SECTION TWELVE DEVELOPING VALUES, OBJECTIVES, INDICATORS AND TARGETS (VOITS)







12 Developing Values, Objectives Indicators and Targets (VOITS)

12.1 Introduction

Blue Ridge Lumber Inc., Millar Western Forest Products Ltd., ANC Timber Ltd., Mostowich Lumber Ltd., and the Northern East Slopes Region met on February 26, 1998 to identify the values and measurements that are possible for the Woodlands Forest Area. The Regional Forest Advisory Committee and embedded Quota Holders were also part of the review process. The group decided to follow the same initiative as the Foothills Model Forest and use the framework of the *Criteria and Indicators of Sustainable Forest Management in Canada - CCFM Technical Report 1997.* This report is a national framework of criteria and indicators to help track the nation's progress in achieving sustainable forest management, recognizing environmental, economic and social objectives. The six sustainable forest management criteria are:

- 1. Conservation of biological diversity
- 2. Maintenance and enhancement of forest ecosystem condition and productivity
- 3. Conservation of soil and water resources
- 4. Forest ecosystem contributions to global ecological cycles
- 5. Multiple benefits to society, and
- 6. Accepting society's responsibility for sustainable development

A draft of the *Northern East Slopes Woodlands Forest Area Criteria and Indicators* was presented to the Regional Forest Advisory Committee on October 27, 1998 for review and comment. Copies of the CCFM Technical Report 1997 on Criteria and Indicators of Sustainable Forest Management in Canada were also provided to all members of the RFAC.

Blue Ridge Lumber has used this framework to develop goals and objectives for the preparation of this Detailed Forest Management Plan. These goals and objectives were presented to the Regional Board of Directors on July 14, 1999 and presented to RFAC on July 27, 1999. The revised goals and objectives were presented to the Regional Board of Directors on March 16, 2000 and approval for the document was given May 19, 2000.

These goals and objectives are out dated and they have been replaced by Values, Objectives, Indicators and Targets (VOITS) which is a current requirement of the Alberta Forest Management Planning Standard Version 3, June 2005. Developing VOITS, monitoring and stewardship reporting is required by the Province (June 1, 2004 DFMP Approval Condition 8.) The following strategy for VOITS was accepted by the Forest Planning Section, FMB, at the October 31, 2005 meeting.







 Table 42: Annex 4 Performance Standards: Values, Objectives, Indicators and Targets (VOIT)

CCFM Criterion	CSA SFM Element	Value	Objective	Indicator	Target	Reference ¹	Means to Identify Target	Legal / Policy Requirements	Reporting ²	Acceptable Variance
1. Biological Diversity	1.1. Ecosystem Diversity Conserve ecosystem diversity at the landscape level by maintaining the variety of communities and ecosystems that occur naturally in the DFA.	1.1.1. Landscape scale biodiversity	1.1.1.1. Maintain biodiversity by retaining the full range of cover types and seral stages ³	Area of old, mature, and young forest in each VSA subunit ⁴ by cover class ⁵ .	Seral Stage targets are summarized for the 160-yr planning horizon in Table 4- 17 to Table 4-22 in the DFMP TSA document.	Tables of indicators (values and targets) at 0, 10, 50, and 100 years and Maps of indicators at 0, 10, 50 and 100 years in Section 4 Seral Stage Analysis in DFMP TSA.	Targets and seral stage definitions shall be based on sound science, ecological considerations, wildlife zones, and disturbance regimes. Target shall ensure representation of natural range of ecosystem attributes (e.g., productivity class). Fire History Study of the BRL FMA Area. Vegetation Landscape Assessment Report. Landscape/Stand Level Strategies for Retaining Representative Ecosystems Study. Ecological Land Classification and Wildlife Habitat Project.	Planning Standard	DFMP: Tables of indicators (values and targets) at 0, 10, 50 and 100 years. Maps of indicators at 0, 10, 50 and 100. Performance: 5-year Stewardship Report	Area (ha) of old and mature forests in each DFA subunit by cover class shall be between 90% and 100% of target areas. Area of young forest in each DFA subunit by cover class shall not exceed 110% of target area.
			1.1.1.2. Maintain biodiversity by avoiding landscape fragmentation	a) Range of patch ⁶ sizes for the FMA area.	a) A distribution of harvest area sizes that will result in a patch size pattern over the 160 year planning horizon approximating patterns created by natural disturbances, ranging from less than 1 hectare to 10,375 hectares (Table 4-23 and Table 4-24 in the DFMP TSA document).	Tables of area of forest in each patch size class by VSA subunit at 0, 10, 70 years (end of first rotation). Maps of patch size classes at 0, 10, 20 and 50 years in Section 4 Patch Size Distribution in DFMP TSA.	Targets shall be based on sound science, ecological considerations, wildlife zones, and disturbance regimes. Target shall ensure representation of natural range of ecosystem attributes (e.g. cover class and productivity class). Fire History Study of the BRL FMA Area. Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA Area. Vegetation Landscape Assessment Report. Ecological Land Classification and Wildlife Habitat Project.	Planning Standard	DFMP: Tables of area of forest in each patch size class by VSA subunit at 0, 10, 20 and 70 years (end of first rotation). Maps of patch size classes at 0, 10, 20 and 70 years. Report cut block size annually and at 5-year Stewardship Report	a) At the end of the 10-year FMP term the target distribution is achieved; or demonstrated progress to achieving target in one rotation where the pattern has deviated significantly from the target.
				b) Area of old interior forest ⁷ of each cover class by VSA subunit and total FMA area.	b) Older Interior Forest targets are summarized in Figure 4-10 to Figure 4-12 by cover class and VSA for the 160 year planning horizon (DFMP TSA document).	Maps and Tables of indicator at 0, 10, 50 and 100 yrs in Section 4 Distribution of Interior Older Forest in DFMP TSA.	Windife Habital Froject. Targets shall be based on sound science, ecological considerations, wildlife zones, and disturbance regimes. Target shall ensure representation of natural range of ecosystem attributes (e.g. productivity class). Fire History Study of the BRL FMA Area. Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA Area. Vegetation Landscape Assessment Report. Landscape/Stand Level Strategies for Retaining Representative Ecosystems Study. Ecological Land Classification and Wildlife Habitat Project.	Planning Standard	DFMP: Maps and Tables of indicator at 0, 10, 50 and 100 yrs. Performance: 5-year Stewardship Report	b) Target is achieved for at least 80% of the planning period with variance not exceeding 20% below target.







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	1.1.1.3. Maintain biodiversity by minimizing acces	road density by VSA subunit.	All-weather road density targets by VSA are summarized in Table 4-27 (DFMP TSA document).	Section 5 Access Management in the DFMP text. Map and Table of current situation in Section 4 Road Analysis of DFMP TSA.	Targets shall be based on sound science, ecological considerations, harvest planning, wildlife zones, and social values. Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA area. Ecological Land Classification and Wildlife Habitat Project.	Planning Standard	DFMP: Table of current road density by VSA subunit. Map of existing and proposed open and closed all weather roads. Report forestry roads and total (all users) roads. Performance: 5-year Stewardship Report	A variance not exceeding +/-20% must be achieved
		Open seasonal/temporary road length by VSA subunit.	Seasonal/temporary road length targets by VSA are summarized in Table 4-28 (DFMP TSA document).	Section 5 Access Management in the DFMP text. Table of current situation in Section 4 Road Analysis of DFMP TSA.	Targets shall be based on sound science, ecological considerations, harvest planning, wildlife zones, and social values. Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA area. Ecological Land Classification and Wildlife Habitat Project.	Planning Standard	AOP: Proposed roads. 5 year Stewardship Report	A variance not exceeding +/-20% must be achieved
	1.1.1.4. Maintain plant communiti uncommon in FMA area or province		BRL will make key employees and contractors aware of any known locations of rare and endangered plants in the field. BRL will train key employees and contractors in identification and have these individuals report any discoveries according to the ''BRL Scarce Resource Reporting Policy'' and protected through proper planning.	Table and Map of known locations in Section 5 Rare and Endangered Plants in the DFMP text and Appendix of Scarce Resource Policy.	GIS analysis, AVI, ecosite phases, Alberta Natural Heritage Information Centre (ANHIC) plant community classification and tracking list. Predict and identify occurrence of uncommon plant community. Vegetation Landscape Assessment Report.	Planning Standard	DFMP: Table with descriptive list and map displaying known locations of uncommon plant communities. Update any discovered rare plant locations or any damaged known locations annually and at 5-year Stewardship Report.	At the end of the 10-year FMP term the target is achieved.
	1.1.1.5. Maintain unique habitats provided by wildfire and blowdown event: (greater than X ha)	forest (see Virginia Hills Post-fire TSA).	Live trees: Retain all unburned trees recognizing timber condition, access, non timber needs. Burned trees - Compartment Scale: Retain greater than 10% of merchantable black trees in patches greater than 10% of merchantable black trees in patches 10-100 ha; and retain greater than 5% of merchantable black trees in small patches, single trees according to loggers choice Blowdown (greater than 10 ha) Future Goal: Retain all standing trees and 10% of fallen trees.	OGR Virginia Hills Post-Fire TSA Report and Section 5 Fire Protection in DFMP Text.	Targets here based on "Fire Salvage Strategy: Forest Management Planning and Operations 2002" Ensure consistency with Fire Smart objectives. Fire History Study of the BRL FMA Area. Vegetation Landscape Assessment Report. Ecological Land Classification and Wildlife Habitat Project.	Fire Salvage Strategy: Forest Management Planning and Operations 2002 (Forest Operations Branch Alberta)	DFMP: Table and map of fires that would have required TSA adjustments within the last 10 years - salvaged and unsalvaged. SRD to provide # of fires and total area burned, Report area salvaged and unsalvaged annually and at 5-year Stewardship Report.	At the end of the 10-year FMP term the target is achieved or exceeded.
	1.1.1.6. Retain ecological values and functions associated with riparian zones	Compliance with Provincial OGR.	Consistent with Provincial OGR / AOP's.	Section 5 Watershed Protection in DFMP text.	Provincial OGR. Ecological Land Classification and Wildlife Habitat Project.	Federal Fisheries Act, Water Act	Report instances where operational approvals supersede planned buffers and penalties annually and at 5-year Stewardship Report.	No variance



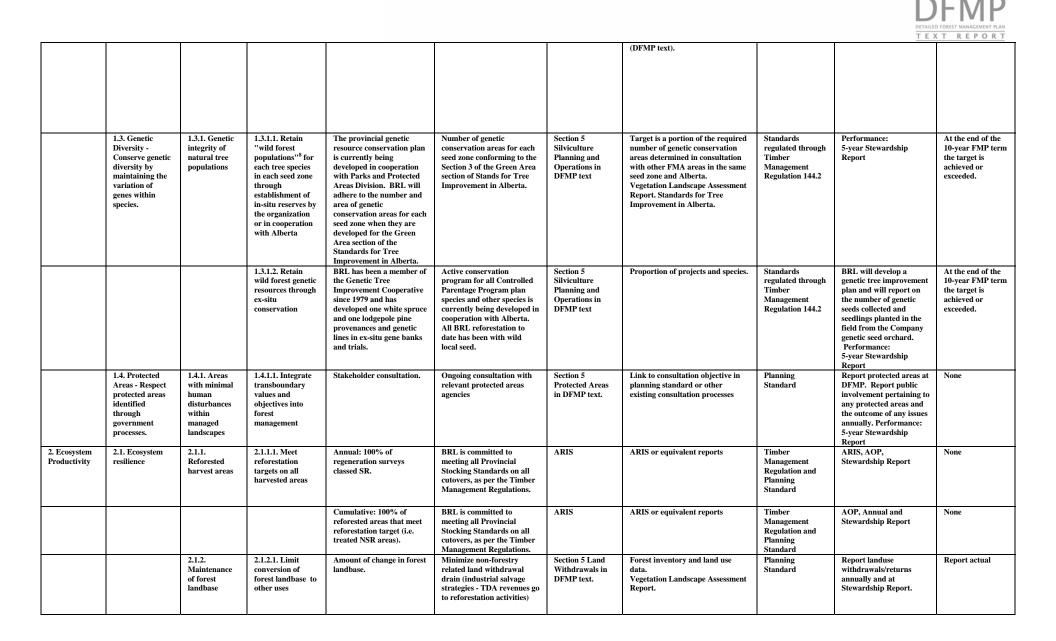




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	1.1.2. Local/stand scale biodiversity	1.1.2.1. Retain stand level structure	a) % area / volume / stems residual structure (both living and dead), within a harvest area, representative of the status (live/dead) sizes, and species of the overstorey trees by subunit and entire FMA area.	a) The target for average small patches/ha in a compartment is 0.2 patches per hectare. The target for average large patches/ha in a compartment is 0.02 patches per hectare. A large patch is larger than 0.2 hectares in size and a small patch ranges from 4 canopy trees to 0.2 hectares in size Note: Variability in harvest area-level retention within a subunit is desired.	OGR Section 7.4.	Wildlife zones, roadside vegetation screens, recreational values, aesthetics, local knowledge, ANHIC, Biodiversity/Species Observation Database (BSOD). Fire History Study of the BRL FMA Area. Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA Area. HSI Model for Moose (in progress). Vegetation Landscape Assessment Report. Ecological Land Classification and Wildlife Habitat Project.	Occupational Health and Safety Act, Forest and Prairie Protection Act	OGR compliance. Report drain and non-drain. Performance: 5-year Stewardship Report	At the end of the 10-year FMP term the target is achieved or exceeded.
			b) Coarse Woody Debris Assessment Report.	The coarse woody debris assessment report indicate that CWD levels for the entire FMA area are classed at 43% moderate (avg 100.9 m ³ /ha), 30% high (avg 161.8 m ³ /ha) and 22% low (avg 58.9 m ³ /ha). BRL commits to adhering to the OGRs.	Section 3 Coarse Woody Debris Assessment in the DFMP text and OGR	Assess pre-harvest downed woody debris condition by subunit or stand level average. Coarse Woody Debris Assessment Report. Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA area. Ecological Land Classification and Wildlife Habitat Project.	Planning Standard	OGR compliance. Performance: 5-year Stewardship Report.	FMP determined
		1.1.2.2. Maintain integrity of sensitive sites	Sensitive Sites (e.g. mineral licks, major game trails) by subunit and entire FMA area.	Strategies consistent with provincial guidelines/OGR (and with BRL Scarce Resource Policy).	Appendix of Scarce Resource Policy in the DFMP text. OGR.	Local knowledge, ANHIC, Biodiversity/Species Observation Database (BSOD). Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA Area. Ecological Land Classification and Wildlife Habitat Project.	Planning Standard	OGR compliance. Performance: 5-year Stewardship Report	None
		1.1.2.3. Maintain aquatic biodiversity by minimizing impacts of water crossings	Forestry water crossings in compliance with Code of Practice for Water Course Crossings within each VSA subunit.	Designs meet standards of the Code of Practice for Water Course Crossings	Section 5 Watershed Protection in DFMP text.	Code of Practice for Water Course Crossings: Sections 7-9 and Schedule 2. Fisheries Inventory Swan Hills Whitecourt Integrated Resource Area.	Code of Practice for Water Course Crossings	AOP Performance: 5-year Stewardship Report	None
1.2. Species Diversity Conserve species diversity by ensuring that habitats for the native species found in the DFA are maintained through time.	1.2.1. Viable populations of identified plant and animal species	1.2.1.1 Maintain habitat for identified high value species (i.e., economically valuable, socially valuable, species at risk, species of management concern)	Area of suitable habitat within the entire FMA area.	Grizzly Bear habitat targets are summarized for the 160- yr planning horizon in Figure 4-9 of the DFMP TSA document. BRL will continue to fund Grizzly Bear research by the Foothills Model Forest and incorporate the newly acquired knowledge in the next DFMP.	Section 5 Fish and Wildlife in the DFMP text and table of suitable grizzly habitat at 0, 10, 50, and 100 years. Map of suitable habitat at 0, 10, 50 and 100 years in Section 4 of the DFMP TSA.	Based on sound science, ecological considerations, wildlife zones, Committee on the Status of Endangered Wildlife in Canada (COSEWIC) list, provincially listed species, BSOD, ANHIC, Recovery plans, Fish and Wildlife Division priorities, public consultation, habitat suitability analysis, literature review, observation data, local and traditional knowledge. Sustainable Forest Management - Fish and Wildlife Strategies Report. Summary of Fish and Wildlife resources in the BRL FMA Area. Habitat Suitability Index (HSJ Model for Moose. Vegetation Landscape Assessment Report. Ecological Land Classification and Wildlife Habitat Project. Wildlife Referral Map	Recovery plans for species at risk, Federal Species at Risk Act	DFMP: For species with a suitable habitat target provide tables of area of suitable habitat at 0, 10, 50 and 100 years. Map of suitable habitat at 0, 10, 50 and 100 years. Performance: 5-year Stewardship Report	At the end of the 10-year FMP term the target is achieved or exceeded.













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			2.1.2.2. Recognize lands affected by insects, disease or natural calamities	Amount of area affected.	Area and severity of insect and disease attacks (including natural calamities) are maintained at rates appropriate to ensure other natural processes are not disrupted. BRL is committed to maintaining an insect and disease monitoring program as well as maintaining its membership on the Pest Committee.	Section 5 Insects and Diseases and Weeds in DFMP text.	Forest health surveys, inventory updates. Fire History Study of the BRL FMA Area. Forest Health Strategies Report.	Planning Standard, Alberta Forest Health Strategy and Shared Roles and Responsibilities between SRD and the Forest Industry	AOP and Stewardship Report	Report actuals
		2.1.3. Control invasive species	2.1.3.1. Control non-native plant species (weeds)	Noxious weed program.	Noxious weed program in place (implemented in 1999).	Section 5 Weed Control in DFMP text.	Field inventories. Vegetation Landscape Assessment Report.	Directive 2000-06	Inspections summarized in Stewardship Report	Report actuals
3. Soil and water	3.1. Soil quantity and quality	3.1.1. Soil productivity	3.1.1.1. Minimize impact of roading and bared areas in forest operations	Compliance with OGR.	The total area covered by temporary roads, rutting, bared landing areas, displaced soil and debris piles created by timber harvesting operations shall not exceed 5% of each harvest areas as per OGR.	Section 5 Watershed Protection in DFMP text.	Direction from Alberta. Soil Modeling Project. Ecological Land Classification and Wildlife Habitat Project. Fisheries Inventory Swan Hills Whitecourt Integrated Resource Area.	OGR's	Inspection reporting	None
		3.1.2. Minimize soil erosion	3.1.2.1. Minimize incidence of soil erosion and slumping	Incidence of soil erosion and slumping.	Complete compliance.	Section 5 Watershed Protection in DFMP text.	Direction from Alberta. Soil Modeling Project. Ecological Land Classification and Wildlife Habitat Project. Fisheries Inventory Swan Hills Whitecourt Integrated Resource Area.	Stream Crossing Guidelines	Inspection reporting	None
	3.2. Water Quantity and Quality	3.2.1. Water quality	3.2.1.1. Limit impact of timber harvesting on water yields	Forecast impact of timber harvesting on water yield.	No more than 50% of the gross forested landbase of a watershed below minimum threshold age as a result of harvesting. See Table in DFMP TSA.	Section 5 Watershed Protection in DFMP text.	Water Strategy and local needs. Soil Modeling Project. Ecological Land Classification and Wildlife Habitat Project. Fisheries Inventory Swan Hills Whitecourt Integrated Resource Area.	Water Act, Planning Standard	Performance: 5-year Stewardship Report	Report actuals
		3.2.2. Effective riparian habitats.	3.2.2.1. Minimize impact of operations in riparian areas	Riparian buffers maintained as outlined in ground rules.	Complete compliance.	Section 5 Watershed Protection in DFMP text.	Direction from Alberta. Soil Modeling Project. Ecological Land Classification and Wildlife Habitat Project. Fisheries Inventory Swan Hills Whitecourt Integrated Resource Area.	AOP 's, Stewardship Reports	AOP	None
4. Global Ecological Cycles	4.1. Carbon uptake and storage	To be determined	Develop pertinent information and stay abreast of issue	Results of carbon budget modeling.	Stay abreast of current developments.					
	4.2. Forest land conversion	See 2.1.2. above				Section 5 Land Withdrawals in DFMP text.				
5. Multiple Benefits to Society	5.1. Timber and non-timber benefits	5.1.1. Sustainable timber supplies.	5.1.1.1. Establish appropriate AAC's	Process and standards described in Annex 1&2 are followed (timber supply standards).	AAC adjustment subsequent to a 2.5% deletion of net landbase (e.g. reforestation success, fire, insect and disease etc).	Section 3 and 4 or DFMP TSA.	Consultation in planning process. Economic and Social Impact Analysis - KPMG Report. Ecological Land Classification and Wildlife Habitat Project.	Forests Act and Timber Management Regulation	Progressive and continuous	Issue specific
		5.1.2. Non- Timber Benefits	5.1.2.1. Protect Historical Resources	Historical Resources Assessment.	Identify and protect Historical Resources (Scarce Resource Policy).	Appendix of Scarce Resource Policy in the DFMP text. OGR	Historical Resource Assessments	Planning Standard	OGR Compliance Update any discovered historical sites annually. 5-year Stewardship Report.	At the end of the 10-year FMP term the target is achieved.







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	5.2. Communities and Sustainability	5.2.1. Risk to communities from wildfire is low	5.2.1.1. To reduce wildfire threat potential by reducing fire behavior, fire occurrence, threats to values at risk and enhancing fire suppression capability	Wildfire Threat Assessment, Fire Behavior Potential, Fire Occurrence Risk, Values at Risk and Suppression Capability.	BRL staff is working in cooperation with SRD to develop plans to fire proof the FMA area especially around the community of Swan Hills. SRD and BRL have been working with Alberta Power and TransAlta to assess all powerlines and identify candidate areas for tree freeing operations to reduce the risk of powerline ignition.	Section 5 Fire Protection in DFMP text, includes map of fire behavior potential, map of fire occurrence risk, map of wildfire threat, map of values at risk and map of suppression capability.	Planning process, provincial/regional wildfire threat assessment. Whitecourt Fire Management District Landscape Assessment Project (in progress)	Planning Standard	Next DFMP: Maps and Tables of indicator at 0, 10, 20, and 50 yrs. Performance: 5-year Stewardship Report	Issue specific
		5.2.2. Provide opportunities to derive benefits and participate in use and management	5.2.2.1. Integrate other uses and timber management activities	Extent of various uses.	To be determined in the planning process.	Section 2 Public Involvement Process in DFMP text.	Consultation and co-operation	Legislation and policy	Report public involvement and the outcome of any issues annually and at 5-year Stewardship Report.	Issue specific
		5.2.3. Forest Productivity	5.2.3.1. Maintain Long Run Sustained Yield Average Timber Supply	Natural to natural transition timber supply analysis.	No decrease from the natural to natural timber supply analysis.	Section 3 of DFMP TSA.	FMP Timber Supply Analysis.	Planning Standard	Results of G&Y program and comparison of planned & actual harvest volumes.	Report Actual
6. Accepting society's responsibility for sustainable development	6.1. Aboriginal and treaty rights and aboriginal forest values	6.1.1. Compliance with government regulations and policies	6.1.1.1. Implement public involvement program	Meet Alberta's current expectations for aboriginal consultation.	Consult at the community level with designated representatives of affected aboriginal communities (Public Involvement Process). Helped fund/coordinate a sustainable timber supply analysis for the Alexander Land Claim.	Section 2 Public Involvement Process in DFMP text.	Alberta to provide direction. Cultural Heritage Resource Study	Planning Standard	Report public involvement pertaining to aboriginals annually and 5-year Stewardship Report.	To be determined
	6.2. Public participation and information for decision-making	6.2.1. Meaningful public involvement is achieved	6.2.1.1. Implement public involvement program	Meet expectations of Section 5 of CSA Z809-02.	Public Involvement Process, RFAC meetings, consultation with general public, DFMP document made available. Continue to provide funding and support to projects that provide information for decision-making (e.g. FORWARD project, Foothills Model Forest Grizzly Bear Studyetc).	Section 2 Public Involvement Process in DFMP text.	Consultation	Planning Standard	Report public involvement and the outcome of any issues annually and 5-year Stewardship Report.	To be determined

(1) Elaboration of target already found in DFMP (includes more information regarding the scope of the issue).

(2) Proposed reporting, subject to change (indicator against target).

(3) Seral Stage: definitions shall include the following categories: Initiation, Establishment, Aggradation (stem, exclusion), Mature, and Old (Song 2002, Ecological Basis for Stand Management in Alberta). Old forest is defined as stands 40 years older than MAI culminating age.

(4) Subunit: any acceptable stratification of the DFA. Delineation of planning "subunits" for the DFA will be made during FMP planning. However, delineation shall reflect ecological considerations. Planning subunits may correspond to planning compartments.

(5) Cover classes: definition will be developed through FMP planning. In general, cover class is a coarser grouping than the cover type (AVI stand label) but provides finer resolution than the cover groups (C, CD, DC and D) and will reflect leading species and mixedwood types.
 (6) Patch: a stand of forest in the same seral stage, and not split by a lineal feature greater than 8 m wide. Linear features in this definition include roads, pipelines, powerlines, and rivers, but do not include seismic lines.

There is a forested area greater than 100 hectares in size located beyond edge effect buffer zone (7.2) along the forest edge (7.1). For interior forest objective use a common age definition for all cover classes to prevent breaking up forest patches that have a common origin date.

(7.1) Forest edge: (A) a linear disruption in forest cover greater than 8 m in width (seismic lines do not count), or (B) the line along which forest seral stage class changes.

(7.2) Edge effect buffer zone: 60 m where adjacent area is non-forested or less than 40 years old; 30 m where adjacent forest stand is >=40 years and less than mature forest; 0 m where adjacent stand is mature forest.

(8) Wild: genetic materials of native species originating from natural regeneration (Standards for Forest Improvement in Alberta).



