Government of Alberta
Sustainable Resource Development

Forest Management Plan
Approval Decision

Forest Management Unit C5

Updated: October 20, 2010
Effective: May 1, 2010

Approved by: ***Original signed by***
Robert W. Stokes, RPF
Acting Executive Director
Forest Management Branch
Forestry Division

Executive Summary

The C5 Forest Management Unit (FMU) 2006-2026 Forest Management Plan (FMP) is approved subject to the satisfactory completion of the Approval Conditions contained in this document.

The Forest Management Plan has been validated[1] by a Regulated Forestry Professional (RFP). The department recognizes RFP-validated work as complete, accurate, and prepared with professional due diligence. The FMP has been reviewed and approved by government RFPs.

Approval Decision Conditions

Approval Condition	***Requirement***	***Approval Authority***	***Date***
6.1	*Public Consultation*	*Senior Manager, Forest Planning Section*	*On-going*
6.2	*First Nations Consultation*	*Senior Manager, Forest Planning Section*	*On-going*
7.1	*Mountain Pine Beetle*	*Senior Manager, Forest Planning Section*	*On-going*
10.1	*Spatial Harvest Sequence*	*Senior Manager, Forest Planning Section*	*On-going*
12.1	*Grazing Timber Agreement*	*Senior Manager, Forest Planning Section*	*On-going*
13.1	*Industrial Timber Salvage*	*Senior Manager, Timber Production, Auditing and Revenue Section*	*On-going*
15.1	*Performance Monitoring*	*Senior Manager, Forest Planning Section*	*October 31, 2015*

[1] Refer to the Alberta Forest Management Planning Standard, Annex 2 for professional validation requirements.

Approved Annual Allowable Cuts

The sustainable coniferous harvest level was determined using the managed landbase and excluded non-forested areas, deciduous (D) and deciduous leading (DC) cover groups.

The approved AAC for the C5 Forest Management Unit area is 209,414 m^3.

Refer to attached tables:

Table 1. Historical Coniferous Allocations and Annual Allowable Cuts
Table 2. Approved Coniferous Allocations and Annual Allowable Cuts
Table 3. Coniferous Periodic Allowable and Quadrant Authorized Allowable Cuts.

Authorization

The 2006-2026 Forest Management Plan for Forest Management Unit C5 is approved subject to the Approval Conditions and Annual Allowable Cuts (Table 2) presented in this Approval Decision.

This Forest Management Plan replaces the previous FMP approved March 6, 1987.

The AAC (209,414 m^3) is effective beginning May 1, 2010.

The next Forest Management Plan is due by April 30, 2016.

Table of Contents

1.0 Introduction

The Executive Director, Forest Management Branch (FMB), Forestry Division of the Department of Sustainable Resource Development (the department) is the delegated authority for Forest Management Plan (FMP) approvals. This Approval Decision documents the rationale and conditions of approval for the 2006-2026 C5 Forest Management Plan.

The FMP has been validated[1] by a Regulated Forestry Professional (RFP). The department recognizes RFP-validated work as complete, accurate, and prepared with professional due diligence. The FMP has been reviewed and approved by government RFPs.

2.0 Forest Management Planning Area

The area under consideration is the Crown managed Forest Management Unit (FMU) C5.

The C5 Forest Management Unit is located in south western Alberta and occurs entirely within the Rocky Mountains Forest reserve. The FMU is geographically separated into three areas and occurs within the Alpine, Sub-Alpine, Montane and Foothills Parkland natural sub-regions.

In December 2008, the Alberta Land Use Framework was published, establishing a regional planning system to implement provincial policy, set land-use management objectives and determine land-use trade-offs. Seven planning regions were created. The C5 FMU is located entirely within the South Saskatchewan Region.

The South Saskatchewan Regional Plan (SSRP) is under development. The C5 FMP is an operational plan that takes direction from the approved SSRP. At the completion and approval of the SSRP, the department shall review the strategic land use plan and make amendments necessary to the C5 FMP to ensure its alignment with the regional plan.

3.0 Background

The last FMP prepared for the C5 FMU area was approved in 1987. It was kept current with several revisions. The coniferous annual allowable cut (AAC) was updated in 1999, and again in 2003 to account for timber losses resulting from the 2003 Lost Creek wildfire.

The 2006-2026 FMP meets the requirements of the *Alberta Forest Management Planning Standard* and replaces the 1986 Forest Management Plan. It uses new information for planning, implementing and monitoring forestry operations on the FMU. This Approval Decision represents the culmination of the department's FMP development and appraisal processes.

[1] Refer to the Alberta Forest Management Planning Standard, Annex 2 for professional validation requirements.

4.0 Approval Decision Scope

This Approval Decision relates to the FMU C5 2006-2026 FMP and its implementation. All timber operators within the FMU area shall conduct their activities in accordance with the approved FMP and the conditions of this Approval Decision.

In this document, **bolded text** identifies specific timelines and requirements. Non-bolded text provides the rationale for the condition and specific considerations to be addressed.

In the event of an inconsistency between the FMP, the Approval Decision and existing, new or revised legislation or regulation, the legislation and regulation shall apply.

5.0 Forest Management Plan

The Approval Conditions contained herein identify additional work necessary to enhance the information presented in the FMP and to ensure its successful implementation. The department posts approved FMPs on its website for enhanced public access to plans.

6.0 Public and First Nations Consultation

Meaningful consultation was conducted with the Public, and First Nations communities but on-going consultation during FMP implementation is essential to address issues within the scope of the forest management plan. Regional land-use issues are more appropriately discussed at the SSRP consultations.

The following is required:

Approval Condition 6.1 – Public Consultation

The Area Manager, Southern Rockies shall;

- **i. ensure meaningful public consultation is conducted by the disposition holders at key points in the FMP implementation; and**

- **ii. ensure the disposition holders keep written documentation of all issues and comments raised during operational plan consultation, as well as responses and actions taken to address the concerns.**

Approval Condition 6.2 – First Nations Consultation

The Area Manager, Southern Rockies shall ensure the disposition holders;

- **i. conduct meaningful consultation with aboriginal groups during development of General Development Plans; and**

- **ii. meet the requirements of *Alberta's First Nations Consultation Guidelines on Land Management and Resource Development* for future plans and approvals; and**

- **iii. keep written documentation of all issues and comments raised during consultations, as well as responses and actions taken to address the concerns.**

7.0 Mountain Pine Beetle

A high risk of mountain pine beetle (MPB) outbreak exists in south western Alberta due to the presence and extent of susceptible pine, climate conducive to beetle development and survival, and the on-going threat of influxes of beetles from British Columbia in the next few years. The health of the pine forests of FMU C5 will be harmed. The latest dispersal (2009) has not changed Alberta's strategy for managing MPB infestations. Alberta's priorities continue to be i) limit the spread of MPB infestations along the eastern slopes of the Rocky Mountains, and ii) prevent MPB from spreading eastward into the boreal forest.

Currently there is a relatively small MPB infestation in the FMU. On-going and timely communication with local department staff is essential for managing the MPB situation. The department shall continue its efforts to keep the public and stakeholders advised of operational plans and accomplishments in addressing the MPB infestation.

Where annual surveys indicate the area of MPB-killed pine represents 2.5% or more of the net landbase area, the department will re-assess the timber supply and make adjustments as necessary to address the situation.

The following is required:

Approval Condition 7.1 – Mountain Pine Beetle

The Area Manager, Southern Rockies shall;

i. **coordinate the department management efforts for MPB control and forest renewal activities; and**

ii. **determine the operational implementation of the *Timber Harvest Planning and Operating Ground Rules Addendum – Mountain Pine Beetle Operations*.**

8.0 Watershed Assessment

Watershed assessments examining the hydrologic effects of the Preferred Forest Management Scenario (PFMS) were completed using two hydrologic response models; Equivalent Clearcut Area - Alberta (ECA-AB) and Water Resources Evaluation of Non-point Silvicultural Sources (WRENNS-Eca-Ab). The assessments predicted nil to small increases in annual water yield from planned forest harvesting in 19 watersheds and 7 sub-basins. The responses to harvesting are not significant in the management area and are attributed to the very high precipitation and runoff that occurs across most of the FMU. Increases in annual water yields are not significantly different from the long-term mean annual flows. Hydrologic recovery rates vary by watershed size and harvest scheduling but are expected and acceptable.

Information supplementary to the FMP assessments became available from the Oldman Watershed Council in its *Oldman River State of the Watershed Report* published April 22, 2010. The report indicates the Watershed Ranking criteria assessed for 'mountain sub-basins' (i.e. terrestrial and riparian, water quality, water quantity and overall sub-basin health) rated "Good", the Council's highest ranking.

The mountain sub-basins assessed in this report are located within the C5 FMU where on-going forestry operations have taken place for many decades. I believe the department's regulations, planning and operating requirements manage and monitor forestry operations to prevent long-term adverse impacts to water quality and aquatic and riparian habitats.

9.0 Habitat for Species of Special Concern

Grizzly Bear

On June 3, 2010 the Alberta government designated grizzly bears as threatened species to better protect the bears and sustain the provincial population. The designation is based on the most current population research and habitat data, and acts on the recommendation from the Endangered Species Conservation Committee (ESCC), a group of stakeholders including ranchers, industry, academics, wildlife managers and conservation interests.

Alberta's Grizzly Bear Recovery Plan (GBRP) recognizes that reduced grizzly bear survival and reproductive success is linked to human activity in priority habitats. The department is developing an implementation plan for the GBRP. When this is published the department will address the requirements through operational planning.

Whitebark Pine and Limber Pine

Alberta listed Whitebark and Limber pine as 'endangered' on September 9, 2009. Whitebark and Limber pine grow on the C5 FMU but do not form pure stands on the timber harvesting landbase. No Whitebark pine or Limber pine leading types are scheduled for commercial removal.

MPB poses a threat to these species. In the event MPB infests these trees, Level 1 treatments will be employed on green-attacked pine. Where these species are encountered as secondary species to lodgepole pine harvest, these trees will be left as standing structures and monitored with sanitation removal for MPB. Only green-attacked trees will be considered for sanitation removal if MPB infestation occurs.

The department is preparing recovery plans to manage Whitebark pine and Limber pine recovery in Alberta. The FMP will be reviewed (2011) to ensure forestry activities meet the requirements of the approved recovery plans.

10.0 Spatial Harvest Sequence

The spatial (mapped) harvest sequence is the most important output of the FMP as it implements the strategies the timber operators must follow to achieve the predicted future forest condition. While dependent on many factors, the future forest condition 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 FMU. Adherence to a properly planned harvest sequence is imperative to achieving the forecasted future forest. The department recognizes that changes to the SHS will be required to manage future MPB infestations as they occur. The operators are expected to follow the SHS and monitor and report approved variances to the SHS.

The following is required:

Approval Condition 10.1 – Spatial Harvest Sequence

i. All operators shall follow the mapped 20-year harvest sequence as presented in the FMP.

ii. To address operational planning concerns, all timber disposition holders are authorized to modify the SHS by deleting no more than 20% of the total sequenced area in each compartment by decade, while harvesting no more than 100% of the total area within the SHS by compartment, by decade.

a. Preference shall be given to selecting stands from the second 10-year period of the SHS (years 2017-2026) when replacing deleted stands (from ii above). Where this is not feasible, replacements may be from any other stands identified in the approved net landbase of the FMP, with priority given to pine stands that are ranked highly susceptible to MPB infestations.

iii. Should timber operators exceed the variance described in (ii), the Area Manager, Southern Rockies may require the completion of a Compartment Assessment and the Senior Manager, Forest Planning Section may recommend the adjustment of the approved AAC to reflect the impact of the variance.

iv. The department requires the variance from the SHS to be reported annually, and for the 5-year Stewardship Report to analyze the cumulative variance from the SHS and describe the potential impacts of the actual variance on the forecasts made in the FMP.

v. The department will generally not modify the approved harvest sequence for the first 15 years of the planning period unless required by a change in legislation or a policy approved by the Minister (e.g. SSRP).

11.0 Stand Level Structure Retention

Throughout the province, the forest industry practices green tree retention within harvested areas to create residual stand structure. A variety of approaches and retention targets have been approved in FMPs with the view that the result will be a range of forest conditions that, when assessed, will enable a refinement of future targets. The FMP structure retention strategy requires 0%-5% of the merchantable volume of coniferous standing trees be left within harvest areas. An average of 3% or greater of standing merchantable coniferous volume is expected to be maintained across assigned operator compartments.

The strategy applies to all operators on the FMU and supports a single integrated approach for both implementation and monitoring.

12.0 Grazing Timber Agreement

Rangelands are currently being managed through various strategies and mechanisms to meet wildlife and livestock requirements. The FMP identifies grazing allotments with approximately 45,000 Animal Unit Months (AMU) of grazing permitted within the planning area. The management strategy for the rangeland within the planning area is to maintain a stable and sustainable grazing capacity for domestic livestock.

The *Grazing and Timber Integration Manual* outlines the standards for integration of operations with overlapping grazing and timber dispositions. Grazing Timber Agreements (GTA) document how the grazing and timber disposition holders conduct their activities in an integrated fashion. GTAs are necessary where a proposed activity of one disposition holder may affect the interests of the other disposition holder(s).

The following is required:

Approval Condition 12.1 – Grazing Timber Agreement

i. The Area Manager, Southern Rockies may require GTAs be developed where a proposed activity of one disposition holder may affect the interests of the other disposition holder(s); and

ii. GTAs shall meet the requirements of the *Grazing and Timber Integration Manual*

13.0 Industrial Timber Salvage

Accounting for all sources of timber volume drain is critical to ensuring the approved AACs are sustainable. In Alberta, non-forestry industrial operations contribute to this drain and must be included in the total drain from the FMU.

The following is required:

Approval Condition 13.1 – Industrial Timber Salvage

i. All industrial timber salvage produced in the FMU shall be accounted and reported as drain against each timber operator's disposition based on the disposition holders allocated percentage of the AAC.

14.0 Long Term Fibre Sustainability

The fibre flow proposed in the Preferred Forest Management Scenario is acceptable for the Forest Management Unit. The coniferous harvest level of 209,414 m^3 per year for 20 years, followed by a reduction to 157,140 m^3 per year for the remainder of the planning horizon is acceptable. The additional 143,000 m^3 of reconciliation coniferous volume is addressed in the timber supply analysis for the period May 1, 2006 to April 30, 2011 and is approved.

15.0 Performance Monitoring and Reporting

Annual Reports and 5-year Stewardship Reports are used to monitor the successful implementation of FMPs.

The following is required:

Approval Condition 15.1 – Performance Monitoring

i. The Area Manager, Southern Rockies shall prepare the first Stewardship Report by October 31, 2015. Please discuss the form and requirements with the Senior Manager, Forest Planning Section.

16.0 Future Forest Management Plans

The department may amend this FMP in the event of further MPB development or outbreak; and will be reviewed by 2016.

17.0 Approved Annual Allowable Cuts

The sustainable coniferous harvest level was determined using the managed landbase and excluded non-forested areas, deciduous (D) and deciduous leading (DC) cover groups.

The approved AAC for the C5 Forest Management Unit area is 209,414 m^3.

Refer to attached tables:

Table 1. Historical Coniferous Allocations and Annual Allowable Cuts
Table 2. Approved Coniferous Allocations and Annual Allowable Cuts
Table 3. Coniferous Periodic Allowable and Quadrant Authorized Allowable Cuts.

18.0 Authorization

The 2006-2026 Forest Management Plan for Forest Management Unit C5 is approved subject to the Approval Conditions and Annual Allowable Cuts (Table 2) presented in this Approval Decision.

This Forest Management Plan replaces the previous FMP approved March 6, 1987.

The AAC (209,414 m^3) is effective beginning May 1, 2010.

The next Forest Management Plan is due by April 30, 2016.

Table 1. Historical Coniferous Allocations and Annual Allowable Cuts

FMU	Company Name	Disposition Number	Landbase Management Type	Source	Cover Group / Species	Primary Disposition Allocation (%)	Primary Coniferous AAC (m^3) 15+/11/30 cm	Total Approved AAC (m^3)
C5	793128 Alberta Ltd.	CTQC050002	Separate Distinct	All-FMU	C, CD, DC	1.6500%	2,886	2,886
C5	770538 Alberta Ltd.	CTQC050005	Separate Distinct	All-FMU	C, CD, DC	4.3800%	7,661	7,661
C5	Spray Lake Sawmills (1980) Ltd.	CTQC050008	Separate Distinct	All-FMU	C, CD, DC	29.0700%	50,849	50,849
C5	Crowsnest Forest Products Ltd.	CTQC050009	Separate Distinct	All-FMU	C, CD, DC	58.6900%	102,661	102,661
C5	CTPP	CTPP	Separate Distinct	All-FMU	C, CD, DC	6.2100%	10,863	10,863
	FMU C5 Total						**174,920**	**174,920**

Notes:

Effective Date: May 01, 2003.

Table 2. Approved Coniferous Allocations and Annual Allowable Cuts

Effective Date: May 1, 2010

FMU	Company Name	Disposition Number	Landbase Management Type	Source	Cover Group / Species	Primary Disposition Allocation (%)	Primary Coniferous AAC (m^3) 15+/11/30 cm	Total Approved AAC (m^3)
C5	793128 Alberta Ltd.	CTQC050002	Separate Distinct	All-FMU	C, CD	1.6500%	3,455	3,455
C5	770538 Alberta Ltd.	CTQC050005	Separate Distinct	All-FMU	C, CD	4.3800%	9,172	9,172
C5	Spray Lake Sawmills (1980) Ltd.	CTQC050008	Separate Distinct	All-FMU	C, CD	29.0700%	60,877	60,877
C5	Crowsnest Forest Products Ltd.	CTQC050009	Separate Distinct	All-FMU	C, CD	58.6900%	122,905	122,905
C5	CTPP	CTPP	Separate Distinct	All-FMU	C, CD		13,005	13,005
	FMU C5 Total						**209,414**	**209,414**

Table 3. Coniferous Periodic Allowable and Quadrant Authorized Allowable Cuts

3.1 | **C5** | **793128 Alberta Ltd.** | **Disposition: CTQC050002** | **Quadrant Start** 1-May-06 | **Quadrant End** 30-Apr-11

	Quadrant Segment Start Date	Quadrant Segment End Date	Years in Quadrant Segment	Primary Approved Harvest Level (m^3/yr)	Primary Quadrant Contribution (m^3)	Total Quadrant Contribution (m^3)	Notes
1	1-May-06	30-Apr-10	4.0000000000	2,886	11,544.0000	11,544.0000	
2	01-May-10	30-Apr-11	1.0000000000	3,455	3,455.0000	3,455.0000	
	Quadrant Reconciliation Volume (m^3)				693	693	
	QAAC Total				**15,692**	**15,692**	

3.2 | **C5** | **770538 Alberta Ltd.** | **Disposition: CTQC050005** | **Quadrant Start** 1-May-06 | **Quadrant End** 30-Apr-11

	Quadrant Segment Start Date	Quadrant Segment End Date	Years in Quadrant Segment	Primary Approved Harvest Level (m^3/yr)	Primary Quadrant Contribution (m^3)	Total Quadrant Contribution (m^3)	Notes
1	1-May-06	30-Apr-10	4.0000000000	7,661	30,644.0000	30,644.0000	
2	01-May-10	30-Apr-11	1.0000000000	9,172	9,172.0000	9,172.0000	
	Quadrant Reconciliation Volume (m^3)				774	774	
	QAAC Total				**40,590**	**40,590**	

3.3 | **C5** | **Spray Lake Sawmills (1980) Ltd.** | **Disposition: CTQC050008** | **Quadrant Start** 1-May-06 | **Quadrant End** 30-Apr-11

	Quadrant Segment Start Date	Quadrant Segment End Date	Years in Quadrant Segment	Primary Approved Harvest Level (m^3/yr)	Primary Quadrant Contribution (m^3)	Total Quadrant Contribution (m^3)	Notes
1	1-May-06	30-Apr-10	4.0000000000	50,849	203,396.0000	203,396.0000	
2	01-May-10	30-Apr-11	1.0000000000	60,877	60,877.0000	60,877.0000	
	Quadrant Reconciliation Volume (m^3)				65,477	65,477	
	QAAC Total				**329,750**	**329,750**	

3.4 | **C5** | **Crowsnest Forest Products Ltd.** | **Disposition: CTQC050009** | **Quadrant Start** 1-May-06 | **Quadrant End** 30-Apr-11

	Quadrant Segment Start Date	Quadrant Segment End Date	Years in Quadrant Segment	Primary Approved Harvest Level (m^3/yr)	Primary Quadrant Contribution (m^3)	Total Quadrant Contribution (m^3)	Notes
1	1-May-06	30-Apr-10	4.0000000000	102,661	410,644.0000	410,644.0000	
2	01-May-10	30-Apr-11	1.0000000000	122,905	122,905.0000	122,905.0000	
	Quadrant Reconciliation Volume (m^3)				153,923	153,923	
	QAAC Total				**687,472**	**687,472**	

3.5 | **C5** | **CTPP** | **Disposition: CTPP** | **Quadrant Start** 1-May-06 | **Quadrant End** 30-Apr-11

	Quadrant Segment Start Date	Quadrant Segment End Date	Years in Quadrant Segment	Primary Approved Harvest Level (m^3/yr)	Primary Quadrant Contribution (m^3)	Total Quadrant Contribution (m^3)	Notes
1	1-May-06	30-Apr-10	4.0000000000	10,863	43,452.0000	43,452.0000	
2	01-May-10	30-Apr-11	1.0000000000	13,005	13,005.0000	13,005.0000	
	Quadrant Reconciliation Volume (m^3)				0	0	
	QAAC Total				**56,457**	**56,457**	

Note: Re-issue - Approved Coniferous Periodic Allowable and Quadrant Authorized Allowable Cuts for Forest Management Unit C5 (September 21, 2010).

Table 4. FMU C5 Coniferous Chargeability
Effective Date: May 1, 2010

FMU	Company Name	Disposition Number	Coniferous Species Used in AAC	Species NOT Chargeable to AAC	Rights to Species NOT Chargeable to AAC	Structure Retention (%)	Structure Retention (%) Accounted for in AAC	Net Landbase Deletions and Deferrals	Net Landbase Deletions and Deferrals: Rights to Timber	Industrial Salvage Chargeability Strategy
All dispositions and FMUs (unless otherwise noted)			All coniferous tree species	N/A	N/A	Ranging from 0-5% with an average of 3%	Structure retention is removed from reported volumes	As per Appendix 6A, Timber Supply Analysis - Landbase Description, Section 4.9.	Deletions and Deferrals do not contribute to the AAC.	All industrial salvage volumes are AAC chargeable

Table 5. FMU C5 Coniferous Utilization

Effective Date: May 1, 2010

					Utilization used to determine Harvest Level in PFMS				Operational Utilization				
FMU	Company Name	Disposition Number	AAC Type	Cover Group / Species	Top Diameter (cm)	Stump Diameter (cm)	Minimum Length (m)	Stump Height (cm)	Top Diameter (cm)	Stump Diameter (cm)	Minimum Length (m)	Stump Height (cm)	Coniferous Harvest Level (m^3/yr) based on Operational Utilization
All dispositions, FMUs and AAC types (unless otherwise noted)			All	C, CD	11	15	2.40	30	N/A	N/A	N/A	N/A	N/A

Table 6. Fiber Transfer Agreements within FMU C5

Source Company	Source Dispositon Number	Transfer Type	Company Directed To	Species Group	Volume (m^3/yr)	Comments
N/A	N/A	N/A	N/A	N/A	N/A	N/A