Forest Management Planning
AAFMP Study Session

Ryan Spooner

February 25, 2017
Outline

• Applicable readings
• Levels of Forest Management Planning
• Components of an FMP
• Operating Ground Rules
• Performance Monitoring
• Professional Validation
Applicable Readings
Applicable Readings

Understand the purpose and scope of the following documents:

• Alberta Forest Management Planning Standard

• Forest Management Agreements

• Policy on Consultation with First Nations on Land and Natural Resource Management

• CSA Z809-02: Sustainable Forest Management: Requirements and Guidance

CAN/CSA-Z809-2002 Sustainable Forest Management: Requirements and Guidance Document

The focus of the standard is to ensure a strong and direct connection between:

- The desired future forest condition and a spatially planned harvest sequence, and
- Predictions of forest growth and yield and actual stand level performance
CSA Z809-02

**Why CSA?**

- Credible Planning Framework
- Canadian Council of Forest Ministers (CCFM) Criteria and Indicators
- High degree of public involvement
- First Nations involvement
- Collaborative process for decisions
- Requirement to monitor planned versus actual outcomes through VOITs
- Continual improvement
  - Plan, Do, Check, Improve
Levels of Forest Management Planning

- Land-use Framework
  - Regional Plans
- Sub-Regional Plans
  - Forest Management Plans (FMP)
- General Development Plans (GDP)
- Forest Harvest Plans (FHP)
- Annual Operating Plans (AOP)
Forest Management Planning Hierarchy

Strategic
- Forest Management Plan (FMP)
  - Level 3 Consultation

Operational
- General Development Plan (GDP)
  - Level 2 Consultation
- Forest Harvest Plan (FHP)
- Annual Operating Plan (AOP)
FMP Basics

• Completed every 10 years
• 20 year SHS
• 200 Year planning horizon
  – Future forest conditions are forecasted
• Manage forest vegetation and minimize impacts of forest operations on other values and users
• Plan Development Team (PDT), comprised of industry and government members
Components of a Forest Management Plan
Key Components of an FMP

- Terms of Reference
- Public Input Plan
- First Nations Consultation Plan
- Landscape Assessment
- VOITs
- Yield Curves
- Landbase Classification
- Preferred Forest Management Scenario
- Forecasting
- Spatial Harvest Sequence
- Non-Timber Assessments

Timber Supply Analysis
Terms of Reference

- Plan to do the plan
- Developed by FMA holder with advice from PDT
- Follows CSA Z809-02 “Basic Operating Rules”
Public Participation Process

- Company lead process
- Broad representation of local public, interests groups
- Public Participation Group formed to provide advice to the PDT
- Public Involvement Plan identifies means to review components of proposed FMP
First Nations Consultation

• Duty to consult if there’s a potential to adversely affect Treaty Rights and Traditional Uses
  • Procedural aspects of consultation is delegated to the FMA holder by Alberta
  • Must follow Alberta’s First Nations Consultation Policy
  • Consultation Plan that is reviewed for approval by the Region
  • Must follow plan and receive “Consultation Adequacy” prior to FMP approval
Landscape Assessment

• Provides an inventory of resource and administrative information on the Defined Forest Area

• Includes:
  – Administrative boundaries
  – Physical conditions
  – Forest landscape pattern, structure and disturbance
  – Landscape fire assessment
  – Land use activities
Net Landbase

• Landbase classification is done to determine the portion of the landbase that is available for harvesting (the net landbase)
  – Also called:
    • Contributing landbase
    • Active landbase
• Requires agreement in principle prior to use in FMP
Net Landbase

• Areas removed:
  – Water (lakes, rivers)
  – Areas where harvesting is prohibited
    • Recreation areas, wildlife reserves, natural areas, ecological reserves, certain land-use dispositions
  – Non-forested areas (natural and anthropogenic)
  – Riparian buffers
  – Inoperable areas (steep slopes, unstable soils)
  – Subjective deletions (e.g. unproductive sites such as slow growing black spruce and larch)
Net Landbase Classification Process

- FMA GROSS AREA
  - Water (Lakes & Rivers)
  - Land Use Dispositions
- FMA GROSS LAND AREA
  - Water Course Buffers
  - Non-Forested Human Disturbances
  - Non-Forested Natural Features
  - First Nation Specific Sites
- FMA NET FORESTED AREA
  - Low Productivity Stands
- FMA NET LANDBASE

Example Area:
Yield Estimation

- **Yield Curves:**
  - Groups similar stand types into yield strata
  - Volume estimates are generated for each yield strata to predict the volume at each age class
  - Average piece size also a requirement
  - Requires agreement in principle prior to use in FMP

![Graph showing volume trend over age class](image-url)
Management Considerations

Policy Considerations:
• Planning horizon (i.e. 200 years)
• Even-flow timber supply for the entire planning horizon
• Growing stock constraint (must be non-declining for the last 1/3 of the horizon average)

Operational Considerations:
• Minimum harvest age
• Block size
• Tree utilization

Economic Considerations:
• Haul distance
• Piece size
• Harvest profile
VOITs

Values, Objectives, Indicators and Targets (VOITs)

- **Value** — a Defined Forest Area characteristic, component, or quality considered by an interested party to be important in relation to a CSA SFM element or other locally identified element

- **Objective** — a broad statement describing a desired future state or condition of a value

- **Indicator** — a variable that measures or describes the state or condition of a value

- **Target** — a specific statement describing a desired future state or condition of an indicator. Targets should be clearly defined, time limited, and quantified
VOITs

• Example:

- **Conservation of Biodiversity**
  - **Ecosystem Diversity**
  - **Species Diversity**
  - **Genetic Diversity**
  - **Protected Areas**

- **CCFM Criterion**
- **CSA Elements**
- **Values**
  - **Landscape Scale Diversity**
  - **Stand Scale Diversity**
- **Objective**
- **Indicator**
- **Target**
  - Retain full range of cover types and seral stages
  - Area of old, mature, and young forest by cover class
  - Targets for each seral stage to be set over the 200 year planning horizon
Preferred Forest Management Strategy

• Scenario development designed to test sensitivity of various inputs and constraints

• Uses timber supply modeling to represent scenarios

• Key outputs are:
  • SHS (and annual allowable cut)
  • Future forest conditions
Spatial Harvest Sequence

- Is the spatial representation of the forest polygons selected for harvest over the next 20 years to ensure the sustainable annual allowable harvest level is achieved
- Incorporates the environmental, operational and economic considerations/assumptions
- ensures the desired outcomes are realized if followed
- The requirement is to follow the spatial harvest sequence to within 20% variance
Future Forest Condition

• **Why Forecast Future Forest Conditions?** To determine the impacts of the PFMS on non-timber values
  – Coarse filter
    • cover types, patch size, old interior, seral stages
  – Fine filter
    • e.g. grizzly bear, barred owl, marten
  – FireSmart & Wildfire threat
    • identification of high risk stands to place into the SHS within the first 5 to 10 years
  – Watershed
    • assess potential impacts of the planned harvest on watershed values of concern
Inputs
- Net Landbase
- Yield Curves
- Management Considerations
- Values, Objectives, Indicators and Targets

Timber Supply Modeling

PFMS Outputs
- Spatial Harvest Sequence
- Future Forest Condition
Operating Ground Rules

• Once a FMP is approved, the company ground rules are opened for discussion and potential revision

• Why?
  – operational tactics used by the company during harvest and reforestation activities need to aligned with the higher-level values and objectives stated in the FMP
Growth and Yield Plan
Growth and Yield Plan

- Provides data for monitoring and model development
- Validation of yield estimates tied to the annual allowable cut
- Addresses both natural and managed stands
- PSP and TSP data collection programs
  - For the next FMP and other purposes
Performance Monitoring
**Performance Monitoring**

- **Why Monitor Performance?**
- To evaluate whether or not the company did what it said it would do in the FMP
  - Most important to monitor targets that have an impact on the long-term sustainability of the forest
- We must constantly evaluate the performance and impacts to make sure the decisions made at the time of planning are still valid
- Timely identification of variance will enable effective corrective action to be taken
Professional Validation
Professional Validation

• RPF or RPFT (RFPs) must submit work as outlined in Annex 2 of the Planning Standard (e.g. FMP, GDP, etc.)
  – No sign-off required if less than 30,000 m3/yr
• Validated work contains a signature, professional title, and registration #
• Why?
  – Assurance that work is:
    • Completed by qualified professionals
    • Accurate
    • Prepared with due diligence
  – Complete and accurate “auditable” records are kept
Professional Validation

• Responsibility and Accountability
• Industry RFPs
  – Expected to keep records
  – Work they oversee is complete and accurate before submission
• Government RFPs
  – Complete accurate and timely reviews
  – Direction or corrective action
• Accountability is not transferred
Questions?

Thank You

RYAN SPOONER, R.P.F.
MANAGER, FOREST RESOURCE ANALYSIS GROUP

SILVACOM LTD.
(a): 3912-91 Street NW Edmonton, Alberta, Canada T6E 5K7
(e): ryan.spooner@silvacom.com   (w): www.silvacom.com