

Forest Management Planning Standard

Saskatchewan Environmental Code

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Process for Initiating and Developing a Forest Management Plan

Forest Management Plan Author

- 1-1** (1) Prior to initiating a forest management plan (FMP), the licensee shall appoint a FMP author (plan author) who shall lead the overall development and submission of the FMP.
- (2) The plan author shall serve as the primary contact with the Ministry of Environment – Forest Service Branch.
- (3) The plan author shall lead the public engagement process and liaison with the public advisory group (PAG) and communities, including information sharing sessions with First Nation and Métis communities.
- (4) The plan author shall be assisted by a planning team and a PAG. The plan author shall chair all planning team meetings.

Forest Service Branch FMP Coordinator

- 1-2** (1) The FMP coordinator shall lead all ministry representatives on the planning team and act as the point of contact between the ministry and the plan author.
- (2) The FMP coordinator shall be the recipient of all deliverable submissions and coordinate the review and staged-approval of the FMP by ministry staff.

Appointment of Planning Team

- 1-3** The licensee and the FMP coordinator shall appoint representatives from their respective organizations to the planning team.

Information Note

Typically, the planning team would consist of: plan author, FMP coordinator, area forester, FMP analysts, PAG members, other allocation holders and the licensee's planners.

Appointment of Advisors

- 1-4** The plan author and FMP coordinator shall, upon mutual agreement, appoint advisors.

Information Note

Advisors will be experts in their field and provide recommended solutions to issues related to FMP strategies and resource management.

Initiating the Planning Process

- 1-5** (1) The plan author is responsible for the development of the following three deliverables prior to initiating the FMP:
- (a) planning team terms of reference;
 - (b) work plan; and
 - (c) public engagement plan.
- (2) The plan author shall schedule an introductory meeting with the FMP coordinator to discuss the composition of the planning team, and the content of the above-mentioned deliverables.
- (3) The plan author shall submit the deliverables described in subsection (1) in digital format, individually or as a combined submission, for review and approval by the Forest Service Branch.

- (4) Deliverables shall include:
 - (a) title page;
 - (b) executive summary;
 - (c) table of contents; and
 - (d) approval page (signatory page).

Planning Team Terms of Reference

1-6 The terms of reference shall contain the following:

- (a) licence area for which the FMP is being developed;
- (b) vision, objectives and scope of the plan;
- (c) term of the proposed FMP;
- (d) name of plan author, licensee represented, and affiliation with licensee;
- (e) name of FMP coordinator;
- (f) names, position titles, and organizations represented for all planning team members and advisors;
- (g) description of the roles and responsibilities of the planning team members respecting:
 - (i) participation at public meetings, First Nation and Métis community information sharing sessions, and PAG meetings;
 - (ii) leadership for forest modeling and other resource analysis requirements;
 - (iii) development of FMP content; and
 - (iv) plan review;
- (h) dispute resolution process for resolving disagreements among planning team members, including stages of resolution and the point of involvement of senior representatives of the Forest Service Branch and the licensee;
- (i) initial schedule of planning team meetings and workshops; and
- (j) designated approvers within the ministry for each respective FMP deliverable.

Work plan

1-7 A work plan shall be prepared containing the following information:

- (a) stakeholders, First Nation and Métis communities within or adjacent to the licence area who may be affected by the FMP and the involvement of the stakeholders and communities;
- (b) other agencies having jurisdiction over activities in the licence area and the associated legal requirements;
- (c) expected demands for fiber for the licence area, including third party allocations and other facilities not listed in the licence agreement;
- (d) known issues and concerns regarding the management of forest resources (timber and non-timber) within the licence area;
- (e) issues and concerns regarding the availability of inventory or other sources of information;
- (f) itemized listing of the tasks required to complete the deliverables associated with FMP Volumes 1, 2, and 3, including identification of the lead person responsible for each task;
- (g) description of the tools that will be used to assess various forest estate modeling options, including the name and version of the selected forest estate model software;
- (h) schedule for the production of the FMP including progress checkpoints and anticipated timing of deliverables; and
- (i) timelines for interim review and approval.

Progress Reporting and Amendments to the Terms of Reference and Work Plan

1-8 (1) The plan author shall report on progress related to the tasks set out in the approved work plan at each meeting of the planning team.

- (2) Changes to the work plan schedule not affecting submission dates of staged deliverables will be undertaken upon mutual agreement between the plan author and the FMP coordinator and recorded in the planning team meeting minutes.
- (3) Changes to staged deliverable submission dates shall be incorporated into an amended work plan to be submitted to the Forest Service Branch for approval.

Public Engagement Plan

Information Note

In the context of FMP development, engagement and information sharing are defined as follows:

Engagement: Interest-based involvement and participation of stakeholders, First Nations and Métis communities in information-sharing activities.

Information-sharing: Providing and receiving information, identifying and addressing issues through interest-based engagement with direct participation of stakeholders, First Nations and Métis communities.

- 1-9**
- (1) The plan author, in collaboration with the planning team, shall develop a public engagement plan.
 - (2) Public engagement and information sharing activities must be focused on both local and licence-wide issues that affect communities, stakeholder groups, Aboriginal people and others having an interest in the land, resource uses, or forest management activities within the licence area.
 - (3) The licensee shall implement the public engagement plan.
 - (4) The public engagement plan shall include:
 - (a) licensee principal contact person for public engagement queries;
 - (b) Forest Service Branch principal contact on the planning team for public queries, as agreed to by the plan author and the FMP coordinator;
 - (c) statement recognizing First Nation and Métis rights and affirming that First Nation and Métis communities participation in the public engagement and information sharing processes will not prejudice these rights;
 - (d) commitment to establish and maintain a PAG to advise the planning team on the development and implementation of the FMP;
 - (e) proposed processes or mechanisms to incorporate public input into the formulation of Values, Objectives, Indicators, and Targets (VOITs);
 - (f) outline of the overall strategy for conducting:
 - (i) public engagement and information sharing with First Nation and Métis communities – upon the release of the FMP Volume 1; and
 - (ii) public engagement sessions and First Nation and Métis community information sessions – for the review of the FMP Volume 3; and
 - (g) processes respecting the development and maintenance of public engagement and information sharing records.

Public Engagement Reports and Records

- 1-10**
- (1) The plan author shall produce a report on public engagement sessions, PAG meetings, and First Nation and Métis community information sessions, following completion of FMP Volume 1 and 3 review periods.
 - (2) The reports shall contain:
 - (a) location, date and type of contact made;

- (b) persons and organizations contacted or in attendance and, if provided, contact information;
 - (c) copies of the information that was provided or presented;
 - (d) detailed notes in tabular format and GIS files respecting issues and concerns raised during public engagement and First Nation and Métis information sharing activities undertaken while developing the FMP, including:
 - (i) interested party who raised the issue or concern;
 - (ii) forum or manner (verbal, written or spatial) in which the issue or concern was brought forward; and
 - (iii) response of the plan author, including how the issue or concern was addressed, or a statement of commitment made respecting follow-up actions to be undertaken for each issue or concern raised; and
 - (e) documentation of efforts made to encourage the engagement of:
 - (i) public stakeholders; and
 - (ii) First Nation and Métis communities to be involved in development of the FMP.
- (3) The public engagement reports and records shall be submitted to the Forest Service Branch for review prior to inclusion in the respective appendices of FMP Volume 1 and FMP Volume 3.

Information Sharing with First Nation and Métis Communities

1-11 Within the public engagement plan, the plan author shall clearly address the processes to be used when sharing information with First Nation and Métis communities regarding the forest management activities proposed during the development of the FMP that have the potential to adversely impact the exercise of:

- (a) Treaty and Aboriginal rights, such as the right to hunt, fish, and trap for food within the licence area; and
- (b) traditional uses of the lands and resources, such as the gathering of plants for food and medicinal purposes or carrying out of ceremonial and spiritual observances and practices within the licence area;

to which First Nations and Métis communities have right of access for these purposes.

Information Note

Refer to the [Proponent Handbook - Voluntary Engagement with First Nations and Métis Communities to Inform Government's Duty to Consult Process](#) for additional information.

Public Advisory Group

- 1-12** (1) The plan author shall:
- (a) appoint members to the PAG who:
 - (i) represent a broad range of resource uses and community values associated with the licence area; and
 - (ii) provide advice and input to the planning team; and
 - (b) document the name and affiliation of each group member, and the date of appointment to the PAG.
- (2) As scheduled by the planning team, the PAG shall contribute towards the formulation of:
- (a) desired forest conditions and benefits;
 - (b) specific VOITs in the performance framework for the development and subsequent implementation and assessment of the FMP;
 - (c) management objectives, strategies, and options;
 - (d) value-based resource inventories; and

- (e) materials to be presented at public engagement sessions and First Nation and Métis community information sharing sessions.

Public Advisory Group Terms of Reference

- 1-13** (1) The terms of reference shall describe the process that the PAG will follow while working with both the plan author and the planning team during the development and implementation of the FMP.
- (2) The PAG terms of reference shall contain the following:
- (a) goals, scope and role of the PAG in the development of the FMP;
 - (b) process for selecting members, member term of service, and a description of how a range and balance of interests will be maintained within the PAG;
 - (c) responsibilities of individual PAG members, including how each will obtain input from the constituency he or she represents and report back;
 - (d) procedural matters respecting the operation of the PAG, including:
 - (i) facilitation of discussions;
 - (ii) role of alternates;
 - (iii) attendance at public meetings;
 - (iv) circulation of information among PAG members;
 - (v) PAG member representation of their respective interest group;
 - (vi) declarations of conflicts of interest by individual PAG members, and how the PAG will address those declarations; and
 - (vii) dispute resolution;
 - (e) provision of background material and training required to assist PAG members in fulfilling their roles and responsibilities and to enhance their understanding of forest management planning; and
 - (f) a mechanism to amend the terms of reference.

Information Note

PAG Terms of References will be submitted as reference material only.

Information Note

The following illustrative overview (Figure 1) of the forest management plan development process is provided for reference purposes only.

FOREST MANAGEMENT PLAN DEVELOPMENT PROCESS

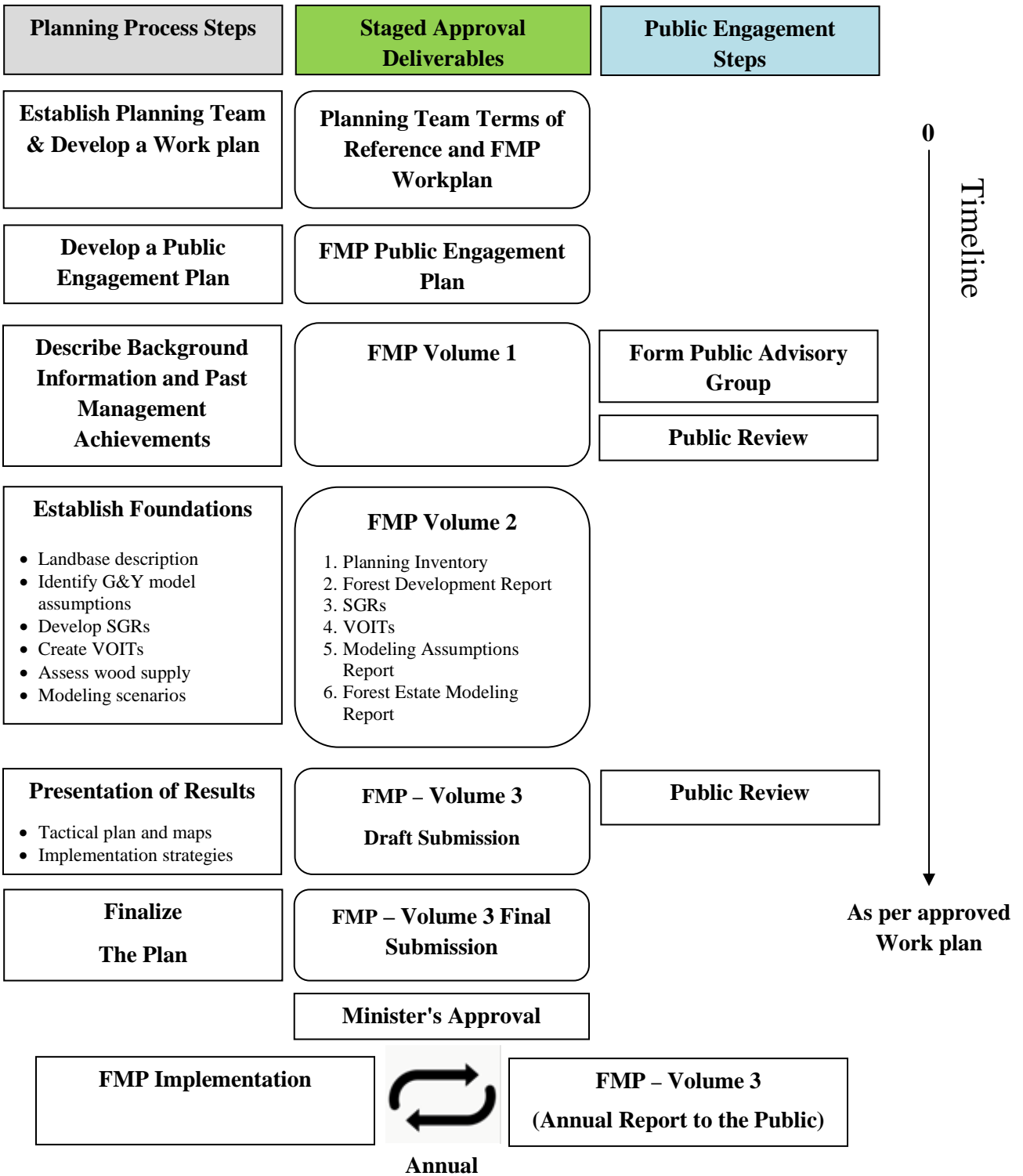


Figure 1. Forest Management Plan Development Process

FMP Volume 1 Requirements

- 1-14** (1) The plan author shall submit the FMP Volume 1 as a report in digital format with required GIS files for review and approval in accordance with the planning team terms of reference.
- (2) The FMP Volume 1 report shall contain:
- (a) title page;
 - (b) executive summary;
 - (c) table of contents; and
 - (d) approval page (signatory page).

Description of Licence Area

- 1-15** The plan author shall provide an overview of the licence area, including:
- (a) a historical review;
 - (b) a biophysical description;
 - (c) other land uses and values;
 - (d) a community and social profile;
 - (e) corporate profile of the licensee;
 - (f) forest management principles and certification;
 - (g) an economic profile;
 - (h) commitments in the forest management agreement (FMA) or term supply licence (TSL);
 - (i) forest management activities;
 - (j) independent operators activities;
 - (k) significant changes expected to affect wood supply and forest management practices; and
 - (l) the FMP registry.

Historical Review

- 1-16** The plan author shall provide a brief historical review of the licence area, describing:
- (a) tenure or timber harvesting rights that were in place prior to the award of the current licence;
 - (b) date of the original FMA or TSL and subsequent licence extensions or replacements;
 - (c) significant amendments to the licence document;
 - (d) changes to legal administrative boundaries of the licence area in the preceding planning period, including:
 - (i) significant changes to the initial licence area/boundary to date;
 - (ii) changes in gross hectares; and
 - (iii) status of the land withdrawal budget against each withdrawal period; and
 - (e) changes and accomplishments in forest management for the licence area, with particular focus on the preceding planning period, including:
 - (i) general harvest trends since the date of the original FMA or TSL licence, including the harvest trends of all independent operators;
 - (ii) access development;
 - (iii) silviculture;
 - (iv) inventory program;
 - (v) growth and yield program;
 - (vi) research program;
 - (vii) tree improvement;
 - (viii) work with stakeholders, communities and aboriginal groups;
 - (ix) development of manufacturing facilities supported by the licence area; and
 - (x) other similar topics.

Biophysical Description of the Licence Area

- 1-17** (1) The plan author shall describe:
- (a) climate;
 - (b) landforms;
 - (c) geology;
 - (d) soils;
 - (e) vegetation;
 - (f) watersheds of each ecoregion in the planning area;
 - (g) dominant ecosystems of each ecoregion; and
 - (h) ecodistrict characteristics, identifying unique features.
- (2) The plan author shall describe the land base within the boundaries of the licence area, including:
- (a) lands managed by the licensee;
 - (b) lands managed by the Crown and private dispositions;
 - (c) a summary of the land types within the licence area, that are:
 - (i) forested, including:
 - (A) productive forest; and
 - (B) non-productive forest, such as:
 - (I) treed wetland;
 - (II) open wetland;
 - (III) brush and alder; and
 - (IV) rock; and
 - (ii) non-forested, such as:
 - (A) water;
 - (B) other land;
 - (C) developed agricultural land;
 - (D) unclassified; and
 - (E) other; and
 - (iii) un-surveyed; and
 - (d) the total area by provincial forest development types and seral stage in the licence area.
- (3) The plan author shall describe, by seral stage for each provincial forest development type, fire, wind, insect, disease, and other natural disturbance events that occurred over the last seven years in the productive forest.
- (4) The natural disturbance event descriptions shall summarize total area disturbed by:
- (a) fire events greater than 100 hectares;
 - (b) other natural disturbance events greater than two hectares, including:
 - (i) insect by type;
 - (ii) disease by type; and
 - (iii) blowdown; and
 - (c) all disturbance types.
- (5) At the request of the plan author, the Forest Service Branch may provide digital datasets available to support the plan development, such as:
- (a) ecoregions and ecodistricts;
 - (b) local surface landform and parent material mode of deposition;
 - (c) soils;
 - (d) watersheds for the planning area; and
 - (e) natural disturbance events;
- to be included with the biophysical description of licence area.

Other Land Uses and Values

- 1-18** (1) The plan author shall provide descriptions and maps of the following:
- (a) known traditional land uses and values;
 - (b) trapping areas;
 - (c) recreational uses other than areas identified with a land disposition;
 - (d) visually sensitive areas;
 - (e) known species-at-risk occurrences and distribution of habitat;
 - (f) distribution of species-of-concern habitat;
 - (g) mineral dispositions;
 - (h) oil and gas leases;
 - (i) land dispositions including:
 - (i) agriculture;
 - (ii) wild rice;
 - (iii) recreational and residential;
 - (iv) commercial and industrial;
 - (v) traditional resource use; and
 - (vi) miscellaneous use; and
 - (j) linear developments including:
 - (i) roads;
 - (ii) railways;
 - (iii) utility lines;
 - (iv) pipelines;
 - (v) trails; and
 - (vi) other linear developments.
- (2) The plan author shall:
- (a) summarize the information about all datasets used in the description of the licence area in the appendix of FMP Volume 1; and
 - (b) for each dataset provided include metadata adhering to one of the internationally recognized geospatial metadata standards.

Community and Social Profile

- 1-19** The plan author shall provide data sources together with community and social profiles for each community, including First Nation and Métis communities that are in or adjacent to the licence area, describing:
- (a) community composition and respective dependencies upon timber and non-timber resources; and
 - (b) community demographic information.

Corporate Profile of the Licensee

- 1-20** The plan author shall provide a corporate profile that includes:
- (a) ownership;
 - (b) ownership structure;
 - (c) primary sectors in which the company or companies operate;
 - (d) type and capacity of forest products manufacturing facilities, and major markets served;
 - (e) the administrative structure for managing the licence area, and the location of associated offices; and
 - (f) how the timber resources associated with the licence relate to:
 - (i) the corporate business profile; and
 - (ii) the general wood flow for the related manufacturing facilities.

Forest Management Principles and Certification

1-21 The plan author shall describe the licensee's commitment to sustainable forest management, including the environmental management, forest certification and chain of custody certification systems to which the licensee subscribes, providing:

- (a) dates of certification; or
- (b) stage in the certification process.

Economic Profile

1-22 (1) The plan author shall describe direct and indirect economic contributions of the licensee to communities within the licence area and the province, including:

- (a) historical trends;
 - (b) current economic status; and
 - (c) anticipated future contributions.
- (2) The plan author shall summarize the economic activities of the licensee for all manufacturing facilities receiving timber resources and wood chips from the licence area during the current term of the FMP.
- (3) The plan author shall summarize the volume commitments by species and products to other parties in the licence area, as described in:
- (a) the licence;
 - (b) any memorandums of understanding;
 - (c) any letters of intent; and
 - (d) any other agreements.

Commitments in the Licence Agreement

1-23 The plan author shall summarize, using the most current information available:

- (a) past, current and anticipated wood volume requirements from the licence area for both the licensee and independent operators;
- (b) any plans or requirements to purchase residual wood volumes from other sources or from outside the licence area, in order to meet facility requirements; and
- (c) all wood volumes delivered to facilities owned or supplied by the licensee in Saskatchewan, as a result of one or more commitments in the licence, including wood volumes harvested from the licence area and sold to buyers outside of the licence area during the current term of the licence.

Forest Management Activities

1-24 The plan author shall summarize in tabular format and in GIS files, the forest management activities for the preceding 10 years, including:

- (a) operationally planned and actual harvest areas, by:
 - (i) seral stage;
 - (ii) provincial forest type; and
 - (iii) the resulting difference between planned and actual harvest areas;
- (b) area salvage harvested by disturbance type for all disturbances equal to or greater than 10 hectares for each:
 - (i) seral stage; and
 - (ii) provincial forest type;
- (c) renewal treatment type for harvested areas by:
 - (i) year of harvest; and
 - (ii) harvest block/polygon;
- (d) regeneration status sufficiently regenerated (SR), not sufficiently regenerated (NSR) and free to grow (FTG) of all harvested areas by harvest block/polygon;
- (e) NSR areas which are not currently the responsibility of the licensee; and

- (f) for class 1, 2 and 3 roads, the distance of:
 - (i) planned road construction;
 - (ii) actual road construction;
 - (iii) the resulting difference between planned and actual road construction;
 - (iv) planned road upgrades;
 - (v) actual road upgrades;
 - (vi) the resulting difference between planned and actual road upgrades;
 - (vii) planned road reclamation;
 - (viii) actual road reclamation; and
 - (ix) the resulting difference between planned and actual road reclamation.

Independent Operator Activities

1-25 The plan author shall summarize all harvest volume commitments made to independent operators and permit holders that have operated in the licence area during the preceding 10 years, by:

- (a) species;
- (b) provincial forest type; and
- (c) product.

Significant Changes Expected to Affect Wood Supply and Forest Management Practices

1-26 The plan author shall describe:

- (a) any anticipated changes that may have an effect upon the projected harvest levels or proposed forest management activities in the FMP, resulting from:
 - (i) market conditions;
 - (ii) facility reconfigurations;
 - (iii) limitations resulting from natural disturbances; and
 - (iv) altered operating conditions; and
- (b) the actions that have been taken or contemplated by the licensee, in preparation of the anticipated changes.

FMP Registry

1-27 (1) The plan author shall summarize in an appendix:

- (a) all previous environmental assessment, operational plan approval conditions or FMP registry items;
 - (b) progress made on all commitments presented throughout the FMP; and
 - (c) major changes that have been instituted that would negate requirements to carry forward prior commitments for the proposed plan.
- (2) The plan author shall prepare an annual report for the public (pursuant to section 1-54 (2)(b)), highlighting the progress and update associated with the registry items.

FMP Volume 2 Requirements

Deliverables

- 1-28** (1) The plan author shall prepare the following staged deliverables of the FMP Volume 2 in accordance with the planning team terms of reference:
- (a) Planning Inventory;
 - (b) Forest Development Report;
 - (c) Silviculture Ground Rules (SGRs);
 - (d) Values, Objectives, Indicators and Targets (VOITs);
 - (e) Modeling Assumptions Report; and
 - (f) Forest Estate Modeling Report.
- (2) The plan author shall submit the deliverables described in subsection (1) in digital format, individually, for review and approval by the Forest Service Branch.
- (3) Deliverables shall include:
- (a) title page;
 - (b) executive summary;
 - (c) table of contents; and
 - (d) approval page (signatory page).

Information Note

The approval of each staged deliverable under FMP Volume 2 does not preclude making revisions to a deliverable in the event that mistakes or technical errors that would result in a substantive change are detected or significant changes in circumstances occur.

Planning Inventory

- 1-29** The planning inventory shall serve as the spatial basis for the wood supply determination in support of the FMP and contain:
- (a) basic information, including:
 - (i) roads and crossings;
 - (ii) waterbodies, rivers, streams, and wetland areas;
 - (iii) riparian areas and other areas requiring special management;
 - (iv) land ownership;
 - (v) landscape level designations, such as ecoregions and watersheds; and
 - (vi) topography, such as slopes and aspects;
 - (b) planning units, established as discrete geographic areas used to administer the licence area for the term of the FMP, based on the following criteria:
 - (i) identified in collaboration with the planning team; and
 - (ii) not in excess of 500,000 hectares (gross area) unless otherwise approved;

Information Note

When appropriate, the licensee can designate another level of planning units to better address their business and operational needs. Likewise, for the purpose of setting and reporting on ecological targets, different planning unit boundaries may be defined as long as the above requirements are met.

- (c) a description of the forest vegetation from a forest vegetation inventory approved for use by the Forest Service Branch;

Information Note

Forest inventories provide a “snapshot” of the forest condition at a point in time and must be refreshed periodically to capture change and provide accurate inputs for forest management planning. In cases where the planning inventory relies on a vegetation inventory based on photos which are, on average, over 20 years old, the plan author is advised to contact the Forest Service to discuss options for developing the planning inventory.

- (d) current information respecting:
 - (i) disturbances resulting from:
 - (A) harvest activities;
 - (B) wildfire;
 - (C) wind events; and
 - (D) insect and disease infestations; and
 - (ii) renewal status of previously harvested blocks; and

Information Note

Wherever possible, treatments applied, regeneration assessment results, free-to-grow assessment results and survival survey results shall serve as data sources to update the planning inventory.

- (iii) non-timber values that can be spatially identified and which impact the FMP within the licence area, such as:
 - (A) riparian areas;
 - (B) visually sensitive areas;
 - (C) wildlife habitat; and
 - (D) any other spatial datasets deemed necessary through discussion with the planning team;
- (e) planned harvest areas for the remaining years of the current FMP; and
- (f) file specifics, such as:
 - (i) dataset name;
 - (ii) data format;
 - (iii) publication date, and where applicable, year of update;
 - (iv) originator;
 - (v) date obtained;
 - (vi) description of planning inventory attributes, including codes and definitions; and
 - (vii) any other relevant information.

Forest Development Report

- 1-30** (1) The forest development report shall describe:
- (a) all forest development types that are specific to the licence area;
 - (b) productive forest area occupied by each forest development type, in spatial and tabular format; and
 - (c) yield curves used to quantify current yield and project future yields.
- (2) The yield curves may be derived from:
- (a) provincial yield curves, with localization for average site index by development type;
 - (b) growth models meeting the following conditions:
 - (i) published in a reputable, peer reviewed, scientific publication;

- (ii) demonstrated applicability to, or calibrated for, the forest development types in the licence area; and
 - (iii) allowing for consideration of stand productivity and stand density; or
 - (c) empirical yields observed on measured sample plots, which:
 - (i) have been selected according to a sampling plan approved for use by the Forest Service Branch;
 - (ii) are located within the licence area or an ecologically similar region;
 - (iii) are spatially linked to the forest vegetation inventory; and
 - (iv) are stratified to account for the range of forest conditions on the license area.
- (3) For yield curves developed pursuant to section 1-30(2)(c), the following information must be provided:
 - (a) biometric equations (for example, taper and height-diameter models) and coefficients used to derive volume from tree and plot data;
 - (b) utilization specifications affecting the determination of net merchantable volume, which are consistent with the terms and conditions of the licence, including:
 - (i) stump height;
 - (ii) log length;
 - (iii) top diameters; and
 - (iv) any other information determining utilization, including method of conversion from gross to net volume;
 - (c) a report describing the yield modeling methods, and an evaluation of the statistical properties and error of the models;
 - (d) graphic and tabular yield forecasts of:
 - (i) volume per hectare; and
 - (ii) average independent tree volume (piece size); and
 - (e) a digital copy of the data from which yield curves were derived.
- (4) Where yield estimates are linked to silviculture treatments (such as site preparation, stocking density, stand tending, understory protection, site productivity improvement, genetic improvement of planting stock, and/or insect or disease management), then the plan author shall:
 - (a) reference the silviculture ground rules (SGR) developed in accordance with section 1-31; and
 - (b) provide a science-based rationale and supporting evidence for any yield forecasts for stands with silviculture treatment or other management intervention.

Silviculture Ground Rules

- 1-31** (1) The plan author shall develop SGRs for all forest development types actively managed in the licence area to serve as prescriptions for forest management activities.
- (2) The development and refinement of silviculture strategies and SGRs shall be based on silviculture information applicable to the licence area, including:
- (a) data from temporary and permanent sample plots;
 - (b) best practices applicable to the development type; and
 - (c) local knowledge, and the experience gained through past management practices and activities, including silviculture:
 - (i) treatments; and
 - (ii) successes and failures.
- (3) Silviculture strategies and any sources of information used in SGR development shall be documented in the SGR submission, considering the following:
- (a) if the plan author plans to utilize post-renewal yield curves that assume impacts on yield, with a transition rule that is different than 1:1 as compared to the pre-harvest

- yield curves, the plan author shall submit for approval to the Forest Service Branch the following:
- (i) a description of the methodology used to determine proposed treatment responses; and
 - (ii) a list of all transition rules, displaying the responses for each treatment; and
- (b) if the plan author is not seeking to obtain benefits of adopting managed stand treatments, and is adopting natural yield curves, no further submission of evidence is required.
- (4) Each respective SGR shall include:
- (a) SGR reference code (unique ID);
 - (b) forest transition between:
 - (i) existing forest condition, characterized by:
 - (A) area;
 - (B) yield; and
 - (C) forest development type; and
 - (ii) future forest condition, characterized by:
 - (A) percentage of future development type;
 - (B) yield group, with associated yield curve reference; and
 - (C) minimum and maximum rotation age; and
 - (c) treatment options, pertaining to:
 - (i) silvicultural system;
 - (ii) renewal approach respecting the percentage of area treated and linked to the future forest development type; and
 - (iii) regeneration prescriptions, including:
 - (A) planting densities;
 - (B) natural regeneration;
 - (C) site preparation;
 - (D) scarification;
 - (E) stand tending; or
 - (F) any other silviculture treatment used to achieve future forest development types.
- (5) The plan author shall select appropriate SGRs for all forest development types to achieve regeneration that will provide for the historical presence of softwoods in each cover species group (H, HS, SH and S) at maturity.
- (6) Within each respective SGR, the plan author shall set the targets that reflect the full range of softwood abundance in H, HS, SH and S cover species groups within:
- (a) the licence area; and
 - (b) each planning unit.

Values, Objectives, Indicators and Targets

- 1-32 (1) The plan author shall develop FMP specific VOITs as part of the requirements to conduct forest management activities on Crown forest lands in Saskatchewan.

Information Note

Table 1 illustrates the framework of values, objectives, indicators and targets (VOITs) to be utilized. This framework is based on the Canadian Council of Forest Ministers criteria and indicators ([CCFM Criteria and Indicators](#)) and the CAN/CSA Z809 standard (R2013) ([CSA Standard for Sustainable Forest Management](#)). In general, targets identified in the table are minimum requirements. The plan author may propose additional indicators and targets for each objective or propose more rigorous targets for the identified indicators.

- (2) The plan author shall compile each VOIT on individual fact sheets, describing the specific:
- (a) criterion;
 - (b) element;
 - (c) value;
 - (d) objective;
 - (e) indicator;
 - (f) target, specifying:
 - (i) desired condition;
 - (ii) current condition (baseline);
 - (iii) strategy to achieve target; and
 - (iv) timeframe to achieve target, including the milestones;
 - (g) data format, including the data source;
 - (h) reporting protocol, including:
 - (i) monitoring requirements;
 - (ii) reporting requirements; and
 - (iii) reporting frequency;
 - (i) assessment cycle;
 - (j) progress and achievement milestones; and
 - (k) acceptable variance.
- (3) The plan author shall prepare an annual report for the public, highlighting the achievements associated with the VOITs in accordance to section 1-54(2)(a).

Information Note

Unless otherwise stated in Table 1, VOITs are expected to be achieved at year 10. The intent of the assessment cycle is to ensure the licensee (through the annual reporting and monitoring of VOITs) is on track to achieve targets within the planning period.

Further details about the requirements of specific targets are identified in the appropriate section of the standard.

Table 1. Summary of Values, Objectives, Indicators and Targets (VOITs) Requirements

Criterion	Element	Value	Objective	Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
CCFM				Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
1.0 Biological Diversity	1.1 Ecosystem Diversity	1.1.1 Natural Range of Variation (NRV)	1.1.1.1 Conservation of the biological diversity of Saskatchewan's forests	1. Age class distribution	The licensee shall meet the approved age class profile target, by area, on the Managed Forest Land Base (MFLB)	Plan Author	Graph / GIS file	5 year	10 year
				2. Area of old and very old forest	The licensee shall ensure the combined area of old and very old forest by (approved) species grouping and planning unit meets or exceeds the provincial targets of 15% of the total MFLB; of this a minimum of 5% must be very old – unless otherwise approved by the Forest Service Branch	FMP Standard or Plan Author <i>for licensees proposing alternative approaches to natural forest patterns (NFP)</i>	Table/ Map/ GIS file of Reserve Areas	With tactical plan or revisions	10 year
				3. Size class distribution of harvest events	The licensee shall meet the approved harvest event size class distribution target (by per cent harvest area)	Plan Author	Table/ GIS file	Annual	10 year

Criterion	Element	Value	Objective						
CCFM				Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
1.0 Biological Diversity	1.1 Ecosystem Diversity	1.1.1 Natural Range of Variation (NRV)	1.1.1.1 Conservation of the biological diversity of Saskatchewan's forests	4. Tree retention after harvest (includes salvage operations)	The licensee shall meet the approved tree retention target by harvest event area Note: Exceptions made for forest health or other reasons shall be reported by the licensee	FMP Standard/ Plan Author <i>for licensees proposing alternative approaches to NFP</i>	Table/ Imagery/ Map/ GIS file	Annual	5 year
				5. The softwood component in hardwood stands is maintained	The licensee shall meet approved density (stems/hectare) targets, consistent with NRV, SGR and modeling assumptions, for White Spruce (wS) in H cover species group (CSG) at Establishment and Free-to- Grow (FTG)	Plan Author	Table/ Surveys/ Silviculture Treatments	Annual	5 year
				6. Relative abundance of CSGs are forecasted to be maintained at next rotation	The licensee shall ensure that aggregate post-harvest areas maintain CSG proportions (projected to rotation) that were present at time of harvest	FMP Standard	Table/ FTG Surveys/ GIS file	Annual	5 year
1.0 Biological Diversity	1.2 Species Diversity	1.2.1 Quantity and Quality of Forest Habitat	1.2.1.1 Maintain habitat for identified forest dwelling species	7. Current habitat availability for forest-dwelling species vs. predicted future (modeled) supply	Approved habitat supply and quality prediction targets, developed for at least 3 selected species, based on the Selected Management Strategy A minimum of one indicator species must be deemed a "Species At Risk" as per Species at Risk Act (SARA)	Plan Author	GIS file	Annual	5 year

Criterion	Element	Value	Objective	Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
CCFM									
1.0 Biological Diversity	1.3 Genetic Diversity	1.3.1 Natural Genetic Diversity	1.3.1.1 No loss of natural tree genetic diversity through forest management activities	8. Seedlings are from wild or improved seed sources in accordance with the terms of their licence and the Saskatchewan Environmental Code	Approved percentage of seedlings to be used from: a. Wild seed sources b. Improved seed lots	Plan Author	Table	Annual	5 year
2.0 Ecosystem Condition and Productivity	2.1 The stability, resilience and rates of biological production in forest ecosystem	2.1.1 Natural Ecosystem Processes	2.1.1.1 Maintain the stability, resilience and rates of biological production in forest ecosystem	9. Post-harvest areas are successfully regenerated	Post-harvest areas assessed as FTG are consistent with the SGRs and the Forest Regeneration Assessment Standard	FMP Standard/ Regeneration Assessment Standard	Table/ GIS file	Annual	5 year
				10. Change in the managed forest landbase in the licence through balancing permanent removals of productive landbase (e.g. roads, gravel pits) against area returned to the productive landbase (e.g. reclamation, reforestation)	Approved acceptable level of the managed forest landbase area (hectares) converted to other land uses by the licensee over the planning period, resultant from licensee operations	Plan Author	Table/ GIS file	Annual	5 year
				11. Net area disturbed by stand replacing natural events (fire, insect, disease and wind)	The licensee shall report the proportion of the net area impacted by stand replacing natural disturbance events over the planning period. The licensee shall initiate re-planning when this proportion exceeds the	Plan Author	Table/ GIS file	Annual	Annual

Criterion	Element	Value	Objective	Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
CCFM					approved re-planning threshold				
				12. Proportion of a natural disturbance event retained un-salvaged	The licensee shall ensure that $\geq 20\%$ of the area within a salvaged disturbance event be retained intact	FMP Standard	Table/ GIS file	Annual	5 year
				13. Yield curve suitability: measured by actual harvest volume (m^3/ha) compared to predicted volume	Actual harvest volumes (hardwood and softwood) are within 15% of the volume estimates predicted by the yield curves	FMP Standard	Table	5 year	5 year
				14. The utilization assumptions specified in the yield curves are consistent with the implemented utilization specifications	The licensee shall ensure that modeled utilization specifications are adhered to over the planning period.	FMP Standard	Table	Annual	5 year
				15. Operational adherence to the Tactical Plan	The licensee shall ensure that 85% of the harvested area on the licence within the term of the plan falls within the delineated spatial boundaries of the tactical plan	FMP Standard	Table/ GIS file	Annual	5 year
3.0 Soil and Water	3.1 Quantity and Quality of Soil and Water	3.1.1 Minimise loss of quantity or quality of soil and water	3.1.1.1 Maintain and/or enhance the quantity and quality of soil and water	16. Harvesting activities are in compliance in accordance with the terms of their licence, approved operating plan, the Saskatchewan	The licensee shall ensure that harvest blocks, road construction and reclamation and riparian areas comply with authorizations, the code and legislation	FMP Standard	Table/ Self-Inspection Reports	Annual	5 year

Criterion	Element	Value	Objective	Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
CCFM				Environmental Code and standards, and applicable federal and provincial legislation					
				17. Crossings are in compliance with the terms of their licence, approved operating plan, the Saskatchewan Environmental Code and standards, and applicable federal and provincial legislation	<ul style="list-style-type: none"> a. The licensee shall ensure that water course and wetland crossings installations and removals comply with authorizations, the code and legislation b. Licensee is responsible for developing, maintaining and following standard work procedures and/or protocols to ensure inspection, monitoring, reporting and maintenance of water course and wetland crossings comply with authorizations, the code and legislation 	FMP Standard	Table/ Self-Inspection Reports	Annual	5 year
4.0 Role in Global Ecological Cycle	4.1 Carbon Cycle	4.1.1 Productive Landbase	4.1.1.1 Mitigate the impact of the forest and forest activities on the productive landbase	18. Event Duration	The licensee shall ensure that harvest events are completed within 10 years or less (expressed annually and cumulatively as percent of event	FMP Standard	Table/ GIS file	Annual	5 year

Criterion	Element	Value	Objective	Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
CCFM									
					completed by area)				
5.0 Economic and Social Benefits	5.1 Economic Benefits	5.1.1 Sustainable economic benefits over FMP planning period	5.1.1.1 Maximize the economic benefits without compromising the productive capacity of forest ecosystem	19a. Utilization of harvest volume schedule (HVS)	Percentage of the approved HVS (hardwood, softwood and pulp) utilized in each 5-year period (expressed annually and cumulatively) is consistent with the terms of their licence, approved FMP and operating plan	FMP Standard	Table	Annual	5 year
5.0 Economic and Social Benefits	5.2 Social Benefits	5.2.1 Human life and property are protected from wildfire	5.2.1.1 Minimize injury, loss and damage caused by wildfire	19b. Harvest plans completed that are designed to lower wildfire risks to communities	The licensee shall implement treatments to assist in reducing wildfire risk to communities as per their approved strategy for wildfire management	FMP Standard <i>With assistance from Wildfire Management Branch</i>	Table/Map	Annual	5 year
5.0 Economic and Social Benefits	5.2 Distribution of Benefits	5.2.1 Fair Distribution of Benefits	5.2.1.1 To ensure that other forest uses are addressed	20. Stakeholder and Public Engagement	The licensee shall meet the approved target number of PAG meetings and other meeting forums to discuss FMP issues	Plan Author	Report/ Table/ Minutes	Annual	Annual
				21. Spatially identified non-timber resources and forest use activities	The licensee shall maintain a database and produce a map identifying non-timber resources and forest use activities	FMP Standard	Digital Map	Annual	Annual

Criterion	Element	Value	Objective	Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
CCFM									
5.0 Economic and Social Benefits	5.3 Sustainability of Benefits	5.3.1 No Loss of Benefits	5.3.1.1 Maintain or enhance benefits	22. Harvest operations are proportionally distributed across the FMA	The licensee shall ensure that approved area targets, by species grouping and planning unit for each 5-year period are achieved	Plan Author	Table/Map/GIS file	Annual	5 year
6.0 Society's Responsibility	6.1 Aboriginal and Treaty Rights	6.1.1 Aboriginal and Treaty Rights are respected in regard to planning and implementing forestry activities	6.1.1.1 To ensure that Aboriginal and Treaty Rights are respected while planning and implementing forestry activities	23. Aboriginal engagement	The licensee shall meet the approved target number of Aboriginal specific opportunities to provide input into FMA area plans and developments	Plan Author	Report/Table/Minutes	Annual	Annual
6.0 Society's Responsibility	6.2 Aboriginal Traditional Land Use and Forest Based Ecological Knowledge	6.2.1 Protection of Aboriginal traditional land use and forest based ecological knowledge	6.2.1.1 To avoid impacting culturally important sites	24. Spatially identified and operationally protected culturally significant Heritage and Aboriginal sites	The licensee shall ensure that known culturally significant Heritage and Aboriginal sites are spatially identified (in a database) and considered during planning of forest management operations	FMP Standard	Map	Annual	5 year
			6.2.1.2 To protect forest based traditional ecological knowledge of the Aboriginal communities	25. The plan author will propose an indicator and target to meet the intent of this objective (OPTIONAL)	The licensee shall meet the approved target	Plan Author	TBD	Annual	5 year
6.0 Society's Responsibility	6.3 Forest Community Well-being and Resilience	6.3.1 Sustainable Forest Communities	6.3.1.1 To contribute to the resiliency of communities	26. The plan author will propose an indicator and target to meet the intent of this objective	The licensee shall meet the approved target	Plan Author	TBD	Annual	5 year

Criterion	Element	Value	Objective	Indicator(s)	Target(s)	Target Source	Reporting Format	Reporting Frequency	Assessment Cycle
CCFM									
6.0 Society's Responsibility	6.4 Fair and Effective Decision Making	6.4.1 Involvement of Stakeholders in FMP Development and Implementation	6.4.1.1 Improve the engagement and information sharing of stakeholders in FMP development and implementation	27. Stakeholder engagement	The licensee shall ensure that it annually engages and informs the public, stakeholders, First Nations and Métis people on the implementation of the FMP	FMP Standard	Report/ Table/ Minutes	Annual	Annual

Modeling Assumptions Report

- 1-33** (1) The plan author shall prepare a report summarizing all the inputs and assumptions incorporated into the formulation of the forest estate model.
- (2) The modeling assumptions report shall include the following elements:
- (a) landbase definition, including planning units;
 - (b) landbase net-downs, including:
 - (i) non-FMA lands;
 - (ii) land dispositions;
 - (iii) Treaty Land Entitlements;
 - (iv) non-forested or non-productive lands;
 - (v) provincial parks;
 - (vi) designated or protected areas, representative areas and recreation sites;
 - (vii) subjective leave areas;
 - (viii) steep slopes;
 - (ix) non-commercial stands;
 - (x) riparian areas;
 - (xi) isolated areas and any other areas that do not contribute to the timber supply; and
 - (xii) net area;
 - (c) future permanent road reduction if the total area of road reduction is known;
 - (d) growth and yield assumption, including:
 - (i) utilization specifications;
 - (ii) procedures of compiling the yield curves, including the data source and the date of compilation;
 - (iii) description of yield curves;
 - (iv) any factors used to adjust yield curves, such as a cull reduction factor or a product downgrade factor; and
 - (v) long-run sustainable yield (LRSY) based on each set of yield curves;
 - (e) operability windows defined by a minimum harvest age and a minimum harvest volume;
 - (f) transition rules (i.e. matrix format) based on the SGRs;
 - (g) forest stand break-up ages by development types;
 - (h) all assumptions used in mitigating the risk of natural disturbances in modeling strategies, including re-planning threshold to address losses from natural disturbances;

Information Note

A re-planning threshold is defined as a proportion of net area disturbed by natural disturbances beyond which the projected sustainable timber targets and other management objectives over the planning horizon are no longer achievable, and which would trigger a re-planning process.

- (i) non-timber objectives and targets including:
 - (i) natural forest patterns pursuant to section 1-35, respecting:
 - (A) event size class distribution targets:
 - (I) a description of any harvest block size constraints employed; and
 - (II) the rationale for using the constraints in the model formulation;
 - (B) amount of area considered as:
 - (I) old and very old seral stage retention; and
 - (II) interior forest; and
 - (C) tree retention target, using one or more of the following methods to represent the associated reduction in treated area:

- (I) area transition;
- (II) yield curve deduction; or
- (III) harvest volume schedule deduction.
- (ii) wildlife habitat supply predictions for:
 - (A) species at risk; and
 - (B) other species; and
- (iii) visual constraints;
- (j) harvest flow objectives, including flow constraints; and
- (k) any other relevant targets.

Forest Estate Modeling Report

- 1-34** (1) The plan author shall prepare a forest estate modeling report, consistent with all modeling assumptions (see Section 1-33) describing:
- (a) the forest estate model formulation;
 - (b) modeling scenarios and results; and
 - (c) the selected management strategy.
- (2) The following model parameters and conditions shall be employed in the forest estate model:
- (a) 200-year planning horizon; and
 - (b) 40 five-year planning periods or 20 ten-year periods.
- (3) The wood supply objective for all modeling scenarios shall default to meeting short-term (20 years) average demand of:
- (a) all manufacturing facilities supplied by the licence area; and
 - (b) volume and product commitments to independent operators and other parties as specified in the FMA or TSL.
- (4) Where applicable, modeling scenarios shall reflect the licensee's:
- (a) responses to input received from the public engagement process; and
 - (b) approach to visual resource management areas, including those along numbered highways, recreational lakes, and any other areas identified through the public engagement process as being visually sensitive.
- (5) Baseline scenarios shall:
- (a) provide information regarding the maximum sustainable timber harvest levels over the planning horizon;
 - (b) be tested in accordance with baseline scenarios presented in Table 2;
 - (c) utilize a maximum fluctuation of 20% in the flow of timber, from period to period over the 200-year planning horizon;
 - (d) achieve NFP targets for landscape, including tree retention, and old and very old forest;
 - (e) utilize natural stand yield curves for the utilization specifications, as per the licence, for all commercial tree species; and
 - (f) not include any other constraints or variables.

Table 2. Provincial Baseline Scenarios

Scenario Number	Scenario	Modeling Objective	Flow Constraint	Utilization Specifications
1	Softwood	Maximize the total merchantable volumes harvested in all periods	20% variation	Top Diameter (inside bark): 8.0cm
2	Softwood	Maximize the total merchantable volumes harvested in all periods	20% variation	Top Diameter (inside bark): 10.0 cm
3	Softwood	Maximize the total merchantable volumes harvested in all periods	20% variation	Top Diameter (inside bark): 12.5 cm
4	Hardwood	Maximize the total merchantable volumes harvested in all periods	20% variation	Top Diameter (inside bark): 8.0 cm

- (6) The plan author shall develop candidate (licensee-specific) modeling scenarios proposing alternative management strategies, based on objectives, treatments and constraints that shall:
 - (a) respect objectives and targets established by the Forest Service Branch for those indicators where flexibility exists;
 - (b) make use of the preliminary forecasts to develop acceptable targets;
 - (c) identify and explore alternative flow constraints; and
 - (d) support or identify alternative management strategies.
- (7) The plan author shall submit:
 - (a) a list of proposed scenarios together with the differences between the proposed scenarios and the provincial baseline scenarios;
 - (b) an explanation of the process and considerations used to develop the scenarios;
 - (c) supporting preliminary forecasts; and
 - (d) additional scenario forecasts, if required by the Forest Service Branch.
- (8) The plan author shall conduct and document the results of sensitivity analyses that assist in the selection of a management strategy.
- (9) The plan author shall describe:
 - (a) how the risks of natural disturbances including fire, insect and disease, and wind, could impact or affect the timber supply; and
 - (b) how priorities were evaluated, considering the following criteria:
 - (i) productive vs. non-productive land;
 - (ii) mature and immature forest;
 - (iii) forest age;
 - (iv) volume;
 - (v) proximity to mill;
 - (vi) recent burns;
 - (vii) insect and disease infestations;
 - (viii) social considerations;

- (ix) road infrastructure; and
 - (x) forest economics.
- (10) The plan author shall identify uncertainty in model inputs that may significantly impact results, and explore the change in outcomes resulting from altering those inputs within a reasonable range of values.
- (11) The results of all baseline and candidate scenarios shall be presented in the forest estate modeling report.
- (12) The plan author shall provide the following model outputs, in the forest estate modeling report for the selected management strategy:
 - (a) harvest volume per product, as identified:
 - (i) by planning unit; and
 - (ii) in total;
 - (b) operable and total forest growing stock per planning period;
 - (c) area and volume lost to natural succession per planning period;
 - (d) area of each treatment type;
 - (e) the age class distribution for the following planning years:
 - (i) 0;
 - (ii) 10;
 - (iii) 20;
 - (iv) 50;
 - (v) 100; and
 - (vi) 200 years;
 - (f) an area summary per planning period, based on the following totals:
 - (i) operable areas for harvest;
 - (ii) areas classified as structure retention, if the area transition rule is used in the model; and
 - (iii) areas converted to future roads, if the road transition rule is used in the model;
 - (g) the average values per planning period, for:
 - (i) harvested stem volume, if piece size yield curves are applied in the model;
 - (ii) harvest age; and
 - (iii) harvest volume per hectare;
 - (h) old and very old forest retention targets;
 - (i) any indicators representing a VOIT identified in the assumptions report;
 - (j) spatial harvest sequence for the first 20 years that demonstrates the feasibility of the tactical plan;
 - (k) non-spatial harvest sequence for the remaining 180 years of the planning horizon; and
 - (l) a description of whether or not all targets are achieved as compared to that defined in the model formulation section.
- (13) The plan author shall identify a scenario to serve as the selected management strategy based on the results of the candidate scenarios, and provide a full explanation in support of the choice of the selected management strategy from the various modeling scenarios, including:
 - (a) details of the differences;
 - (b) deviations; and
 - (c) improvements relative to the selected management strategy.
- (14) The rationale for the selected management strategy shall include the following:
 - (a) evaluation of VOITs;
 - (b) effect of harvest levels chosen on additional or licensee-specific indicators;
 - (c) silviculture treatments; and
 - (d) design and use of planning units to achieve the desired:
 - (i) distribution of harvest; and
 - (ii) NFP targets.

- (15) The plan author shall submit all modeling scenarios including:
 - (a) model scenario formulation files; and
 - (b) any model thematic codes in tabular data sets, with separate fields for each theme to support review, interpretation and execution by the Forest Service Branch.
- (16) The model formulation shall be provided in digital format to Forest Service Branch.
- (17) The licensee shall maintain a copy of the model formulation associated with the selected management strategy as a means to re-examine and re-use the strategy, should the need arise.

Natural Forest Patterns (NFP)

- 1-35** (1) In order to define harvest event size targets (described in subsection (4) below) the current range of variation (CRV) of the natural disturbance size distribution for the licence area must be generated by the following process:
- (a) identify polygons by 10-year decadal age classes, for all decadal classes;
 - (b) combine adjacent polygons (stands) of the same decadal class into single larger patches, as illustrated in Figure 2, assuming that adjacent 10-year age class polygons share the same, or close to, disturbance event origin;

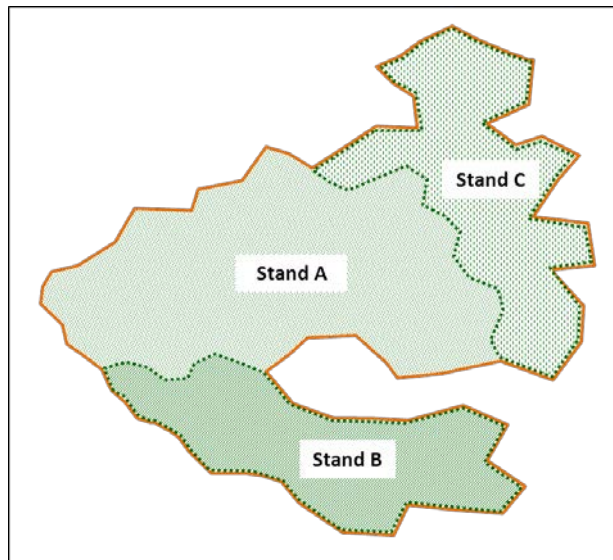


Figure 2. Combining Adjacent Polygons of the Same Decadal Class into a Single Decadal Patch

- (c) cluster decadal patches of common age, using GIS software, where they are within 500 metres of each other as illustrated in Figure 3, buffering decadal patches by 250 metres, dissolving individual patch boundaries, and then buffering to the inside by 250 metres to eliminate the expanded area around the perimeter, forming a decadal event; All undisturbed land (young, immature, mature, old and very old forest, together with wetlands, grasslands, water bodies, and other non-forested land) that falls within the boundaries of an event and is usually contiguous with the surrounding undisturbed forests, wetlands, or openings is referred to as the Matrix;

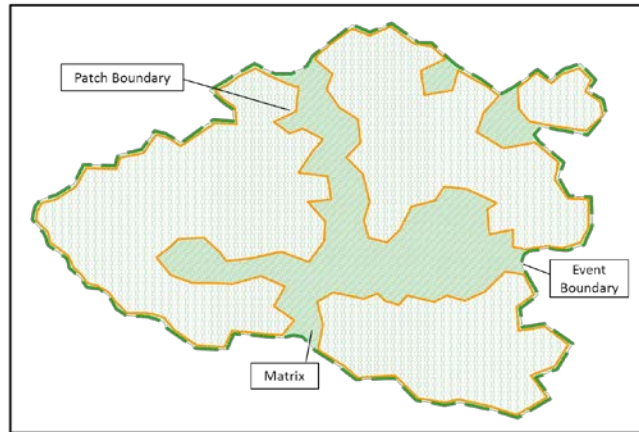


Figure 3. Clustering of Decadal Patches into a Common Decadal Event

- (d) prepare event size distribution summary (table and figures) of decadal disturbance events for the entire licence area, using the event size classes as defined in Table 3;

Table 3. Event Size Classes for the Purposes of Planning and Reporting

Event Size Classes	Size Range (hectares)
Small	0-100
Medium	101-1500
Large	1501-3500
Very Large	3500-8000
Extremely Large	> 8000

- (e) prepare a map, including associated tabular summary, of decadal disturbance event sizes for each decadal class for the licence area;
 - (f) create a weighted-average event size class distribution using all decadal classes; and
 - (g) prepare a pie chart of per cent of forested area by event size class.
- (2) The plan author shall define a harvest event size class distribution target for the first 20 years, using the natural disturbance size distribution determined in subsection (1).
 - (3) All harvest events shall be completed within ten years or less of commencement of harvesting activities.
 - (4) The plan author may propose alternative event durations at the event design stage, for large to extremely large events, as defined in Table 3.
 - (5) Seral stage definitions, as described in Table 4, shall form the basis for the targets respecting old and very old forest.

Table 4. Seral Stage Definitions

Cover Species Group	Seral Stage				
	<i>Young</i>	<i>Immature</i>	<i>Mature</i>	<i>Old</i>	<i>Very Old</i>
H and HS	0 – 20	21 – 70	71 – 90	91 – 110	> 110
S and SH (Jack pine)	0 – 20	21 – 70	71 – 90	91 – 110	> 110
S and SH (Spruce)	0 – 20	21 – 80	81 – 100	101 – 120	> 120

- (6) The targets for amount of old and very old forest shall consist of:
 - (a) combined total of old and very old forest area that meets or exceeds 15% of the forested landscape, with a minimum of 5% comprised of very old forests;
 - (b) proportional representation of approved species or, at a minimum, species groupings consisting of:
 - (i) hardwoods (H and HS);
 - (ii) softwood leading mixedwoods (SH);
 - (iii) softwoods (S) with jack pine, black spruce or tamarack leading; and
 - (iv) and softwoods (S) with white spruce or other species leading; and
 - (c) distribution within each planning unit.
- (7) In the context of subsection (6), the plan author may propose different seral stage targets, based on the natural range of variation of these attributes, with supporting technical and scientific rationale. Forest Service Branch will review proposed alternative approaches on technical and scientific merit and defensibility.

Information Note

Old and very old forest may include forest stands retained on, or within steep slopes, riparian areas, isolated stands and islands within harvest blocks and/or waterbodies.

- (8) Should old and very old forest targets be unachievable in any periods of the 200-year planning horizon due to existing CRV, the plan author shall identify areas of mature forest that will be deferred from harvest to achieve old and very old forest targets over the planning horizon.
- (9) If the plan author elects to use provincial Representative Areas Network (RAN) areas to achieve old and very old forest targets, the plan author shall:
 - (a) identify ecological reserves, representative area ecological reserves, or wilderness parks that fall within licence areas;
 - (b) calculate the proportion of old and very old forest targets to be achieved on the Managed Forest Landbase (MFLB) area; and
 - (c) demonstrate the achievement of targets in each planning unit.
- (10) If the proportion of old and very old forest falls below 15% of the gross area (licence area plus RAN areas) as a result of natural disturbances or management activities within the RAN areas, the plan author shall identify areas within the MFLB to offset the change in representation of old and very old forest.
- (11) A minimum of 20% of the old and very old forest stands in each species grouping within the FMA shall be in an interior forest condition for the term of the FMP.
- (12) Seral stage definitions and species groupings shall be the same as those described in Table 3.
- (13) (a) For the purpose of this subsection, ‘forest edge’ means any natural linear disruption in the forest cover greater than or equal to eight metres in width or a width specified for such features when assessing impacts on caribou habitat.
- (b) The plan author shall calculate the proportion of interior forest in accordance with the following process:
 - (i) determine the total area of old and very old stands and use GIS tools to dissolve these stands into contiguous polygons;
 - (ii) calculate the following ‘edge effect buffer zones’ for old and very old forest stands:
 - (A) 60 metres, where the adjacent area is non-forested or a forest stand that is less than 40 years old;

- (B) 30 metres, where the adjacent forest stand is greater than or equal to 40 years of age and younger than mature forest, as defined in Table 4; and
 - (C) zero metres where the adjacent stand is mature, old or very old forest;
 - (iii) deduct the 'edge effect buffer zones' from the old or very old forest polygons determined in subclause (b)(ii); and
 - (iv) assign species attributes back into old and very old forest polygons with interior forest attributes so species level targets can be assessed.
- (14) The plan author shall prepare and submit a digital map showing old and very old forests that are intended to be deferred for the duration of the FMP.
- (15) (a) The retention area of live representative tree residuals for each harvest event shall be a minimum of 9% of the total harvested area. Retention area is calculated over the harvest event duration.
- (b) The plan author may propose a different retention target, based on the natural range of variation of these attributes, with supporting technical and scientific rationale. Forest Service Branch will review proposed alternative approaches on technical and scientific merit and defensibility.
- (16) Tree retention shall meet the following criteria:
- (a) be comprised of the following arrangements (see Figure 4):
 - (i) insular retention that shall be:
 - (A) dispersed residuals composed of single trees or groups of up to four trees completely separated from the surrounding undisturbed forest, wetland, or openings by harvested ground.
 - (B) clump residuals, that shall be:
 - (I) a contiguous area of less than one hectare that includes more than four trees and is enclosed within a harvest area and separate from the surrounding undisturbed forests, wetlands, or openings; and
 - (II) diverse in size and shape; or
 - (C) island residuals, that shall be:
 - (I) a contiguous area of at least one hectare in size that is completely enclosed within a harvest area and is separate from the surrounding undisturbed forests, wetlands, or openings; and
 - (II) diverse in size and shape; and
 - (ii) proximal retention, defined as undisturbed trees within the harvest area which are connected to a portion of the harvest area boundary and further classified as one of the following:
 - (A) peninsular retention, that :
 - (I) shall be retained trees extending into the harvest area where the width of the residual edge that is common with the harvest area boundary is less than the residual length perpendicular to the harvest area boundary; and
 - (II) may extend across the harvest area and connect with the opposite harvest area boundary; or
 - (B) non-peninsular retention, that shall be:
 - (I) retained representative trees oriented along the harvest area boundary; and
 - (II) adjacent to non-merchantable or non-productive stands; and
 - (b) be representative of the range of the merchantable trees in the harvest event. This may also include trees growing on steep slopes within a harvest area or residual trees retained to protect understorey spruce; and
 - (c) fall within the landbase under the management of the licensee.

- (17) Pursuant to subclause (16)(a)(ii), proximal retention shall not exceed a maximum of 3% area of the total harvest event.

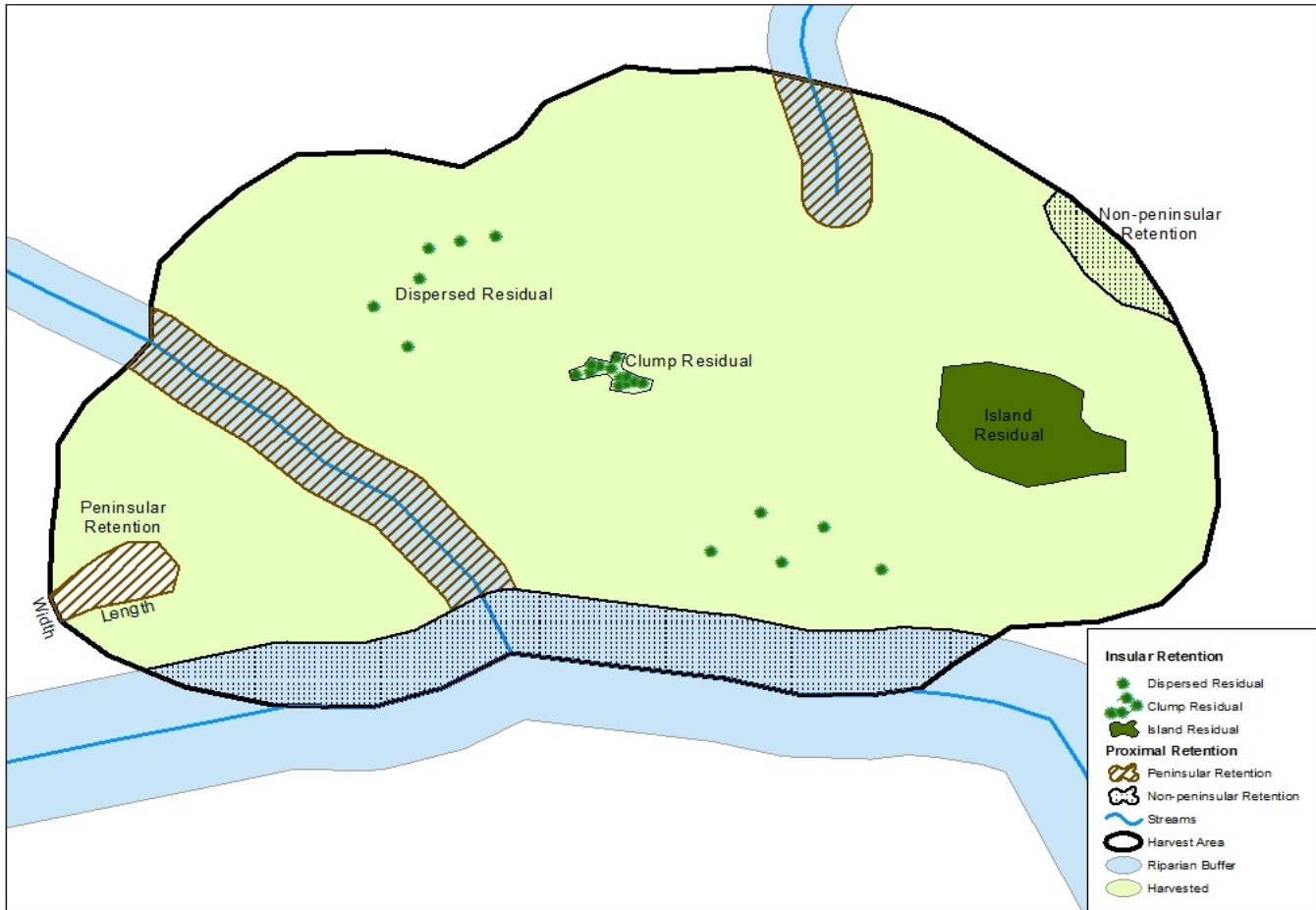


Figure 4. Tree Retention Composition and Distribution Example

- (18) Exceptions to the tree retention target, composition or distribution may be authorised for achievement of other objectives such as to address ecological considerations, forest health and social values. Such exceptions shall be reviewed by Forest Service Branch when assessing achievement of the targets for retention.

Information Note

Dead trees and snags are to be left standing during forest operations where not prohibited by *The Occupational Health and Safety Regulations, 1996*.

Salvage Harvesting

Information Note

Salvage areas are not used as modeling targets or constraints in the forest estate model. This section of the standard is applicable to forest operations, subsequent to the FMP approval.

- 1-36**
- (1) Salvage harvest activities of a natural disturbance event shall be planned to maintain a portion of the harvested area in an unsalvaged state.
 - (2) Salvage harvest events shall be subject to live tree retention criteria to promote ecological integrity of regenerating stands.
 - (3) A single contiguous area covering at least 20% of each disturbance event shall be identified and reserved from all harvesting activities, such that the area reserved from harvest shall be:
 - (a) free of roads, trails and skid trails; and
 - (b) be composed of tree species representative of merchantable timber burned or damaged.
 - (4) Burned or damaged timber shall be used where there are insufficient live residuals to meet tree retention targets.
 - (5) Residuals shall be left in clumps, islands and proximal retention, to address safety concerns.
 - (6) Upon approval by the Forest Service Branch, in an operating plan, alternate spatial arrangements may:
 - (a) be comprised of multiple discrete areas adding up to 20% of the disturbance area; and
 - (b) vary from tree residual targets, for reasons of forest health.
 - (7) All salvage activities shall occur within two operating years of the date on which the natural disturbance occurred, unless otherwise approved in an operating plan.

FMP Volume 3 Requirements

- 1-37** (1) The plan author shall submit FMP Volume 3 in a digital format, for review and approval by the minister.
- (2) The FMP Volume 3 shall contain:
- (a) title page;
 - (b) executive summary;
 - (c) table of contents;
 - (d) approval page (signatory page)
 - (e) tactical plan;
 - (f) tactical plan maps; and
 - (g) FMP implementation strategies.
- (3) Following approval of the FMP Volume 3, the plan author shall provide two hardcopies to the Forest Service Branch.

Tactical Plan

- 1-38** (1) The plan author shall develop a tactical plan to which the licensee shall adhere during the term of the FMP, unless revisions to the tactical plan are required in accordance with section 1-51.
- (2) Subject to subsection (3), the tactical plan shall:
- (a) consist of a report that includes tables and tactical area maps;
 - (b) serve as a template for the implementation of the FMP and future operating plans;
 - (c) identify tactical areas for harvest, in one of two 10-year periods such that blocking of the tactical plan is achieved through the manipulation and validation of the selected management strategy, enhanced by forest planners' knowledge of the land base;
 - (d) explain how the spatial sequence was created and how the sequence meets operability requirements;
 - (e) describe for each planning unit:
 - (i) significant landscape features;
 - (ii) planned road construction and reclamation for class 1 and 2 roads;
 - (iii) special values (e.g. cultural, ecological, non-timber, and recreational); and
 - (iv) spatial concerns identified through the public engagement process; and
 - (f) provide information regarding the integration of the independent operators harvest activities.
- (3) The tactical plan maps shall include:
- (a) an overview map of the entire FMA area showing:
 - (i) delineation of the deferral areas for old and very old forest retention pursuant to subsection 1-35 (13):
 - (ii) in the event that planning units where old and very old forest levels are below target levels, delineation of mature forest areas with desirable attributes including underrepresented tree species, interior forest, or connectivity, that will be deferred from harvest and allowed to develop into old forest; and
 - (iii) delineation of wildlife management areas (habitat modeled for the selected forest-dwelling species);
 - (b) a series of tactical plan maps for each planning unit showing the following features:
 - (i) planned tactical areas by ten year periods;
 - (ii) merchantable stands by forest development type or approved species grouping, from the net productive land base;

- (iii) lakes, streams and wetlands;
 - (iv) permanent and partial exclusions;
 - (v) other significant features including, but not limited to lodges, cabins, gravesites, and historic trails;
 - (vi) the planning unit boundary;
 - (vii) any relevant non-timber zones or boundaries, including:
 - (A) fire boundaries less than 10 years old;
 - (B) visually sensitive areas; and
 - (C) wildlife habitat and habitat features;
 - (viii) previously harvested areas and existing all-season roads (class 1, 2 and 3);
 - (ix) planned roads, including class 1 and 2 roads, by ten year periods; and
 - (x) backlog NSR areas; and
- (c) digital copies and associated geospatial data files.

Information Note

Tactical areas are a communication tool for better defining long-term operations to the public and stakeholders. Tactical areas define where forestry operations will be broadly clustered on the landscape over 10 year periods. While it is expected that all operations will occur within tactical areas during the term of the plan, minor deviations may be permitted as described in Section 1-51. The diagram below illustrates the relationship between tactical area and harvest events.



For the purpose of the tactical plan and setting targets for the distribution of harvest, approved species groupings are defined as per the following: hardwoods (H and HS); softwood-leading mixedwoods (SH); softwoods (S) with jack pine, black spruce or tamarack leading; and softwoods (S) with white spruce or other species leading.

FMP Implementation Strategies

1-39 The plan author shall provide a clear strategy on how the FMP will be implemented, including the purpose and role of the following:

- (a) resources;
- (b) information systems;
- (c) certification systems;
- (d) environmental management systems;
- (e) other supporting systems and programs;
- (f) annual performance tracking and reporting;
- (g) the PAG; and
- (h) future operating plans and their linkages to the tactical plan.

Appointment of Management Implementation Team (MIT)

- 1-40** (1) Upon receiving ministerial approval for the FMP, the licensee shall form a management implementation team consisting of representatives from:
- (a) the licensee;
 - (b) the Forest Service Branch, including the FMP coordinator, FMP analysts, and the area forester;
 - (c) other ministry branches; and
 - (d) the PAG.
- (2) The licensee or a representative shall be appointed as chair.

- 1-41** Upon approval of the FMP, the MIT shall develop terms of reference that shall:
- (a) describe the roles and responsibilities of the MIT members respecting:
 - (i) participation at public meetings;
 - (ii) review of operating plans for consistency with the tactical plan; and
 - (iii) assessment of progress made on FMP registry commitments and VOITs;
 - (b) establish an annual meeting schedule;
 - (c) identify a schedule for submission of annual reports; and
 - (d) be approved by Forest Service Branch.

FMP Registry

- 1-42** The licensee shall:
- (a) track and monitor progress made on all commitments established throughout the FMP;
 - (b) establish an implementation schedule for all commitments and subsequent action items;
 - (c) describe the manner of planned implementation of all action items; and
 - (d) summarize all previous FMP and environmental assessment approval conditions and the links to the respective VOITs.

Tactical Plan Linkage to Operating Plans

- 1-43** The plan implementation strategy shall describe linkages between the tactical plan and operating plans.

Strategy for Wildfire Management

Information Note

A Wildfire Prevention and Preparedness Best Management Practices document has been developed to assist industrial and commercial operators meet their legal obligations under *The Wildfire Act*. Refer to [Wildfire Prevention and Preparedness for Industrial and Commercial Operators](#).

Wildfire Management Branch has revised its priorities of values. Contact Wildfire Management Branch for further information or guidance during FMP preparation.

- 1-44** (1) The plan author shall summarize how he or she will work in conjunction with the ministry to meet provincial requirements for wildfire management within the licence area including:
- (a) identification of the licensee's commitments pertaining to wildfire management and the controls that shall be implemented over the term of the FMP;
 - (b) how wildfire management issues were considered and incorporated in the:
 - (i) development of VOITs;
 - (ii) formulation of the selected management strategy; and

- (iii) development of the tactical plan; and
- (c) fuel risk management for the licence area including:
 - (i) current wildfire risk levels for communities within the planning area;
 - (ii) application of treatments to assist in reducing wildfire risk to communities, and areas of high timber value and priority including, but not limited to:
 - (A) special slash management (i.e. pile and burn) considerations when harvesting within five kilometres of communities; and
 - (B) lower stocking standard or a forest stand conversion is part of the SGRs;
 - (iii) harvest scheduling related to the accelerated harvest of areas of high value timber in close proximity to identified high wildfire risk areas; and
 - (iv) working collaboratively with Wildfire Management Branch and key stakeholders to identify potential fuel breaks, fuel modification zones and fuel management techniques, for implementing:
 - (A) Community Wildfire Protection Plans to reduce wildfire risk to communities; and
 - (B) fuel treatments on the borders of protected areas to facilitate modified suppression within these areas.
- (2) The plan author shall identify the updated timber values and priorities where different provincial wildfire suppression efforts may be applied.

Strategy for Management of Forest Insect and Disease Disturbances

- 1-45** (1) The plan author shall describe how planning and operational activities will be implemented regarding the management of the following forest insect and disease species:
- (a) eastern spruce budworm (*Choristoneura fumiferana*);
 - (b) jack pine budworm (*Choristoneura pinus pinus*);
 - (c) forest tent caterpillar (*Malacosoma disstria*);
 - (d) large aspen tortrix (*Choristoneura conflictana*);
 - (e) terminal weevils including white pine weevil and lodgepole terminal weevil (*Pissodes strobi* and *Pissodes terminalis*);
 - (f) mountain pine beetle, including other bark beetles (*Dendroctonus ponderosae*);
 - (g) lodgepole pine dwarf mistletoe (*Arceuthobium americanum*);
 - (h) armillaria (*Armillaria spp.*);
 - (i) hardwood leaf and foliar diseases; and
 - (j) other forest insect and disease species or threats, as determined by Forest Service Branch.

Information Note

Refer to the [Forest Pest Fact Sheets](#) found on Publications Saskatchewan for further details on forest insect and disease management.

The plan author only needs to address the aforementioned forest insects and disease species anticipated to pose risks to FMP activities.

- (2) The plan author shall provide a brief summary on how forest insect and disease management issues were considered and addressed in the:
 - (a) development of the VOITs;
 - (b) formulation of the selected management strategy;
 - (c) development of the tactical plan; and
 - (d) management activities set out in subsequent operating plans.

Strategy for Management of Woodland Caribou Habitat

- 1-46** (1) The licensee shall develop and implement a management strategy using best available information to mitigate the negative effects of forest management activities on long-term caribou habitat supply, including but not limited to:
- (a) current age class of caribou habitat;
 - (b) future age class of caribou habitat based on proposed forest management activities;
 - (c) identification of opportunities where road reclamation, closures and/or decommissioning are practical;
 - (d) shorter event duration; and
 - (e) seasonality of activities.
- (2) The licensee's interim strategy for woodland caribou shall be in effect until the provincial range planning process is concluded and released in accordance with SARA requirements.
- (3) If needed, the licensee shall adapt their forest management plan, to meet objectives and targets of the corresponding Woodland Caribou Range Plan within the licence area.

Management Challenges on the Licence Area

- 1-47** (1) The plan author shall identify the management challenges associated with implementing the FMP, including but not limited to:
- (a) administration;
 - (b) achievement of VOITs;
 - (c) non-forest industry related resource-based interests;
 - (d) community interests;
 - (e) Aboriginal interests;
 - (f) independent operators interests; and
 - (g) natural disturbances.
- (2) The plan author shall propose management actions within their control, mitigation or adaptations measures that address each of the identified management challenges.

Vulnerability Assessment to Address Climate Change

- 1-48** To reduce the negative influences of climate change, the plan author shall:
- (a) identify existing and potential impacts of major stressors on forest management activities and ecosystem services including but not limited to:
 - (i) wildfire;
 - (ii) invasive species;
 - (iii) extreme weather events;
 - (iv) temperature;
 - (v) precipitation; and
 - (vi) reforestation;
 - (b) assess the potential impact of the stressors on achieving the targets associated with the VOITs identified in the plan;
 - (c) develop adaptation and mitigation strategies to minimize potential negative impacts;
 - (d) monitor predicted impacts and identify a threshold for implementation of strategies; and
 - (e) collaborate with the ministry and other partners to establish field trials as appropriate with respect to mitigating and adapting to climate change impacts with the intent of developing best practices.

Integration of Forest Management Activities with Non-timber Uses

- 1-49** (1) The plan author shall describe the approaches and processes that will be used to integrate forest management activities with non-timber values and uses in the licence area.
- (2) The plan author shall describe how non-timber values and resources will be incorporated into the operating plans.
- (3) The plan author shall describe how the [Saskatchewan Activity Restriction Guidelines for Sensitive Species](#) will be used to avoid key habitats of sensitive species during sensitive periods.
- (4) Non-timber values and resources may include, but are not limited to:
- (a) high-value non-timber forest products;
 - (b) visual resources;
 - (c) livestock grazing;
 - (d) recreation areas;
 - (e) watersheds;
 - (f) lakes, streams and wetlands;
 - (g) identified wildlife habitat including threatened and endangered species, and species at risk, pursuant to SARA;
 - (h) archeological, cultural and heritage resources;
 - (i) traditional use areas;
 - (j) outfitting and tourism;
 - (k) trapping;
 - (l) fishing;
 - (m) hunting;
 - (n) oil and gas exploration;
 - (o) oil and gas development;
 - (p) mineral exploration;
 - (q) mining; and
 - (r) agriculture.
- (5) For licence areas where higher-level plans including land use plans or caribou range plan have not been prepared or approved, the FMP work plan shall outline a process to identify strategic land and resource management issues.
- (6) The plan author shall include a reference to relevant higher-level plans and include a description of the manner in which proposed FMP strategies and processes will adopt or link to the plans.
- (7) The plan author shall describe the measures which will be undertaken to address potential management issues relating to the conservation of non-timber values and resources on the licence area including:
- (a) forest certification processes;
 - (b) environmental management systems;
 - (c) standard operating procedures; and
 - (d) arrangements with stakeholder groups describing:
 - (i) courses of action which the plan author has agreed to with specific stakeholder groups; and
 - (ii) how the arrangements may benefit the implementation of the FMP and the management of the non-timber values and resources.

Amendments to the FMP

- 1-50** (1) Amendments to the FMP shall be submitted to Forest Service Branch for approval when:
- (a) deviations to the tactical plan are required; or
 - (b) the licensee seeks approval to deviate from approved utilization specifications.

- (2) When submitting an amendment for approval, supporting information and maps shall be provided in a manner and format consistent with this standard.
- (3) The plan author shall maintain an amendment log including a record of associated public engagement activities for the duration of the FMP.

Revisions to the Tactical Plan

- 1-51** (1) In cases where deviation from the tactical plan is necessary, the licensee shall discuss the implications of the deviations to the VOITS and other sustainability indicators, and periodic timber supply.
- (2) If the licensee proposes deviations that are:
 - (a) within the acceptable allowance of up to 15% by harvested area on the licence within the term of the plan, revisions shall be submitted for approval in an operating plan; or
 - (b) in excess of the deviation allowance of 15% by harvested area on the licence within the term of the plan, the tactical plan shall be revised in accordance with subsection (3), unless otherwise approved.

Information Note

Deviations resulting from independent operations will not be held against the licensee's targets.

- (3) When revisions to the tactical plan are required as per section 1-51(2)(b), the licensee shall:
 - (a) provide a rationale;
 - (b) identify in a table and maps:
 - (i) blocks that were not affected by the revision and maintained in the amended plan;
 - (ii) blocks that have been harvested since the implementation of the tactical plan; and
 - (iii) previously unidentified blocks from:
 - (A) salvage operations;
 - (B) incidental harvesting; and
 - (C) renewal operations;
 - (c) describe all variations from the original tactical plan with respect to:
 - (i) primary road development;
 - (ii) road access management;
 - (iii) recreation features;
 - (iv) wildfire risk management for the protection of communities;
 - (v) effects on watersheds and riparian areas;
 - (vi) wildlife including species at risk;
 - (vii) forest health;
 - (viii) visual concerns;
 - (ix) relationship to approved higher-level plans;
 - (x) interaction with other industrial users;
 - (xi) integration of the independent operators;
 - (xii) harvest scheduling;
 - (xiii) silviculture activities; and
 - (xiv) other, as deemed applicable by the licensee or the Forest Service Branch;
 - (d) provide a record of public engagement sessions and First Nation and Métis community information sessions conducted, including feedback received and how the amended tactical plan has addressed concerns raised; and

- (e) provide replacement tables, maps and GIS files for all affected planning units.
- (4) The current tactical plan shall be archived and replaced with the approved revised tactical plan.

Deviation to Utilization Specifications

1-52 When the licensee seeks to deviate from the approved utilization specifications, they shall seek approval for the deviation from the Forest Service Branch.

Catastrophic Natural Disturbance Events

1-53 If a catastrophic event or series of natural disturbance events causes the re-planning threshold to be exceeded, as specified in the modelling assumptions report, the licensee shall:

- (a) update the current forest condition;
- (b) update the planning inventory;
- (c) update the forest estate model;
- (d) select an updated management strategy; and
- (e) revise the tactical plan.

FMP Volume 4 – Annual Reporting to the Public

- 1-54** (1) The licensee shall engage the MIT when establishing an outline of the process to be used for preparation and digital submission, the details of the annual report template and the submission date for the draft and final versions of the annual report.
- (2) The annual report shall address the following FMP content areas:
- (a) VOITs tracking and monitoring including:
 - (i) a cumulative assessment of targets from the start of the FMP;
 - (ii) a description of the mechanisms employed in the monitoring process, which may include:
 - (A) environmental management systems (EMS);
 - (B) forest certification processes;
 - (C) GIS and associated digital data;
 - (D) databases for attributes associated with the indicators;
 - (E) public consultation records, including an updated issues and concerns table; and
 - (F) independent forest audit records;
 - (iii) an assessment of progress for the targets set through VOITs;
 - (iv) an explanation of any deviations from a target, with reasons for, and analysis supporting the deviations; and
 - (v) submission of digital data supporting the annual report, including GIS files, tables, databases and maps;
 - (b) the FMP registry including progress and updates on the status of each approval condition and commitment against the provided timeframe;
 - (c) silvicultural effectiveness monitoring and the progress of renewal activities including:
 - (i) status of regenerated areas;
 - (ii) areas where strategies and implementation techniques are inadequate or need improvement;
 - (iii) assessment of whether or not regeneration polygons are on the yield trajectories that are identified in the associated SGR;
 - (iv) assumptions in the forest estate modeling;
 - (v) a renewal tracking log with:
 - (A) year of harvest;
 - (B) areas harvested;
 - (C) a summary of projected SGRs matching the inputs to the forest estate model, inclusive of blocks where silviculture is underway and inventory labels are not yet available;
 - (D) pre-harvest cover species group;
 - (E) a spatially reported renewal status of SR or NSR areas including:
 - (I) a strategy to convert NSR into SR with anticipated timelines; and
 - (II) areas converted from NSR to SR; and
 - (F) post-harvest cover species group and methodology used to determine cover species group designation; and
 - (vi) the rationale for any deviations from SGRs that support the assumptions in the forest estate modeling; and
 - (d) operational implementation of the FMP including:
 - (i) reporting of non-compliances; and
 - (ii) associated actions taken to address non-compliances.

Glossary of Terms

Current Range of Variation (CRV)

This term describes the range of conditions currently occurring in an ecosystem. Current range of variation is the assessed present state of the forest, encompassing the influence of natural disturbance (wildfire, windstorms, insect outbreaks) and the presence of human activities (e.g. harvesting and other activities). Variation of CRV from NRV is dependent upon the scale of natural and anthropogenic disturbance and duration of this disturbance on the land base.

Disturbance Event

Disturbance events are typically those that occurred naturally, such as wildfires (including human-caused), wind, flooding, insect outbreaks, disease, or other natural causes. Disturbance events may comprise one or more patches, combined into an event of single causative origin.

Harvest Event

Harvesting events are planned harvest activities comprising one or more harvest blocks, together with undisturbed forest within and between harvest blocks. They are further defined as the gross area described by a collection of proposed harvest blocks that are no more than 500 metres from each other and harvested within a 10-year period. Harvest blocks beyond 500 metres from each other are considered to be in separate events.

Managed Forest Land Base

This defines the crown forested subset of the gross licence area (excluding permanent exclusions) contributing toward meeting both timber and non-timber targets.

Natural Range of Variation (NRV)

The ecological conditions, and the spatial and temporal variation in these conditions, that are relatively unaffected by people, within a period of time and geographical area appropriate to an expressed goal.

List of Abbreviations and Acronyms

CRV	current range of variation	NRV	natural range of variation
CSG	cover species group	NSR	not sufficiently regenerated
EMS	environmental management system	PAG	public advisory group
FMA	forest management agreement	RAN	Representative Areas Network
FMP	forest management plan	S	softwood
FTG	free to grow	SARA	<i>Species At Risk Act</i>
H	hardwood	SGR	silviculture ground rules
HS	mixedwood – hardwood leading	SH	mixedwood – softwood leading
HVS	harvest volume schedule	SR	sufficiently regenerated
LRSY	long-run sustainable yield	TSL	term supply licence
MFLB	managed forest land base	VOIT	values, objectives, indicators and targets
MIT	management implementation team		
NFP	natural forest pattern		