, Bancroft Minden Forest Company Inc.
7 David Chau	A/Regional Resources Manager, MNRF Southern Region
8 Suzy Shalla	A/District Manager, MNRF Bancroft District
9 Jane Dumas	Bancroft-Minden Local Citizens' Committee Representative

10 **3.0 MANAGEMENT RESPONSIBILITY**

11 The Bancroft Minden Forest (Management Unit #220) was licensed to the Bancroft Minden
12 Forest Company Inc. in 1998, under Sustainable Forest License (SFL) No. 542585. The
13 company administers forest management planning activities and operations from its office
14 located in Bancroft, Ontario. The company is responsible for the preparation,
15 implementation, and monitoring of the Forest Management Plan (FMP).

16 MNRF administers the forest from its Bancroft District MNRF office. The MNRF is
17 responsible for the approval of land and resource-use decisions pertaining to the forest.
18 More details about the administration of the forest can be found in Section 1 of the FMP.
19 The management unit description is included in Section 2 of the FMP.

20 This FMP is prepared for the 10-year period from 2021 to March 31, 2031. This FMP
21 supersedes the 2011-2021 Forest Management Plan for the Bancroft Minden Forest.

22 **4.0 LOCAL CITIZENS' COMMITTEE PARTICIPATION**

23 The Local Citizens' Committee (LCC) assists the Plan Author and the interdisciplinary
24 planning team during the preparation and implementation of the FMP. The LCC represents
25 a broad range and balance of interests to ensure that forest management proceeds in a

1 manner that integrates the interests of all users. The proposed long-term management
 2 direction and draft FMP were presented to the LCC, and input was requested on these
 3 products as well as the background information. A desired forest and benefits meeting was
 4 held where LCC members gave their input for the strategic direction of the FMP.

5 *Table 1. List of LCC members and their affiliation*

Name	Affiliation
Jane Dumas	Mayor, Township of South Algonquin, Whitney
Loy Freymond	Sawmill owner, Shareholder & President of BMFC, Bancroft
Peter Wood	Ontario Federation of Four-Wheel Drive Clubs, Toronto
Irvin Yateman	Algonquin Nation Kijicho-Manito, Bancroft
Kimberley Roberts	Resident, Haliburton
Janice MacKillican	Councilor, Township of Limerick & Limerick Lake Cottage Association
Keith Hodgson	Independent logger, Shareholder MDFS, Haliburton
Chris Ursulak	McKenzie Lake Cottage Owners Association, Whitney

6
 7 The LCC prepared a summary of activities during FMP preparation, including a statement of
 8 the committee's general agreement or disagreement with the FMP. This report by the LCC
 9 is included in Supplementary Documentation K of the FMP. The LCC was involved in or
 10 briefed about FMP development at approximately 16 LCC meetings from March 2018 to
 11 June 2021. One LCC member attended the Long-term Management Direction (LTMD) FMP
 12 training session conducted by MNRF.

13 In February 2021, the LCC completed an Effectiveness Survey to determine the overall
 14 satisfaction from the committee in contributing to the development of the 2021-2031
 15 Bancroft Minden FMP. A majority (83%) of the LCC felt that they had been kept well
 16 informed throughout the development of the FMP and had been provided meaningful
 17 opportunities to contribute to the development of the FMP.

18 A member of the LCC has participated in the preparation of the FMP as a planning team
 19 member and attended all information sessions. The LCC representative on the planning
 20 team aided in developing communication strategies to help inform the public and improve
 21 participation. This LCC member also engaged in meetings with public interest groups who
 22 raised concerns during consultation periods.

23 During the June 2021 meeting of the LCC, the draft FMP was presented and the LCC voted in
 24 favour of agreement with the FMP. This agreement included support for the LTMD, planned
 25 operations and roads included in the draft FMP.

1 **5.0 LONG-TERM MANAGEMENT DIRECTION**

2 The Long-term Management Direction (LTMD) provides guidance for the levels of access,
3 harvest, renewal and tending activities required to achieve the desired future forest and
4 benefits. Further, it is a means of assessing the sustainability of the management strategy
5 through the measurement and monitoring of the FMP objectives and indicators. It is
6 expected that a balanced achievement of biological, social and economic objectives, will
7 result in the desired long-term future forest condition and benefits.

8 The LTMD is represented by the types and levels of access, harvest, renewal and tending
9 activities required to manage forest cover in a manner that balances the achievement of
10 management objectives over time. The aspatial model: Strategic Forest Management
11 Modelling (SFMM) was used as the primary analysis tool for the strategic analysis to
12 develop the LTMD.

13 The development of the LTMD was an iterative process whereby SFMM was used to project
14 changes to the forest structure, composition and pattern for 150 years into the future.
15 Results were examined and SFMM inputs adjusted as required to improve the model's
16 ability to meet the various management objectives. This process commonly involved
17 adjusting volume targets, harvest flow policies and targets for the forest diversity indicators
18 such as landscape class area, old growth area, mature and older forest area and young
19 forest area. As each investigation was run, the resulting harvest volume, forest diversity
20 indicators, silvicultural expenditures and the silvicultural treatment program were
21 examined. The process continued until the Planning Team was satisfied that no further
22 significant improvements could be made, that a balance of objectives have been achieved,
23 and that the preferred LTMD harvest areas were practical and could be implemented. The
24 modelling process that led to the LTMD is described in Section 3.7 of the FMP and the
25 Analysis Package in FMP Supplementary Documentation B.

26 **5.1 PLAN MANAGEMENT OBJECTIVES AND INDICATORS**

27 As required by the *Crown Forest Sustainability Act (CFSA)*, management objectives for the
28 Bancroft Minden Forest must be compatible with the sustainability of the Crown forest, and
29 indicators of objective achievement must be identified. In addition, the *CFSA* requires that
30 each FMP contain management objectives relating to:

- 1 (a) Crown forest diversity, including consideration for the conservation of natural
 2 landscape patterns, forest structure and composition, habitat for animal life and the
 3 abundance and distribution of forest ecosystems;
 4 (b) Social and economic factors, including harvest levels and a recognition that
 5 healthy forest ecosystems are vital to the well-being of Ontario communities;
 6 (c) The provision of forest cover for those values that are dependent on the Crown
 7 forest; and
 8 (d) Silviculture for the harvest, renewal and maintenance of the Crown forest.

9 Table FMP-10 Assessment of Management Objectives (located in electronic FMP file:
 10 MU220_2021_FMP_TBL_Tables.pdf) summarizes management objectives, indicators,
 11 desirable levels and associated short-term targets. Table FMP-10 presents an assessment of
 12 achievement of desirable levels for those objectives that can be assessed at this time (in the
 13 FMP). The management objectives, indicators, desirable levels and targets that are not
 14 provided directly from guides and other sources of direction were developed with input
 15 from the Bancroft Minden Local Citizens' Committee (through the Desired Forest and
 16 Benefits meetings), the Planning Team, and MNRF advisors. Desirable levels (not provided
 17 by guides or other sources of direction) were further refined through scoping analysis. Input
 18 on desired forest and benefits from local First Nation and Métis communities was also
 19 considered in FMP development.

20 Sources of information considered in management objective development included but
 21 were not limited to: the current 2011-2021 FMP; background information, forest
 22 management guides and policies (particularly the 2020 Forest Management Planning
 23 Manual), MNRF forest management planning direction and training, management unit
 24 annual reports, provincial audits, and strategic modelling investigations for the 2021-2031
 25 FMP.

26 For each management objective, at least one indicator of objective achievement was
 27 developed, along with an associated desirable level(s) and target(s). Some objectives have
 28 multiple indicators to measure achievement. A desirable level is a specific number, a range
 29 or a trend for an indicator, to be achieved and maintained over time. As with desirable
 30 levels, targets are specific numbers, ranges, or trends, with a timeframe for achievement.
 31 The establishment of targets for each objective reflected a balancing of objective
 32 achievement and considered:

- 33 (a) Social, economic and environmental considerations;
 34 (b) The associated indicator and its desirable level;
 35 (c) The current forest condition; and,

1 (d) Short-term (10 years), medium-term (20 years) and long-term (100 years)
2 achievement.

3 The rationale used in setting desirable levels and targets is summarized in Section 3.6 of the
4 FMP.

5 In accordance with management objectives, the FMP should recommend forest
6 management activities that will create a future forest landscape with a composition and
7 structure that is similar to those created by natural processes. The science package
8 developed by MNRF to support the *Forest Management Guide for Great Lakes St Lawrence*
9 *Landscapes* (The Landscape Guide) is considered the best available science, and included
10 information for many of the natural landscape-related indicators. The Planning Team also
11 relied on Ontario's Landscape Tool (OLT) that was developed by MNRF to support the
12 Landscape Guide which recorded the natural forest condition used for many management
13 indicator desirable levels. The planning for a future forest condition that is comparable to a
14 natural forest condition was the primary consideration for the development of the LTMD.
15 Projected achievement of the desired levels for management objectives is discussed in this
16 FMP summary in Section 7.0.

17 **6.0 PLANNED FOREST OPERATIONS FOR THE 10-YEAR PLAN PERIOD**

18 **6.1 SILVICULTURAL SYSTEMS**

19 **Selection** management is carried out in productive, shade-tolerant hardwood forest types
20 (dominated by sugar maple) that have trees of sufficient quality to manage the stand in an
21 uneven-aged approach where there is a desired distribution of trees by size class; partial
22 harvest entries are undertaken every 20 to 40 years. Note that "tolerant" refers to the
23 tolerance of these species to establish and survive in relatively low light conditions and then
24 respond positively to increases in available light after partial cutting. Emphasis is placed on
25 spacing residual trees by removing trees of lesser health and vigour. Two main objectives
26 for selection stands are to improve the growth rate of the stand, but also to improve the
27 overall health and quality of the remaining forest.

28 **Shelterwood** management is a form of partial cutting in which the mature forest is removed
29 in a series of harvests. Typically, a seeding cut is undertaken to provide the proper light
30 conditions for trees of moderate tolerance to shade (e.g. white pine, yellow birch, red oak).
31 The young forest is established under the shelter of the mature forest. As the young forest
32 grows, one or more removal harvests are undertaken to provide more light to the

1 developing young stand. However, even after a final removal cut, several mature trees are
2 left to provide structural diversity and important wildlife habitat. When treatments are
3 applied uniformly over the same stand, it is referred to as uniform shelterwood; with the
4 intent to establish an even-aged cohort of regeneration throughout the entire stand.
5 Uniform shelterwood is the most commonly applied treatment to white pine (PWUS) and
6 red oak (ORUS) stands within the Bancroft Minden Forest.

7 Other variants of the shelterwood system exist, however irregular shelterwood is the most
8 commonly applied treatment within the management unit on tolerant/mid-tolerant
9 hardwoods and hemlock and cedar dominated stands. Irregular shelterwood is a form of
10 uneven-aged shelterwood management that promotes diversity and creates conditions that
11 are resilient and adaptable. Because of highly variable harvest intensities and small-scale
12 disturbances common to the region, stands in the Great Lakes St Lawrence region are
13 commonly found to have an irregular stand structure. This has resulted in gaps in diameter
14 distributions, making many stands difficult to manage under the balanced uneven-aged
15 structure applied in selection system cuttings.

16 **Clearcutting** has long been recognized as a form of management wherein the mature trees
17 are removed in one operation. Clearcutting still involves the removal of the majority of the
18 mature trees, however, the *Forest Management Guide for Conserving Biodiversity at the*
19 *Stand and Site Scales* (MNR, 2010) requires the retention of residual trees to be left after
20 the harvest. Clearcutting is an appropriate management system for many mixedwood
21 stands and stands to be managed for tree species that are intolerant of shade (e.g. poplar,
22 white birch, red pine, white spruce).

23 In red pine (PRCC), commercial thinning is often conducted to control stand density and
24 improve tree quality. As it is a partial harvest, only a portion of the trees are removed from
25 the site. Removing dead, diseased and deformed trees improves the health and vigor of
26 residual trees to create a more resilient forest.

27 **6.2 FOREST UNITS**

28 Each stand is assigned to a forest unit based on species composition, stocking, site
29 conditions, and disturbance history. All stands within a forest unit are managed under the
30 same silvicultural system but may be managed with different treatments (e.g., natural
31 regeneration, site preparation, planting, seeding, tending) and may have different
32 objectives in terms of different future forest conditions. The management strategy is
33 indicated through the applied Silvicultural Ground Rule.

1 **6.3 SILVICULTURAL GROUND RULES**

2 Each stand to be harvested is assigned a Silvicultural Ground Rule (SGR). Each SGR
 3 describes the following components: a description of the current and future stand
 4 conditions, renewal treatment options and the regeneration standards that are to be met.
 5 Each SGR is intended to describe the harvest, renewal and tending activities that will be
 6 carried out on a given stand to allow the current Forest Unit, following harvest, to succeed
 7 to the Future Forest Unit, whether it is similar to the pre-harvest stand or a different Forest
 8 Unit. Silvicultural Ground Rules are included in the FMP in Table FMP-4.

9 **6.4 PLANNED HARVEST AREA AND VOLUME**

10 Results of the long-term strategic planning were used to plan operations for the ten-year
 11 period of this FMP. The total available harvest area (AHA) for the ten-year period projected
 12 by the Long-Term Management Direction is 33, 079 hectares. The total planned harvest area
 13 for the ten-year FMP period does not exceed the available harvest area for any forest unit
 14 (30, 872 ha, Table FMP-12).

15 The planned harvest area and percentage of the 10 year planned harvest area for each of the
 16 3 major silvicultural systems is listed below (see Section 4.3 of the FMP for more details):
 17

18 *Table 2. Planned proportions of silviculture systems*

Silvicultural System	10-year Planned Harvest Area (ha)	% of 10-year Planned Harvest Area
Shelterwood	16, 212	53%
Clearcut	8, 684	28%
Selection	5, 976	19%
<i>Total</i>	<i>30, 872</i>	<i>100%</i>

19
 20 The estimated planned harvest areas for the 10-year FMP term summarized by principal
 21 forest units and the harvest volumes (m³) associated with the harvest areas by the principal
 22 species groups are listed below:

1 *Table 3. Planned harvest area by forest unit (left), planned harvest volume by species group (right)*

Forest Unit	Planned Harvest Area (ha)	% of Planned Harvest Area
HDSH	11,411	37%
HDSEL	5,976	19%
INTCC	3,903	13%
PWUS	2,401	8%
MXHCC	1,994	6%
ORUS	1,925	6%
MXCCC	1,483	5%
PRCC	1,305	4%
HESH	419	2%
CESH	55	<1%
<i>Total</i>	<i>30,872</i>	<i>100%</i>

Species Group	Planned Harvest Volume (m ³)
PO	814,224
TOL	651,688
PWR	512,771
SPF	266,486
BW	148,737
OC	48,147
<i>Total</i>	<i>2,442,054</i>

4 **These tables include Commercial Thinning area. Volumes are net merchantable and do not*
5 *include undersize and defect.*

6 The planned harvest area is expected to provide 2,442,054 total net merchantable cubic
7 metres of wood, which is lower than the LTMD projection of 2,650,000. The planned
8 volumes are 92% of the available (96% for hardwood and 86% for conifer). Planned harvest
9 volumes for conifer are lower than available as conifer stands such as HESH and PWUS are
10 slightly under-allocated to address other concerns such as old growth. Additionally, the
11 stands that were selected were close to the average condition found on the forest as
12 opposed to the best available stands determined by the model. Ultimately, the accuracy of
13 estimated volumes associated with planned harvest is considered the best estimate and is
14 sufficient to meet current wood supply commitments.

15 During the 10-year period of the FMP, unforeseen circumstances (e.g. wildfire, blowdown,
16 operational constraints, markets) may cause some of the planned harvest areas to be
17 unavailable for harvest. In order to accommodate such circumstances, “contingency areas”
18 for harvest have been identified. This contingency area will serve as a replacement area for
19 planned harvest and will be used only if needed and brought into the FMP through an
20 amendment to the FMP. The area and volume of the contingency area are summarized in
21 Table FMP-16 and cannot exceed 20% of the Available Harvest Area. A total of 6,318
22 hectares of contingency area have been identified in the management FMP.

23 Bridging area is also included in the final FMP. Areas of bridging operations are identified to
24 allow for the completion of harvest operations from the 2011-2021 FMP. Under the 2020
25 FMPM, the amount of bridging area and time for completion of bridging harvest is defined

1 by the FMP planning team. The Planning Team agreed that all areas remaining to be
 2 harvested or that require completion of harvest from the 2011-2021 FMP may be scheduled
 3 and eligible for harvest for the first 5-years of the 2021-2031 FMP, and must be completed
 4 by March 31, 2026. There are 12,384 ha of 2011-2021 FMP bridging area included in the
 5 FMP for 2021-2031. This may appear to be a large amount of bridging area but it is
 6 important to note that only full harvest allocations can be bridged. Many of the bridging
 7 areas are already partially harvested, meaning that the actual area remaining is closer to
 8 7,000 hectares.

9 **6.5 PLANNED ROAD ACCESS**

10 The planned road construction for the 10-year period of the FMP is summarized below for
 11 two road classes (primary and branch roads) that are needed to access all harvest and
 12 renewal operations over the 10-year period. Operational (previously called tertiary) roads
 13 are not listed in this section as they provide short-term access for harvest, renewal and
 14 tending operations and do not require the same level of planning (See Section 4.5.2 and
 15 Table FMP-18 for more details). Instead, operational road boundaries (ORBs) are included in
 16 FMP maps to display where new operational roads may be constructed.

17 The Bancroft Minden Forest is generally well-accessed for the next 20 years. The summary
 18 map shows planned Branch road construction for 2021-2031 and confirmed primary road
 19 corridors for the next 20 years (2021-2041). The confirmed primary road corridors
 20 (alternatives) have been carried forward from Phase 2 of the 2011 FMP as the road was
 21 never constructed. Two alternative corridors are still being consulted on. Selection of the
 22 final primary road corridor will be determined during plan implementation to allow time to
 23 further discuss with Williams Treaties First Nation (WTFN) the potential impacts to
 24 Aboriginal values and to develop mitigation measures if needed.

25 A total of 7 branch road corridors are planned to be constructed during this FMP. The
 26 branch road corridors are listed below with their associated proposed construction lengths:

- 27 • Airport Branch Road (4.8 km) – Faraday Township
- 28 • Berrycan Branch Road (4.9 km) – Hindon Township
- 29 • McKeown Lake Branch Road (5.3 km) – Ridout Township
- 30 • Monkshood Road (1.5 km) – Dickens Township
- 31 • Murray-Wicklows Branch Road (11 km) – Wicklows, Lyell Township
- 32 • North Pencil Lake Road (18.7 km) – Cavendish, Anstruther Township
- 33 • Sherborne Branch Road (6.5 km) – Sherborne Township

1 Road Use Management Strategies for each primary, branch road and operational road or
 2 road network are located within Table FMP-18. Road Use Management Strategies include
 3 information about the expected use of the road for forest management purposes (e.g.
 4 continued use, transfer of road responsibility, access restrictions or decommissioning), road
 5 maintenance, and monitoring for safety or environmental concerns. The confirmed
 6 proposed new primary road corridor and new branch road corridors associated with the
 7 2021-2031 FMP are illustrated on the FMP Summary Map and Composite Map.

8 **6.6 PLANNED FOREST RENEWAL AND TENDING OPERATIONS**

9 The planned renewal and maintenance activities that are required to meet the FMP
 10 objectives during this 10-year FMP period are listed below in Table by renewal activity
 11 type. These renewal activities will be carried out on the current planned harvest areas, as
 12 well as areas harvested during past FMP terms.

13 Artificial regeneration refers to tree planting and seeding. Supplemental treatment usually
 14 refers to an area that is regenerating naturally that needs some supplemental treatment
 15 (usually tree planting) to meet the regeneration standards (See Section 4.4 of the FMP for
 16 more details). Silvicultural Effectiveness Monitoring has shown that past regeneration
 17 practices on the Bancroft Minden Forest have been very successful, therefore there are
 18 minimal retreatment and supplemental areas planned for this FMP period.

19 *Table 4. Planned renewal and tending operations*

Renewal Activities	Planned Treatment Harvest Area (ha)	Planned Treatment Naturally Disturbed Areas (ha)
Natural Regeneration	26, 735	0
Artificial Regeneration	3, 047	0
Total Regeneration	29, 781	0
Retreatment	111	0
Supplemental	216	0
Site Preparation	3, 440	0
Total Tending	7, 847	0

20

21 **6.7 AREA OF CONCERN PRESCRIPTIONS**

22 The forest provides for many forest values. Some values have the potential to be negatively
 23 impacted by forest management. An area of concern (AOC) is a defined geographic area

1 associated with an identified value that may be affected by forest management activities.
2 AOCs may be applied to a social or Indigenous value such as an archaeological potential site
3 or trap cabin, or it may be an ecological or environmental value such as a stream or
4 significant wildlife habitat feature (e.g., a great blue heron colony, a hawk nest, a bat
5 roosting site).

6 FMP Table FMP-11 includes APC prescriptions for many different values. These prescriptions
7 may include a reserve, an area with access restrictions and/or a modified management zone
8 (MMZ) wherein there may be restrictions on the timing of harvest or silvicultural activity,
9 method of harvest or types of trees that can be harvested. Some prescriptions were
10 developed from the direction in a forest management guide, and others were developed at
11 the planning team level.

12 AOC prescriptions for identified values were prepared based on the best information
13 available, as provided by the MNRF, land use direction (such as the *Crown Land Use Policy*
14 *Atlas*, known as CLUPA), and new information brought forward by First Nation and Métis
15 groups and stakeholders. AOC prescriptions were developed, as required, where forest
16 management operations (harvest, renewal, tending, road development) were anticipated to
17 impact values.

18 The FMP is also subject to a range of rules and standards referred to as Conditions on
19 Regular Operations (CROs). These tend to be associated at a scale that is not easily mapped
20 or spatially predicted. These include management requirements in Moose Emphasis Areas
21 and Deer Emphasis Areas. They also include standards to protect soil through forest
22 extraction trail coverage, rutting and water crossing installation. Tree markers must retain
23 some level of cavity trees that are important to many wildlife species, as well as mast trees
24 that provide food for many animals (See FMP Section 4.2.2.2 for more details).

25 Operational prescriptions for Areas of Concern and silvicultural ground rules for regular
26 operations have been prepared in accordance with the applicable forest management
27 guides. There are no Area of Concern prescriptions or silvicultural prescriptions that are
28 exceptions to the provincial guides.

29 **7.0 OBJECTIVE ACHIEVEMENT**

30 Management objectives, indicators, and the timing of assessment for each indicator are
31 documented in Table FMP-10. There are a total of 6 management objective categories and
32 34 indicators of objective achievement in this FMP. The collective assessment of

- 1 achievement of the desirable level for each indicator is further discussed in FMP Sections
- 2 3.7.3 and 5.0 and is summarized as follows in Table 5 (by objective):

1 Table 5. Bancroft Minden Forest 2021 FMP assessment of objective achievement

Objective / Indicator	Assessment
Forest Diversity – Natural Landscape Pattern and Distribution	
Texture of Mature and Old Forest (50 ha)	not achieved
Texture of Mature and Old Forest (500 ha)	not achieved
Young Forest Patch Distribution	achieved
Forest Diversity – Forest Structure, Composition & Abundance	
Landscape Class	not achieved
Old Growth	partially achieved
Red and White Pine SRNV	not achieved
Red and White Pine 1995 Levels	achieved
Pre-sapling Development Stage	achieved
Pre-sapling, Sapling & T-stage Development Stages	achieved
Forest Diversity – Habitat for Animal Life	
Browse Producing Habitat	partially achieved
Percent of MEA in Mature Conifer-dominated Forest	partially achieved
Percent of MEA in Hardwood or Mixedwood Forest	partially achieved
Percent of Critical Thermal Cover	not achieved
Compliance Related to SAR Species AOC Prescriptions	future assessment
Silviculture	
Percent of Harvested Area Assessed as Successfully Established (by forest unit)	future assessment
Planned and Actual Percent of Harvest Area Treated by Broad Treatment Type	future assessment
Planned and Actual Percentage of Harvest Area Successfully Regenerated by Target Forest Unit, by Forest Unit	future assessment
Social & Economic – Harvest Levels & Community Well-being	
Available Harvest Area by Forest Unit	achieved
Long-term Harvest Volume by Species Group	achieved
Long-term Harvest Volume by Product Group	achieved
Actual Harvest Area by Forest Unit	future assessment
Actual Harvest Volume by Species Group	future assessment
Crown Forest Area Available for Timber Production	future assessment
Density of SFL Primary and Branch Roads in Productive, Crown Forest	future assessment
Density of SFL Operational Roads in Productive, Crown Forest	future assessment
LCC's self-evaluation of its effectiveness in Plan development	not achieved
Opportunities for involvement of First Nation & Métis communities in Plan development	achieved
Presentation on annual operations to interested First Nation and Métis	future assessment
Operator and Contractor Training on First Nation Values	future assessment
Social and Economic – Healthy Forest Ecosystems	
Percent of Forest Operation Inspections in Non-Compliance, by activity and remedy type	future assessment
Percent Compliance for Site Disturbance/Rutting communities	future assessment
Percent Compliance for Water Quality and Fish Habitat	future assessment
Percent Compliance for Installation and Removal of Water Crossings	future assessment
Communication with Forest Operators	future assessment

1 Of the 34 objective indicators in the FMP:

2 8 indicators **Achieved** desirable levels or movement towards desirable level
3 through meeting the target level within the FMP period;

4 4 indicators **Partially Achieved** with achievement of or movement towards
5 target levels (see Section 3.7.3 subsections for discussion of rationale by
6 indicator);

7 6 indicators do **Not Achieve** desirable or target levels (discussion below); and

8 16 indicators are measured in the **Future**, after FMP implementation.

9 The six indicators that do not achieve the desirable or target levels are described below.

10 Texture of Mature and Old Forest at 50 ha and 500 ha

11 For both the 50 ha and 500 ha scales, there is an overall movement away from the ideal
12 composition. This is because the majority of the landbase will be dominated by mature and
13 old forest at FMP end. In the LTMD, the solution does not create enough disturbance to
14 significantly shift compositions towards younger age classes. This is a direct result of the
15 predominant reliance on partial cutting silviculture (i.e. shelterwood and selection systems)
16 on the forest and the proportionate low-level application of the clearcut silvicultural
17 system, as well as the existing age class structures that are biased to mature/old, especially
18 in reserves. This bias is a difficult trend to reverse within the FMP timeframe as
19 management intervention is limited. However, the achievement of these indicators is better
20 than would be expected in a natural scenario with no harvesting activity.

21 Landscape Class

22 The low achievement of landscape class desirable levels is attributed to the initial age-class
23 structure, the Plan Forest Unit harvest levels and the post-harvest and natural succession
24 rules. These elements collectively correspond to the rate at which the ideal composition can
25 be achieved. Therefore, it will take much longer than the 150 year modelling horizon to
26 achieve the majority of landscape class desirable levels.

27 Red and White Pine SRNV

28 The FMP is unable to achieve the Red and White Pine SRNV levels because of the current
29 forest condition. The current forest condition is a result of logging pressures on white pine
30 in the 1800's, followed by consistent fire suppression, which favoured hardwood species
31 and suppressed the natural replenishment of white pine. Since there is far less white pine in

1 the area than would be naturally, the SRNV desired levels for red and white pine is
2 exceedingly difficult to achieve.

3 Percent of Critical Thermal Cover

4 The harvest strategy in the Baptiste and Mephisto Deer Emphasis Areas is to maintain a
5 high proportion of conifer cover to enhance deer wintering habitat. The achievement of this
6 objective may be improved through operational planning and harvest block layout during
7 2021-2031 FMP development. Additionally, Conditions on Regular Operations (CROs, FMP
8 Text Section 4.2.2.2) will be implemented in DEAs to maintain or increase critical thermal
9 cover objectives.

10 Local Citizens' Committee Self Evaluation

11 This objective is meant to ensure that the LCC was meaningfully engaged in the
12 development of the 2021-2031 Bancroft Minden FMP. It is difficult to quantify
13 'engagement' and set targets accordingly, therefore a self-evaluation criterion has been
14 created to evaluate LCC effectiveness in FMP development. Continuous improvement
15 serves as the basis for this indicator as the desirable level is to maintain a score at or above
16 the level achieved for the 2011 FMP.

17 Unfortunately, the self-evaluation score of 8.0 falls short of the 2011 FMP score (8.6). The
18 category 'Influential' held the lowest average score of 6.8. In contrast, the self-evaluation
19 report reflects high scores for functionality (8.7), representativeness (8.4) and information
20 provided (8.4). The insights provided by the committee suggest that the FMP will be
21 strengthened and improved by thoroughly evaluating their comments, concerns and
22 suggestions.

23 **7.1 SPATIAL ASSESSMENT**

24 Several preliminary spatial assessments were conducted to analyze the achievement of
25 management objectives that are influenced by the location of planned harvest areas.
26 Documentation of these spatial analyses is included in FMP Section 3.7.4, and
27 Supplementary Documentation A – Analysis Package, and FMP text Section 3.7.3 and
28 Section 4.3. Brief summaries for each analysis follow.

29 **Harvest Areas** - Harvest areas were selected to create economically viable allocations
30 throughout the management unit. Fragmentation of stands is minimized as much as
31 possible and other considerations were weighted, such as access. The forest was
32 categorized into two Strategic Management Zones (SMZ), which are used to track the

1 distribution of several key indicators in a spatial context. The former Bancroft Management
2 Unit (MU) and the former Minden MU have been identified as specific SMZ's based on
3 historical MU boundaries and the associated traditional harvest areas of the local forest
4 industry. The allocations are distributed between the Bancroft and Minden SMZ areas for
5 the first 10-year term at 76% and 24% respectively. The harvest distribution pattern has
6 been modelled out for the next 4 terms (i.e. 40 years), at which time the distribution is
7 projected to be approximately 74% and 26% respectively (FMP text Section 3.7.4). The 40-
8 year projection of harvest was considered by the Planning Team to be both operationally
9 and economically feasible and in-line with current shareholder agreements.

10 **Landscape Pattern** – Landscape pattern objectives include indicators for maintaining or
11 enhancing natural landscape structure, composition and patterns that provide for the long-
12 term health of forest ecosystems in an efficient and effective manner. The Planning Team
13 relied on MNRF Ontario's Landscape Tool (OLT) projections of the simulated natural forest
14 condition when determining appropriate desirable levels for landscape pattern
15 indicators. Strategic and operational planning considered large, landscape patches, MEAs,
16 DEAs, harvest patch size, and frequency of young forest patches. The spatial distribution of
17 landscape pattern (measured by Ontario's Landscape Tool) is slowly moving towards the
18 natural pattern through the implementation of the planned harvest allocations. The spatial
19 distribution of the projected harvest area for 40 years (2021-2061) was assessed and
20 considered spatially and economically feasible.

21 **7.2 SOCIAL AND ECONOMIC ASSESSMENT**

22 A social and economic assessment was prepared for the LTMD and summarized in the FMP
23 text Section 3.7.5 to identify the expected social and economic impacts of implementing the
24 management strategy proposed in the LTMD for the development of this FMP. This
25 assessment outlined the expected social and economic impacts associated with the current
26 direction and is based on the qualitative comparison of the annual levels for the 2011 FMP
27 and the levels shown in the LTMD for the 2021-2031 FMP. The proposed LTMD endorsed by
28 the planning team and MNRF, projected a 2.3% increase in volume compared to the 2011-
29 2021 FMP. This could potentially have positive direct and indirect socio-economic benefits
30 to the Bancroft areas and to the Province of Ontario. Increased harvest volumes generally
31 result in higher industry output, employment rates and gross domestic product.

32 The impacts of forest management and operations on other sectors are usually not
33 dependent on the harvest level, but rather on where harvest and roads are planned, and
34 how specific values have been addressed. Stakeholder involvement during FMP

1 development ensured that other forest values were incorporated into the FMP to minimize
2 potential negative impacts from operations.

3 Overall, the social and economic assessment for the FMP suggests there is a potential for an
4 improvement in social and/or economic benefits for the 2021-2031 FMP compared to the
5 2011-2021 FMP.

6 **7.3 RISK ANALYSIS**

7 This section summarizes the risks associated with FMP implementation. The following bullet
8 points describe certain assumptions to successful implementation of the FMP and the
9 associated risk assessment:

- 10 • Uncertain market conditions for wood is the most significant risk to the FMP. This is
11 especially relevant for low demand species groups and their associated forest types.
12 Since planned outcomes are based on a predetermined amount of harvesting activity,
13 there are risks associated with low utilization. However, scoping investigations
14 demonstrated that historic levels of utilization trend towards the targets for many of the
15 objectives set in table FMP-10.
- 16 • Regulatory changes (e.g. implementation of species at risk legislation) represent a risk as
17 a portion of forested area is currently bypassed in order to meet the requirements of
18 these regulations. An increase in regulatory complexity could make this bypassed area
19 increase, further limiting the ability to manage the forest and compounding lack of
20 disturbance occurring on the forest. Ontario's Forest Sector Strategy seeks to reduce the
21 regulatory complexity and should mitigate the risks associated with regulatory change.
- 22 • Invasive species are a significant risk to the FMP as probable future threats (e.g.
23 Hemlock Woolly Adelgid, Oak Wilt, etc.), the timing duration and intensity of these is
24 difficult to account for in a long-term deterministic model.
- 25 • Climate change also poses a potential threat to the health and condition of the forest by
26 creating favourable conditions for some species while creating unfavourable conditions
27 for others. Since the timing and magnitude of these shifts are uncertain, it is impossible
28 to model for a particular scenario.
- 29 • Ownership changes influence the amount of landbase available for management.
30 Generally, ownership changes remove area from management and pose risks to planned
31 operations, as well as the project outcomes of the models used in the LMD when

1 significant landbase changes occur (such as the creation of new parks or conservation
2 reserves).

3 • Access limitations can pose risks to accessing the allocations outlined in the LTMD. Due
4 to the large amount of private land and the fragmented nature of the available crown
5 land, reliance on private land access creates uncertainty for many harvest allocations.

6 • Implementing irregular shelterwood as the primary means of managing Tolerant
7 Hardwoods, which is a significant change from the previous FMP. While this approach to
8 silviculture has been practiced by the SFL in the field, it could not be reported as
9 irregular because the Annual Report and FMP didn't have the proper mechanisms to
10 report the distinction at the time. It is also novel to the modelling process. The most
11 significant change discovered through the LTMD investigations was that irregular
12 shelterwood creates less Tolerant Hardwood harvest volumes compared to the
13 previously utilized uniform shelterwood and selection systems.

14 Risk Assessment Conclusion – Many of these risks are outside of the ability of the model to
15 predict or represent. Climate change, invasive species, changes to land tenure and
16 regulatory changes are all important to identify and consider but cannot yet be
17 meaningfully represented in the model nor controlled by the SFL. The approach to
18 managing these risks is to increase the resilience of the forest through continued progress
19 towards a diverse, natural forest condition.

20 **7.4 CONCLUSION OF SUSTAINABILITY**

21 Overall, the assessment of objective achievement, the social and economic assessment, the
22 Long-term Management Direction and planned forest activities support that the 2021-2031
23 FMP for the Bancroft Minden Forest has regard for plant life, animal life, water, soil, air,
24 social and economic values, including recreational and heritage values. As a result, it can be
25 concluded that this FMP provides for the sustainability of Ontario's Crown forest.

26 **8.0 ISSUES**

27 A few notable issues were encountered during the development of the FMP. The Planning
28 Team worked well together with FMP advisors to answer questions and to develop
29 acceptable solutions to any comments or concerns raised. Nonetheless, the Planning Team
30 encountered several challenges during the LTMD that delayed FMP development. A new
31 forest resources inventory was received late and included several issues that needed to be

1 addressed (see Section 1.0 of the Analysis package for further details). Some tools,
2 particularly one related to the development of growth and yield curves, took additional
3 time to correct for local conditions. Further, there were several staffing changes from both
4 MNRF and BMFC that provided challenges to FMP development. Ultimately, these
5 challenges resulted in the FMP being delayed beyond the recommended timeframe for each
6 stage of planning.

7 Other complex issues pertaining to roads, conservation of old growth and biodiversity, the
8 protection of specific values, and wood supply have been raised. In particular, the
9 management of old growth hemlock forest within the Bancroft Minden Forest has attracted
10 attention from members of the public and interest groups who desire increased protection.

11 Two formal requests for issues resolution were made after review of the Draft Plan at both
12 the District Manager and Regional Director level that resulted in some additional changes to
13 the FMP which are summarized in Part 2 of Supplementary Document L.

14 **9.0 PUBLIC CONSULTATION**

15 In accordance with the *Forest Management Planning Manual (2020)*, there is one remaining
16 formal consultation stage for the Bancroft Minden FMP.

17 Stage Five: Inspection of the MNRF-Approved FMP is scheduled to start one week after the
18 Final Plan is approved (summer of 2021). As described in the FMPM 2020 Part A, Section
19 2.3.3.5, the MNRF-approved FMP, and the FMP summary will be available for inspection at
20 the office of the sustainable forest licensee, and on the Ontario Government website.
21 Interested and affected persons, organizations, and First Nation and Métis communities can
22 arrange an appointment with the Bancroft MNRF district office to discuss the approved
23 FMP.

24 **10.0 SUMMARY MAP**

25 Planned harvest, renewal and tending operations, locations of existing and new primary and
26 branch road construction corridors for the 10-year period are shown on the summary map:

