

Detailed Forest Management Plan Approval Decision



Photo: courtesy of M. Lecoure, Tolko Industries Ltd.

**Tolko Industries Ltd (High Level Lumber Division)
and Footner Forest Products Ltd.
High Level, Alberta**

**Forest Management Agreement
#0200004**



Detailed Forest Management Plan Approval Decision

**Tolko Industries Ltd (High Level Lumber Division)
and Footner Forest Products Ltd.**

**Forest Management Agreement
#0200004**

**Date: January 26, 2004
Effective: May 1, 2003**

**Approved by: Original signed by
D. (Doug) A. Sklar, RPF
Executive Director
Forest Management Branch
Public Lands and Forests Division**

Executive Summary

This Approval Decision documents the facts considered, assumptions made and conditions imposed by the Executive Director regarding the Tolko Industries Ltd., High Level Lumber Division (Tolko) and Footner Forest Products Ltd. (Footner) Detailed Forest Management Plan submitted for Sustainable Resource Development (SRD) approval on October 10, 2003.

SRD commends Tolko and Footner for developing a DFMP that meets the requirements of The Interim Forest Management Planning Manual, Guidelines to Plan Development, April 1998 and the Supplemental Guidelines – Timber Supply Analysis – Documentation of Results. The DFMP reflects the principles of sustainable forest management and provides ecological, economic and social opportunities for the benefit of Albertans.

The companies' message is consistent throughout the document providing a rationale for the management approach. Through this plan, Tolko and Footner have demonstrated their willingness and propensity for dealing with issues brought forward in the planning process.

The Detailed Forest Management Plan for Tolko and Footner submitted October 10, 2003 is approved subject to the Approval Conditions and the Annual Allowable Cuts presented in this Approval Decision.

Approval Condition 1 - Growth and Yield

- i. Tolko and Footner shall develop a Growth and Yield Program and have it approved by the Senior Manager, Resource Analysis Section by April 1, 2004. The plan shall be designed to provide the data necessary to validate the yields forecasted by all yield functions and strata used in the Timber Supply Analysis (TSA). The companies shall address the data needs for the Enhanced Forest Management Plan that will be developed for inclusion in the next DFMP and design the plan with enough flexibility to incorporate these future requirements.*
- ii. Both permanent and temporary sample plots must be established for all yield strata as defined in (i) above. This approach will build separate data sets to be used for independent model construction and validation.*
- iii. Local regeneration survey data must be incorporated into the Growth and Yield Program. This data shall be collected and submitted as defined in the current versions of the Alberta Regeneration Survey Manual and the ARIS Industry Operations Manual. Raw regeneration survey plot data collected by all forest operators shall be submitted in a format acceptable to SRD.*
- iv. The plot establishment schedule shall emphasize the collection of useful amounts of post-harvest data in time to be used in the next DFMP.*
- v. Tolko and Footner shall continue to consult with SRD prior to, and during the development of this program to ensure SRD's needs are met.*

Approval Condition 2 - Spruce Budworm

- i. Tolko shall develop in consultation with SRD, a spruce budworm management plan that meets the approval of the Senior Managers of the Forest Planning Section and the Forest Health Section by December 31, 2004.*

- ii. *The plan in (i) above shall include as a minimum, components that address the level and severity of infestation, short-term and long-term objectives, and industry-government roles, responsibilities, and cost sharing. The Alberta Forest Health Strategy and Shared Roles and Responsibilities Between SRD and the Forest Industry shall be followed. Appendix 2 contains guidelines for spruce budworm management plan content.*

Approval Condition 3 - Structure Retention within Cutblocks

- i. *Tolko and Footner shall develop detailed stand structure protocols that describe how the merchantable and non-merchantable components of harvested stands will be utilized to create retained stand structure within cutblock. The protocols shall be included in the operating ground rules that shall be completed and approved within six months of the date of this approval decision.*
- ii. *Tolko and Footner shall design a cost effective and practical field assessment program for structure retention monitoring and reporting by June 1, 2004. This merchantable volume shall be chargeable as annual allowable cut (AAC) production and shall be reconciled every five years at the end of each cut control period. The program must meet the approval of the Senior Manager, Forest Planning Section by this date. Failure to meet this deadline or to annually report these statistics shall result in a reduction of the FMA AAC by 1% effective May 1, 2003.*

Approval Condition 4 - Silviculture Treatments

- i. *The companies and embedded timber operators shall develop a Silviculture Strategy Table that summarizes the practices to be used on the FMA area and links those practices to the regeneration strata used in the DFMP. The table format and examples are included in Appendix 3.*
- ii. *The table mentioned in (i) above shall deal with the replacement of incidental coniferous volume from the deciduous strata. Tolko may propose strategies to effectively replace incidental coniferous volume, but these must be approved by the Senior Manager, Harvest and Renewal Section. Until an alternate strategy is approved, Tolko shall reforest one hectare of deciduous strata landbase to the provincial coniferous standard for every 125 m³ of incidental coniferous volume produced.*
- iii. *Tolko and Footner shall have the table required in (i) above completed and approved by the Senior Manager, Harvest and Renewal Section by April 1, 2004.*

Approval Condition 5 - Watershed Management

- i. *Tolko and Footner shall consult with a professional with expertise in forest hydrology, and shall have this professional develop a watershed assessment result report. This report shall speak to the assessment results presented in the DFMP, implications to the environment, and shall include recommendations to ameliorate the predicted negative impacts to watersheds. Emphasis should be placed on developing an acceptable threshold(s) for increases in water yield for the Tolko and Footner FMA for use in future analysis/assessments.*

- ii. *The recommendations from the watershed assessment report shall be incorporated into the next DFMP due in September 2007.*

Approval Condition 6 - Aboriginal Consultation

- i. *The companies shall remove references to the MOU and SMA from the DFMP and resubmit the revised sections to SRD by February 27, 2004. (The entire digital copy, and the revised hard copy pages of the DFMP shall be resubmitted.)*
- ii. *The companies shall keep complete and accurate written records of their consultation with First Nation; i.e. comments received, and how concerns identified have been addressed and incorporated into forest management planning. This information shall be reported in the companies' Stewardship Report and shall also be incorporated into the next DFMP due in 2007.*
- iii. *When Alberta's policy dealing with First Nation's consultation is complete, the companies shall work with SRD in identifying necessary action plans, and if required, sections within the DFMP that shall be amended.*

Approval Condition 7 - Spatial Harvest Sequence

- i. *Tolko, Footner, and the embedded operators must follow the mapped harvest sequence as presented in the DFMP.*
- ii. *To address operational planning concerns, Tolko, Footner and the embedded timber disposition holders are authorized to modify the harvest sequence by replacing up to 20% of the total sequenced area in each compartment, within each decade, while harvesting no more than 100% of the total area within the SHS by compartment, by decade.*
- iii. *Preferably, stands selected to replace those in the SHS shall be selected from the second 10 years of the sequence (years 11 to 20). Where this is not feasible, replacement may be made from any other stand identified in the approved net land base of the DFMP.*
- iv. *Where Tolko and Footner plan to exceed the variance described in (ii), prior written approval for such must be granted by SRD. SRD's decision to authorize this variance shall be determined through discussions with the companies and a detailed analysis of the factors contributing to the variance. Where variance is the result of widespread replacement of stands within the harvest sequence, a Compartment Assessment (CA) is required. Where the variance is the result of operational implementation of the harvest sequence (i.e. Covertypes boundary changes for operational efficiency) SRD may, at the discretion of the Senior Manager, Forest Planning Section, require the completion of a CA. The operating ground rules to be developed following DFMP approval shall dictate the planning requirements for when a CA is required.*
- v. *SRD requires that an analysis of variance from the SHS be submitted annually. The ground rules that will be developed following DFMP approval will address the details of reporting requirements.*
- vi. *SRD will generally not request a modification of the harvest sequence for the first 10 years of the planning period unless it is required by a change in legislation or a policy approved by the Minister.*

Approval Condition 8 - Preferred Forest Management Strategy: Stewardship Monitoring and Reporting

- i. The company shall report on the items contained in Section 9.3 of the DFMP as per the reporting timelines established within that section. Additionally, the companies shall include in the stewardship report, a description of the progress made towards achieving the targets identified within Section 4.0 that are not included in Section 9.3.*
- ii. The companies shall report on harvested coniferous and deciduous volumes by compartment, comparing scaled volumes to those from yield projections. Further, the companies shall separate out and report on the following from combined strata;*
 - 1. Coniferous from black spruce leading strata, all densities, all sites*
 - 2. Coniferous and deciduous from deciduous strata, all densities, all sites*

Approval Condition 9 - Previous Correspondence to the Companies

- i. The companies shall respond in writing to the comments provided by SRD on November 2002 by June 1, 2004. A copy of the comments previously provided can be obtained from SRD if necessary.*
- ii. In the response to SRD, as mentioned in (i) above, the companies shall identify which sections of the DFMP address the concern. Where, in SRD's opinion, the concern has not been adequately addressed in the resubmission of the DFMP an action plan detailing how the concern will be addressed is required.*

Approval Condition 10 - Approved Annual Allowable Cuts

- i. Tolko, Footner, and the embedded operators shall adhere to the AACs presented in Appendix 1, including any AAC levels set using partitions.*

Approval Condition 11 - Industrial Salvage Timber

- i. Tolko and Footner shall track the volumes generated from industrial salvage on the FMA area and where these volumes have not been charged to another timber disposition within the FMA area, Tolko and Footner shall charge these volumes as production against the FMA disposition.*

Table of Contents

Executive Summary	i
Table of Contents	v
1. Introduction.....	1
2. Government of Alberta Participants: Detailed Forest Management Plan Appraisal ..	1
3. Forest Management Plan Area	2
4. Plan Background.....	2
5. Approval Scope	3
6. Growth and Yield.....	3
Approval Condition 1 – Growth and Yield.....	3
7. Spruce Budworm	4
Approval Condition 2 – Spruce Budworm	4
8. Structure Retention within Cutblocks	4
Approval Condition 3 – Structure Retention within Cutblocks.....	5
9. Silviculture Treatments.....	5
Approval Condition 4 – Silviculture Treatments.....	6
10. Watershed Management	6
Approval Condition 5 – Watershed Management	6
11. Aboriginal Consultation	7
Approval Condition 6 – Aboriginal Consultation.....	7
12. Spatial Harvest Sequence	7
Approval Condition 7 – Spatial Harvest Sequence.....	8
13. Preferred Forest Management Strategy: Stewardship Monitoring and Reporting	8
Approval Condition 8 – Preferred Forest Management Strategy: Stewardship Monitoring and Reporting.....	9
14. Previous Correspondence to the Companies.....	9
Approval Condition 9 – Previous Correspondence to the Companies	9
15. Approved Annual Allowable Cuts.....	10
Approval Condition 10 – Approved Annual Allowable Cuts.....	10

16. Industrial Salvage Timber	10
Approval Condition 11 – Industrial Salvage Timber.....	10
17. Authorization.....	10
Appendix 1.....	1
Approved Annual Allowable Cuts.....	1
FMU F26: Effective May 1, 2003.....	1
Appendix 2.....	1
Spruce Budworm (SBW) Management Plan Framework	1
Appendix 3.....	1
Silviculture Treatment Table.....	1

1. Introduction

The Executive Director of the Forest Management Branch (FMB), Public Lands and Forests Division of SRD has the authority to approve for implementation, Detailed Forest Management Plans (DFMP) prepared by Forest Management Agreement (FMA) holders. This Approval Decision documents the facts considered, assumptions made and conditions imposed by the Executive Director regarding the Tolko Industries Ltd., High Level Lumber Division (Tolko) and Footner Forest Products Ltd. (Footner) DFMP submitted for approval on October 10, 2003.

This approval also brings closure to the DFMP planning process and provides direction for the successful and efficient implementation of the DFMP.

Conditions in this Approval Decision are consistent with the terms of the Forest Management Agreement and failure by Tolko or Footner to fulfill the direction provided in this Approval Decision shall place the companies in default of their Forest Management Agreement.

2. Government of Alberta Participants: Detailed Forest Management Plan Appraisal

The following staff members participated in the appraisal of the Tolko and Footner Detailed Forest Management Plan for content and conformity with SRD standards and current requirements for DFMPs. All comments and recommendations from staff were considered in drafting the approval decision. I extend my thanks to staff for a job well done and for their personal and professional commitment to the task.

Reviewer	Title	Registration	DFMP Component
Tim Toth, P. Bio.	Water Resource Analyst, Peace River	ASPB	Water Resources
Dave Walty	Fisheries Management, Peace River		Fisheries
Jim Rosin	Fisheries Management, Peace River		Fisheries
Kim Morton	Wildlife Biologist, Peace River		Biodiversity and Habitat
John Stadt, P. Bio	Forest Ecology Specialist, Forest Planning Section	ASPB	Biodiversity and Habitat
Greg Greidanus, RPF	Growth and Yield Forester, Forest Biometrics Unit	CAPF #671	Growth and Yield
Grant Klappstein	Biometrics Forester, Forest Biometrics Unit		Growth and Yield
Dave Morgan, RPF	Manager, Forest Biometrics Unit	CAPF #270	Growth and Yield
Mark Townsend, RPF	Resource Analyst, Peace River	CAPF #486	Net Landbase, Timber Supply Analysis
*Daryl Price, RPF	Senior Manager, Resource Analysis Section	CAPF #081	Growth & Yield, Net Landbase, Timber Supply Analysis
Roger Light, RPFT	Forest Protection Technician, High Level	CAPFT #010029	Forest Protection
Hideji Ono, P. Ag.	Senior Manager, Forest Health Section	ASPA	Forest Insects and Disease
Dr. Sunil Ranasinghe	Senior Provincial Entomologist		Forest Insects and Disease

Mike Maximchuk	Forest Health Officer, Peace River		Forest Insects and Disease, Invasive Plants
Ted Edwards, RPF	Area Forester, Upper Hay Area	CAPF #603	All sections
Marty O'Byrne, RPF	Senior Forester, Peace River	CAPF #118	All sections
*Robert Stokes, RPF	Senior Manager, Forest Planning Section	CAPF #500	All sections
*Stephen Wills, RPF	Forest Management Planning Forester, Forest Planning Section	CAPF #628	All sections

* Review Team Core Members

CAPF – College of Alberta Professional Foresters

CAPFT – College of Alberta Professional Forest Technologists

ASPB – Alberta Society of Professional Biologists

ASPA – Alberta Society of Professional Agrologists

3. Forest Management Plan Area

The area under consideration is the Forest Management Agreement (FMA) area of Tolko and Footner. FMA #0200004 was allocated to the companies through Order-in-Council 281/2002, dated June 25, 2002. The FMA area is within Forest Management Unit (FMU) F26, created by the amalgamation of former FMUs F24 and F25.

The FMA is located in the Northwest corner of the province, and spans portions of six natural sub-regions including the Central Mixedwood, Dry Mixedwood, Wetland Mixedwood, Lower Foothills, Boreal Highlands, and Sub-Artic. The Landscape Assessment component of the DFMP describes the planning area in greater detail.

4. Plan Background

The integrated DFMP submitted for the joint FMA was initiated when Tolko was the FMA holder and Footner was a deciduous allocation holder within the FMA. The original FMA was renegotiated and the FMA was awarded to Tolko and Footner jointly, in 2002.

To solicit public input into the planning process, Tolko and Footner organized stakeholders into three working groups based on Social/Communication, Timber Supply Analysis/Economics, and Ecological/Environmental themes. Tolko and Footner continue to have a Public Advisory Committee that provides feedback to the companies.

The DFMP was originally due on December 19, 2001, however through formal extension and the renegotiation of the FMA, the DFMP became due December 31, 2002. The plan was received prior to the extended due date, and a detailed review was undertaken. However, given that final components of the plan had been developed largely without government consultation, there were outstanding items that needed to be addressed before SRD could consider the DFMP for approval.

Following the review of outstanding items, regular meetings in Edmonton between SRD representatives and company representatives were organized to expedite the revision and resubmission of the DFMP. SRD's list of concerns became the focus and agenda for discussion. The meetings were co-operative and productive and agreement was reached on the outstanding items allowing the DFMP to be resubmitted for approval on October 10, 2003.

5. Approval Scope

This Approval Decision relates to the Tolko and Footner DFMP submitted October 10, 2003. All coniferous and deciduous timber operators within the FMA area shall conduct their activities in accordance with the DFMP and the approval conditions.

Tolko and Footner shall meet the requirements (dates and content) of the Approval Conditions unless the Executive Director, Forest Management Branch, agrees to alternate requirements in writing.

In the event of an inconsistency between this plan and existing, new or revised legislation or regulation, the legislation or regulation shall apply.

6. Growth and Yield

Tolko and Footner are required, in accordance with the FMA, to develop a Growth and Yield Program acceptable to the Minister. SRD has extended the previous deadline of December 31, 2002 to April 1, 2004. I understand that the companies are currently working with SRD staff in defining this program. A credible Growth and Yield Program is imperative to collecting information for use in future timber supply analysis as well as for verification of current DFMP yield assumptions. Therefore, the following is required:

Approval Condition 1 – Growth and Yield

- i. Tolko and Footner shall develop a Growth and Yield Program and have it approved by the Senior Manager, Resource Analysis Section by April 1, 2004. The plan shall be designed to provide the data necessary to validate the yields forecasted by all yield functions and strata used in the Timber Supply Analysis (TSA). The companies shall address the data needs for the Enhanced Forest Management Plan that will be developed for inclusion in the next DFMP and design the plan with enough flexibility to incorporate these future requirements.
- ii. Both permanent and temporary sample plots must be established for all yield strata as defined in (i) above. This approach will build separate data sets to be used for independent model construction and validation.

- iii. Local regeneration survey data must be incorporated into the Growth and Yield Program. This data shall be collected and submitted as defined in the current versions of the Alberta Regeneration Survey Manual and the ARIS Industry Operations Manual. Raw regeneration survey plot data collected by all forest operators shall be submitted in a format acceptable to SRD.
- iv. The plot establishment schedule shall emphasize the collection of useful amounts of post-harvest data in time to be used in the next DFMP.
- v. Tolko and Footner shall continue to consult with SRD prior to, and during the development of this program to ensure SRD's needs are met.

7. Spruce Budworm

The spruce budworm outbreak is the most important forest health issue on the Tolko and Footner FMA. SRD assessments indicate approximately 157,000 hectares of the net productive landbase is experiencing some degree of defoliation. Tolko is dealing with this concern primarily by focusing harvest sequencing in these areas. I have accepted this approach for this DFMP, however, I believe that a well-thought out, coordinated and cooperative management approach is necessary to deal with the spruce budworm over the longer term. Therefore the following is required.

Approval Condition 2 – Spruce Budworm

- i. Tolko shall develop in consultation with SRD, a spruce budworm management plan that meets the approval of the Senior Managers of the Forest Planning Section and the Forest Health Section by December 31, 2004.
- ii. The plan in (i) above shall include as a minimum, components that address the level and severity of infestation, short-term and long-term objectives, and industry-government roles, responsibilities, and cost sharing. *The Alberta Forest Health Strategy and Shared Roles and Responsibilities Between SRD and the Forest Industry shall be followed.* Appendix 2 contains guidelines for spruce budworm management plan content.

8. Structure Retention within Cutblocks

Throughout the Province, forest industries practise merchantable green tree retention within cut blocks to create residual (post harvest) stand structure. SRD has approved detailed forest management plans that propose structure retention targets ranging between 1% and 15% of merchantable volume. The Tolko and Footner approach is consistent with this as they propose a minimum retention target of 1% merchantable volume at the landscape level and other non-merchantable residual material left within 5% of the area harvested. The consideration of residual structure is important and Tolko and Footner have taken a conservative approach, while committing to future refinement. I believe this

is appropriate in the absence of definitive, scientifically derived conclusions indicating otherwise.

I believe this strategy will allow for a practical and cost-effective method for tracking and reporting structure retention, and timber harvest production reconciliation to be developed.

Approval Condition 3 – Structure Retention within Cutblocks

- i. Tolko and Footner shall develop detailed stand structure protocols that describe how the merchantable and non-merchantable components of harvested stands will be utilized to create retained stand structure within cutblocks. The protocols shall be included in the operating ground rules that shall be completed and approved within six months of the date of this approval decision.
- ii. Tolko and Footner shall design a cost effective and practical field assessment program for structure retention monitoring and reporting by June 1, 2004. This merchantable volume shall be chargeable as annual allowable cut (AAC) production and shall be reconciled every five years at the end of each cut control period. The program must meet the approval of the Senior Manager, Forest Planning Section by this date. Failure to meet this deadline or to annually report these statistics shall result in a reduction of the FMA AAC by 1% effective May 1, 2003.

9. Silviculture Treatments

Tolko and Footner included an excellent summary on the commercial tree species within the FMA, however it is important to define the silvicultural practices that will be used to establish managed stands that produce the expected future yields. Forestry professionals are free to determine the most appropriate strategy based upon *management by objectives* principles, however the linkage between silviculture practices and timber yields from regenerated stands is fundamental to the DFMP. Defined silviculture strategies demonstrate that operational considerations and forethought in crop planning have been incorporated into the reforestation and timber yield assumptions used in the DFMP. In addition, it provides the companies and SRD the ability to monitor the implementation and performance of field activities against the approved DFMP over the short term.

SRD is also concerned with the lack of linkage between the coniferous volume projections in pure deciduous strata and silviculture strategies to replace that volume in the future.

Therefore, the following is required:

Approval Condition 4 – Silviculture Treatments

- i. The companies and embedded timber operators shall develop a *Silviculture Strategy Table* that summarizes the practices to be used on the FMA area and links those practices to the regeneration strata used in the DFMP. The table format and examples are included in Appendix 3.
- ii. The table mentioned in (i) above shall deal with the replacement of incidental coniferous volume from the deciduous strata. Tolko may propose strategies to effectively replace incidental coniferous volume, but these must be approved by the Senior Manager, Harvest and Renewal Section. Until an alternate strategy is approved, Tolko shall reforest one hectare of deciduous strata landbase to the provincial coniferous standard for every 125 m³ of incidental coniferous volume produced.
- iii. Tolko and Footner shall have the table required in (i) above completed and approved by the Senior Manager, Harvest and Renewal Section by April 1, 2004.

10. Watershed Management

In the past, timber supply analyses have relied on volume removal assumptions and aspatial modeling to protect the integrity of watersheds scheduled for harvesting activities. I believe that sufficient tools exist now to assess these impacts in a spatial manner. Tolko and Footner have completed such an assessment on 34 watershed units within the FMA. Although SRD does not prescribe an acceptable threshold for increases in annual yield, 15% is commonly used as a trigger at which a closer review of the implications is undertaken. The watersheds analyzed by Tolko and Footner exceed this measure, but I believe this information must be balanced with a consideration of the generalness of the modeling approach and the quality of the data used. It is prudent however to examine this information in greater detail for inclusion in the next DFMP. Therefore the following is required:

Approval Condition 5 – Watershed Management

- i. Tolko and Footner shall consult with a professional with expertise in forest hydrology, and shall have this professional develop a watershed assessment report. This report shall speak to the assessment results presented in the DFMP, implications to the environment, and shall include recommendations to ameliorate the predicted negative impacts to watersheds. Emphasis shall be placed on developing an acceptable threshold(s) for increases in water yield for the Tolko and Footner FMA for use in future analysis.
- ii. The recommendations from the watershed assessment report shall be incorporated into the next DFMP due in September 2007.

11. Aboriginal Consultation

Tolko and Footner's commitment to First Nations and their involvement with these communities are well articulated within the DFMP (Section 2: FMA Relationships). SRD is confident that the level of cooperation that currently exists will continue into the future.

The Government of Alberta is currently developing policy outlining Alberta's role in consultation with First Nations. Alberta believes that Tolko and Footner have fulfilled their obligations regarding First Nations consultation, however, future government policy regarding Alberta's role may require amendments to the strategy articulated in the DFMP. In addition, statements regarding the Little Red River Cree Nation and the Tallcree First Nation's Memorandum of Understanding (MOU) and Special Management Area (SMA) are outdated. Therefore the following applies:

Approval Condition 6 – Aboriginal Consultation

- i. The companies shall remove references to the MOU and SMA from the DFMP and resubmit the revised sections to SRD by February 27, 2004. (The entire digital copy, and the revised hard copy pages of the DFMP shall be resubmitted.)
- ii. The companies shall keep complete and accurate written records of their consultations with First Nations; i.e. comments received, and how concerns identified have been addressed and incorporated into forest management planning. This information shall be reported in the companies' Stewardship Report and shall also be incorporated into the next DFMP due in 2007.
- iii. When Alberta's policy for First Nation's consultation is complete, the companies shall work with SRD in identifying necessary action plans, and if required, sections within the DFMP that shall be amended.

12. Spatial Harvest Sequence

The spatial (mapped) harvest sequence (SHS) is the most important DFMP output as it implements the strategies the companies must follow to achieve the predicted future forest condition. The future forest condition, while dependent on many factors, is strongly influenced by harvest patterns, intensity and schedules. It presents spatially and temporally how the integration of environmental, economic, and social values will be achieved on the FMA. Adherence to the planned harvest sequence is imperative to achieving the predicted future forest.

The Preferred Forest Management Strategy 20-Year Harvest Sequence map presents the stands that are scheduled for harvest during this plan period. The following requirements apply:

Approval Condition 7 – Spatial Harvest Sequence

- i. Tolko, Footner, and the embedded operators must follow the mapped harvest sequence as presented in the DFMP.
- ii. To address operational planning concerns, Tolko, Footner and the embedded timber disposition holders are authorized to modify the harvest sequence by replacing up to 20% of the total sequenced area in each compartment, within each decade, while harvesting no more than 100% of the total area within the SHS by compartment, by decade.
- iii. Preferably, stands selected to replace those in the SHS shall be selected from the second 10 years of the sequence (years 11 to 20). Where this is not feasible, replacement may be made from any other stand identified in the approved net land base of the DFMP.
- iv. Where Tolko and Footner plan to exceed the variance described in (ii), prior written approval for such must be granted by SRD. SRD's decision to authorize this variance shall be determined through discussions with the companies and a detailed analysis of the factors contributing to the variance. Where variance is the result of widespread replacement of stands within the harvest sequence, a *Compartment Assessment (CA)* is required. Where the variance is the result of operational implementation of the harvest sequence (i.e. Covertypes boundary changes for operational efficiency) SRD may, at the discretion of the Senior Manager, Forest Planning Section, require the completion of a CA. The operating ground rules to be developed following DFMP approval shall dictate the planning requirements for when a CA is required.
- v. SRD requires that an analysis of variance from the SHS be submitted annually. The ground rules that will be developed following DFMP approval will address the details of reporting requirements.
- vi. SRD will generally not request a modification of the harvest sequence for the first 10 years of the planning period unless it is required by a change in legislation or a policy approved by the Minister.

13. Preferred Forest Management Strategy: Stewardship Monitoring and Reporting

Considering the details presented in the landscape assessment, sensitivity analysis, spatial harvest sequence, and together with the completion of the Approval Conditions, I am satisfied that the preferred forest management strategy is reasonable and sustainable.

The DFMP reasonably describes the predicted outcomes of the preferred forest management strategy. It is essential for all forest operators on the FMA to validate predictions and ensure success in achieving the desired results by carrying out a credible

program of monitoring, reporting, and corrective action. I strongly believe that effective monitoring and validation of DFMP assumptions is paramount in achieving forest sustainability. Therefore the following is required.

Approval Condition 8 – Preferred Forest Management Strategy: Stewardship Monitoring and Reporting

- i. The company shall report on the items contained in Section 9.3 of the DFMP as per the reporting timelines established within that section. Additionally, the companies shall include in the stewardship report, a description of the progress made towards achieving the targets identified within Section 4.0 that are not included in Section 9.3.
- ii. The companies shall report on harvested coniferous and deciduous volumes by compartment, comparing scaled volumes to those from yield projections. Further, the companies shall separate out and report on the following from combined strata;
 1. Coniferous from black spruce leading strata, all densities, all sites
 2. Coniferous and deciduous from deciduous strata, all densities, all sites

14. Previous Correspondence to the Companies

When SRD met with the companies on November 25, 2002, a table of comments resulting from the review of the DFMP draft dated May 31, 2002 was presented. The table categorized the comments into *Significant*, meaning that the item must be dealt with prior to approval; *Requires Follow-up*, meaning that the item would be addressed following plan approval, and *Editorial/Comment*, meaning that items required no action but the information was presented for plan improvement.

The *significant* items have been dealt with to the satisfaction of SRD and many of the *follow-up* items have been addressed due to plan amendments, however there are still a number of them outstanding. SRD is particularly concerned with those items in the subject areas of growth and yield and AAC calculation. I believe that professional due diligence requires that the companies respond to the comments categorized as *follow-up*. Therefore the following is required:

Approval Condition 9 – Previous Correspondence to the Companies

- i. The companies shall respond in writing to the comments provided by SRD on November 2002 by June 1, 2004. A copy of the comments previously provided can be obtained from SRD if necessary.
- ii. In the response to SRD, as mentioned in (i) above, the companies shall identify which sections of the DFMP address the concern. Where, in SRD's opinion, the concern has not been adequately addressed in the resubmission of the DFMP an action plan detailing how the concern will be addressed is required.

15. Approved Annual Allowable Cuts

Alberta's review of the timber supply analysis validated the methodology used and documentation submitted. The Resource Analysis Section conducted a TSA model run using the Tolko and Footner information and is satisfied that the analysis and resulting AACs are reasonable.

Tolko and Footner are proposing to increase utilization of the FMA landbase by including areas that were not used in previous AAC calculations. While this is laudable from a timber utilization perspective, SRD is apprehensive regarding the feasibility of successfully reforesting some of these areas following harvest, particularly black spruce sites.

Alberta does not commonly partition AACs, however given the growing complexity of timber supply analysis and regeneration assumptions, as well as the importance of particular species profiles for economic and ecological considerations, I believe it is a prudent approach to approving sustainable harvest levels. Therefore the following applies:

Approval Condition 10 – Approved Annual Allowable Cuts

- i. Tolko, Footner, and the embedded operators shall adhere to the AACs presented in Appendix 1, including any AAC levels set using partitions.

16. Industrial Salvage Timber

Timber volume resulting from non-forestry industrial operations is an important consideration for sustainability. I believe it is important to track all activities that result in the harvest of timber and account for those volumes as production against the sustainable harvest level. Therefore the following is required:

Approval Condition 11 – Industrial Salvage Timber

- i. Tolko and Footner shall track the volumes generated from industrial salvage on the FMA area and where these volumes have not been charged to another timber disposition within the FMA area, Tolko and Footner shall charge these volumes as production against the FMA disposition.

17. Authorization

The Detailed Forest Management Plan for the Tolko and Footner FMA area submitted October 10, 2003 is approved subject to the Approval Conditions and the Annual Allowable Cuts presented in this Approval Decision.

Appendix 1

Approved Annual Allowable Cuts¹ Tolko and Footner Detailed Forest Management Plan

FMU F26: Effective May 1, 2003

Company	Disposition	Coniferous			Deciduous	
		AAC (m ³) (Excluding Black Spruce)	Black Spruce AAC (m ³)	Utilization Standard	AAC (m ³)	Utilization Standard
Tolko Forest Industries Ltd. ²	FMA0200040	1,100,000	100,000	15/11		
Footner Forest Products Ltd. ²	FMA0200040				701,357	15/10
Ridgeview Sawmills Ltd.	DTAF260002				18,288	15/10
Precision Lumber Products Ltd.	DTAF260001				18,288	15/10
Netaskinan Development Corporation	DTAF260003				30,000	15/10
Netaskinan Development Corporation	DTAF260004				50,000	15/10
Che K'Li Enterprises Ltd.	DTAF250001				2,230	15/10
Daishowa-Marubeni International Ltd.	DTAF910001				179,837	15/10
Total		1,100,000	100,000		1,000,000	

¹ Annual allowable cuts shown in Appendix 1 are the approved harvest levels for all disposition holders.

² The DFMP ramp-up strategy to utilize the entire long-run sustainable harvest level is approved; i.e. the entire long-run sustainable coniferous harvest level accrues to Tolko and the net deciduous harvest level accrues to Footner. (net = entire long-run sustainable deciduous harvest level minus current DTA allocations)

Appendix 2

Spruce Budworm (SBW) Management Plan Framework

1. An assessment of the current and potential extent as well as severity of the SBW problem within the FMA area.

This shall:

- a. Include an updated database incorporating the most current and available annual aerial survey results. The companies shall work in collaboration with the regional Forest Health Officer (FHO).
- b. Indicate the forest stands at high risk of budworm infestations in the near future (assist FHO to carry out annual moth surveys with pheromone-baited traps and second-instar surveys where applicable).
- c. Include SBW-caused tree mortality based on defoliation history (use SRD guidelines on the relationship between defoliation and tree mortality) and projected levels of defoliation.
- d. Estimate the current tree mortality in high risk stands and make near-term (1-3 year) projections.
- e. Identity of SBW 'hot-spots' where severe infestations are recurrent in spite of aerial spray operations.

2. An assessment of the SBW impact on management objectives of the DFMP.

- a. If there is no impact then revert to # 1 above.
- b. If there is an impact proceed with the steps 3-7 given below.

3. An analysis of the impact of SBW-caused tree mortality on future timber supply in each FMU.

- a. Identity severely infested host stands within/outside operable areas of the FMA area.
- b. Identify plans to establish/assist in monitoring long-term SBW impact within the FMA area.

4. Spruce budworm management objectives for the FMA area. These shall be realistic goals achievable within the following time frames.

- a. Short-term objectives (1-5 years) e.g., reduce tree kill.
- b. Long-term objectives (5-20 years) e.g., reduce SBW susceptibility of forest stands.
- c. Limitations imposed by other DFMP objectives.

5. Spruce budworm management strategies proposed to achieve the SBW management objectives given in Section 4 above.

- a. If more than one strategy is proposed, they shall be compatible.
- b. Shall help to manage the current problem and limit recurrence of the problem in the future, where feasible.
- c. Shall not cause other forest health problems.
- d. Shall incorporate current knowledge.

6. Specify tactics to be used under each management strategy.

- a. Tactics must be compatible with the strategy.
- b. Specify the details of implementation plan on using each tactic (when, where, how, by whom etc.).
- c. Indicate monitoring and follow-up action where relevant.
- d. Tactics shall not contravene the current forest management policies, guidelines, directives etc.

7. Supporting documents:

- a. Maps, tables, schedules to support the above mentioned items
- b. Any literature to support the items 4 and 5 above.

Appendix 3

Silviculture Treatment Table

Silvicultural Strategy Summary										
Preharvest Condition		Reforestation Transitions		Harvest		Post Harvest Treatments				
Yield Stratum	AVI Species Group	Transition Assumptions & Regeneration Lag	Area	Understory Protection		Site Preparation	Establishment Type & Density			Competition Control
		(% transitioning to stratum XX) Regen. Lag (yrs)	(ha)	yes/no	(ha)	Mechanical, Chemical, None	LFN (yes/no)	Seed (kg/ha)	Plant (range +/- 200 stems/ha)	Manual, Chemical, Mechanical, None
1	P	85% to stratum 1 Regen. Lag = 2 yrs	850	no		Mechanical	yes			None
		10% to stratum 2 Regen. Lag = 2 yrs	100	no		None			1400 to 1600	None
		5% to stratum 3 Regen. Lag = 2 yrs	50	no		Mechanical			1400 to 1600	Chemical
2	P mixed- wood	100% to stratum 2 Regen. Lag = 2 yrs	150	yes	150	None			600 to 800	Manual
			200	no		Mechanical			1600 to 1800	Chemical
3	DC									