(Revised) 2007 FMP - Alberta-Pacific FM	A Area - Objectives / Strategies / Monitoring Matrix		#		Re	oortii	ıg
Objective / Value (29 in Total)	Strategy (Means to Achieving the Objective) (196 Strategies)	Measurement Criteria: Monitoring Activity	Indicator - Unit of Measurement / Variance	•	AOP / GDP	Periodically/Uth	Report Title (Current & Potential)
Objective 1 FMP Section 1.1 SOCIAL						-	
To continue community engagement and consultative processes which involve stakeholders in the management planning process and encourage input at all stages of planning.	 CES Four-part Strategy: Community Relations, Public and Stakeholder Involvement, Aborigi Relations, and Regional Government Initiatives. 	INVanber of meeting / year, - documented minutes. Regional participants. Sustainability Report; Community Report; Socio-Economic Analysis (See Objective # 23)	#/yr		,	٤	
Objective 2 FMP Section 3.1 ECOLOGICAL							
To update the AVI inventory and continue to provide sound data for planning.	1. Maintain the AVI through a photo-based update and field program. (See # 3 below)	Number of township equivalents completed each quadrant vs. planned; Corresponding upgrade of FMU photo library	% Variance from target # of townships		3	¢	
	 Continue to utilize leaf-off colour-infrared photography to enhance the identification of conife understory (DU) and crown components in mixedwood stands and map to AVI standards. (Note Approved AVI currently has 100% coverage of "DU" stands) 		# of plans used in AOP - Y/N	x	3	<u>د</u>	
	3. Update one tenth of the FMA (approximately 65 townships) every year.	Number of township equivalents completed each quadrant vs. planned usin "Softcopy -AVI" (SAVI) inventory system.	% Variance from target # of townships		3	<u>د</u>	
	4. Systematically update depletions, natural disturbances and land use. The FMA area harvest an disturbance depletions will be updated annually through remote sensing, and land use activities (roads, etc) will be updated on a ten-year cycle (Concurrent with #3) using Al-Pac's remote sensi products.	FMA area landuse depletions are updated in during AVI updates and	% Variance from target # of hectares / yr		,	c	
	 Supplement the temporary sample plot program with additional samples to ensure representati and statistically sound data for each of the common forest cover strata. 	Number of TSPs measured / year in selected strata	# Plots / yr as per G&Y plan.		3	4	
	 Continue to establish and maintain the current network of permanent sample plots to monitor and measure growth and succession in forest types. 	Quadrant report on status of PSPs - continuing measurements and new PSPS (# of plots)	# Plots / yr as per G&Y plan.		3	¢	
	 Prepare a growth and yield strategy (business plan) within one-year of plan approval to meet future growth and yield needs. 	Approved growth and yield strategy (PSP / TSP targets)	Approved Plan - Y/N			x	Growth & Yield Strategy (See FM Appendix)
	8. Continue Alberta-Pacific's participation in the Western Boreal Growth and Yield Cooperative (WESBOGY).		Membership -Y/N			x	UofA WESBOG Annual Report
	 Monitor regeneration success on roads / decking / processing areas. 	PSPs inputted / measured / year.	# Plots / yr as per Road/Decking / Processing PSP plan.		3	¢	Growth & Yield Strategy (See FMI Appendix)

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Objective 3 FMP Section 3.2 ECONOMIC							
To salvage suitable timber that can be utilized recognizing economic and ecological constraints.	I. Promptly evaluate fire-killed, wind-thrown or insect and disease damaged timber for salvage.	Percent of hectares salvaged from the net merchantable landbase; actual delivered volume vs. forecasted FHP volume in salvage area.	ha salvaged / fire / net landbase: m3 Variance - planned vs. actual		x		
	 Purchase industrial salvage (from pipelines, seismic lines, etc.) and assist industrial users in feasibility and salvage plans. Apply salavage volumes to FMU cut control. (Exception is LIS programs - width < 2m) 	Gross Volume (m3) / year . # of Purchase agreements / year - if requested. Industrial savalge volumes applied @ cut control.	m3 / yr: # of plans: m3/year per FMU	x	x		
	3. Purchase salvage from agricultural land clearing.	# of fibre purchase agreements / quadrant; volume / quadrant	# of agreements / yr; m3 yr		x		
	4. Utilize TDA process for FMU cut control.	Industrial savalge volumes applied @ cut control - FMU.	m3/year / FMU		x		
	5. Prepare an annual MOSA plan. (See objective # 9)	Approved MOSA plan.	Approved Plan - Y/N		x		
	6. Follow the provincial fire salvage policy (Alberta SRD, Forest Operations Branch 2002): a) the FMU level plan to leave a minimum of 10% of the merchantable black timber in patches > 10 ha. b) at the planning unit level, leave on average 10% of merchantable black timber in patches 10 hectares and a minimum of 5% merchantable black timber in small patches and single trees according to loggers choice.	Ocooperation.	Actual fire metrics - ha in patches (stand / planning unit level) Actual vs. target variance			x	OGRs
	 Evaluation of the effects of salvage logging on boreal forest landscapes should be undertaken t the forest companies. (Conifer and deciduous landscapes) 	Summary report on conifer and deciduous salvage logging. Actual volume vs. planned vs. TSA volume estimates (All forest companies activities)	Complete an evaluation Y/N; Hectares Harvested within fires	-		x	Research Summary Stewardship Appendix
	 Incorporate into the next OGRs new fire planning protocols - landscape and stand structure retention, utilization and timelines 	New and approved OGR protocols.	Y/N			x	OGRs
Objective 4 FMP Section 3.3 ECONOMIC							
Support SRD in its mandate to minimize losses from epidemi of forest insects, diseases and infestations of restricted noxion weeds, and large catastrophic fires on the FMA area.	e l . Adhere to the "Alberta Forest Health Strategy and the Shared Roles and Responsibilities betwoe SRD and the Forest Industry" document.	Approved in FMP.		x			AB SRD document
	 Identify outbreaks of insects / disease / weeds to SRD, as per Forest Management Branch directives 	Number of outbreaks identified by staff / year - provided to SRD	# outbreaks / yr - reporter to SRD	1	x	:	
	3. Continue to train Al-Pac and forest companies' personnel in pest identification	Number of trained woodlands staff; documentation on training program.	# of trained personnel		х		
	4. Cooperate in the Northeast Boreal Co-operative Weed Management Committee	Number of meetings attended / year	# meetings attended / yr		Х		
	5. Cooperate in the Northeast Boreal Integrated Pest Management Working Group	Number of meetings attended / year	#		X		
	 Promote public awareness of fire through prevention and detection discussions during tours, or signs, and in advertisements. 	Documentation on prepared awareness publications.	# of communication vehicles			x	Fire Control Plan

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	 Ensure continued awareness of staff and contractors to fire conditions and the importance of fin precautions during operations. 	Demonstration on what has been done and of how this is communicated. Provide list of training and attendees. (See #2 above)	Y /N			x	Fire Control Plan
	 Provide Woodlands personnel and contractors with adequate training to initiate action on newl discovered fires and to assist with the suppression of fires during emergencies on the FMA area. 	Provide list of trainees.	List to SRD			x	Fire Control Plan
	 Experienced personnel will obtain "Industry Dozer Boss" (or equivalent) level training through courses provided by Alberta SRD. 	Provide list of trainees.	List to SRD			x	Fire Control Plan
	10. Provide fire fighting personnel and equipment as outlined in the Fire Control Agreement and annual plans. During fire season, equipment caches will be located near operating crews and Alberta-Pacific and contractor vehicles will carry fire-fighting equipment: as identified in Section of the Forest and Prairie Protection Regulations 135/72.		Map in Fire Control Pla	1		x	Fire Control Plan
	11. Cooperate with AB Forest Protection with their "Firesmart" program.	Where applicable, incorporated activities into the TSA.	TSA Inputs	x		_	2007 TSA
Objective 5 FMP Section 3.4 ECOLOGICAL						-	
To develop an efficient road network for log deliveries throughout the FMA area, that minimizes the amount, distribution and duration of the roading footprint, and to mitigate the effects of roads on fish and wildlife, and sustaining ecosystem functions.	 Continue to develop an access development map (AD-map) of th<u>forest companies</u>'expected future roading needs to facilitate government and industry synergy in road corridor planning (Appendix 5). 	Completion of the "AD-MAP" for insertion in the FMP.	Map included with FMP	x			
	 The forest companies expect not to exceed an additional 1,500 km of permanent road in the FMA area throughout the duration of the approved harvest sequence. (3 TSA periods) 	Kilometres of forest companies LOC roads / quadrant	# of Km / quadrant - variance to target		1	ĸ	
	 The forest companies will not build more than 3.000 km/year of temporary road in the FMA area throughout the duration of the approved harvest sequence. 	Kilometres of forest companies temporary roads / year	# of Km / quadrant - variance to target		;	ĸ	
	 Implement and support an aggressive ILM program to maximize synergies among industrial users and government agencies to reduce the human footprint on the landscape. (See Objective # 21) 	Number of forest industry road km under a co-operative road-use agreemen vs. total number of road km.	t Km in agreements & % of total roads.		,	ĸ	
	 Locate and design main haul roads to: (1) minimize total hauling and maintenance costs, (2) avoid duplication of existing road corridors, (3) maintain the highest level of safety. 	Remain within forest companies road's budgets. Number of penalties for not meeting OGR road specifications. Number of safety infractions by forest industry vehicles / year.	# OGR penalties / quad. # of safety infractions / y	r	x	ĸ	
	6. Minimize development within key wildlife areas (as agreed upon between the forest companie and Alberta Sustainable Resource Development) and negative environmental effects, including effects on soil, water, wildlife habitat and populations, and losses in productive forest growth. The companies will continue to work with Alberta Sustainable Resource Development staff to ensure effective mitigative processes are undertaken for negative environmental effects.	key wildlife zones. Km reclaimed.	Km / quadrant in wildlify zones; Km reclaimed / quadrant		;	ĸ	

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	 Utilize temporary roads to access cublocks from the main haul roads, and identify those temporary roads that will see recurrent use so that modified reclamation procedures can be implemented that will minimize erosion potential and costs. 	km of temp roads vs. km of reclaimed temp roads / quadrant; 100% of temp roads are deactivated.	Km built / reclaimed / quadrant		x	
	 Utilize signs to notify the public of the temporary nature of access roads. 	Number of signs utilized.	# of signs		x	
	9. Continued co-operation and compliance with the Boreal Caribou Committee guidelines.	# of outstanding grievances with BCC guidelines; # of range plans developed & implemented.	# of grievances; # of plans; # of plans implemented		x	
	 Investigate efficient road planning with innovative spatial forest planning tools at the TSA lev throughout the life of this plan. 	Completion of a case-study on a road module within a TSA	Completed Case-study by 2011			X Case-Study
Objective 6 FMP Section 3.4 ECOLOGICAL					-	
To ensure that human development, use and management of the roads take into account the safety of all users (industrial, recreational, Aboriginal) and mitigates the potential negative environmental effects associated with access.	 Areas with high public use will have appropriate signage in place to caution and inform people about harvesting activities to minimize the potential for accidents. 	# of signs in FMA area.	# of signs		x	
	 Access controls such as barriers, berming, bridge removals, and roll back will be utilized on a specific basis and may be addressed in the "Operating Ground Rules for the Alberta-Pacific FMA area." 		total # / quadrant		x	
	3. The forest companies working with SRD will investigate the feasibility of the establishment of "No Hunting Zone" corridors (possibly 0.4 km on each side of centre) on all new permanent road for three years following construction. After this period the need for the no hunting corridors would be reviewed in consultation with local community groups within the scope of an overall wildlife management strategy. "Trapping activities would not be affected/Note: Alberta SRD is primary manager of all F&W resources)		Feasibility Analysis with FMTF and Alberta SRD			x
	4. The company will facilitate research in an adaptive management approach to understand the effects of human access and ways to mitigate such effects (e.g. landscape models).	Research summary	# research projects		x	Research Summa Stewardship Appendix
Objective 7 FMP Section 3.4 ECOLOGICAL						
Utilize soils research in the FMA area to minimize in-block road and harvest equipment impacts to ensure vigorous post harvest regeneration.	 Utilize the existing soil guidelines (2000 OGRs) until a new system is developed. 	# of non-compliance reports	# of grievances / yr		x	
	2. In co-operation with SRD, develop a slash hazard protocol for the FMA area.	Prepared document on protocols. (SRD approved)	Completed report by 2011			X OGRs
	 Develop a monitoring and reporting program to quantify productive forest landbase losses due roads, landings and decking areas. 	Prepared document on protocols. (SRD approved)	Completed report by 2007			X OGRs

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Objective 8 FMP Section 3.5 SOCIAL							
Protect species identified "at risk" or as socially important and meet Alberta government guidelines and ground rules relevant to concerns over specific species.	 Administer a trapper monitoring program throughout the FMA area. Review the program every 3 years to determine future requirements of the program. 	# of trappers on program vs. total # of traplines or trappers	# of trappers in program: Program review document		x		
	 For fish habitat protection, continue to refine and implement "best practices" with regard to read/stream crossings - See OGRs. 	Documented best-practices protocols; Non-compliance reports	# of grievances / yr; complience with OGRs	,	:	x	OGRs
	 The forest companies will consult with regional stakeholders and the FMTF to assist in identifying species recognized as "at risk" or socially important. 	Continued FMTF participation in F&W strategies-documented in minutes of FMTF.	f FMTF review of F&W issues			x	FMTF Minutes
	4. Prepare management strategies to conserve species at risk and socially important species - Caribou, Moose, Canadian Toad, Warblers (4 species), Barred Owl, Goshawk, and Brown Creeper. (<i>Suite of species selected by AB SRD</i>). Project habitat in the FMA area for the selected species.	OGR non-compliance-infractions/year; Habitat models	# of grievances / yr	x	x		FMP Appendix - Habitat model results
Objective 9 FMP Section 3.6 ECONOMIC							
Manage eight FMUs under an integrated landbase planning system (empirical yield curve set - discreet landbases) and tw FMUs under a mixedwood landbase system (mixedwood yield curves) to maintain or increase both coniferous and deciduou: fibre flows from the FMA area. FMU A15 through MOSA.		Currently - 11 FMUs, Move towards single sustained forest management unit.	# of FMUs	x			
	 Optimize the fibre volume (coniferous and deciduous) flow from the FMA area. 	TSA for 11 FMUs % Harvest / quadrant vs. approved AAC. (m3) Hectar variance by AAC profile. Cut-control is used to determine volume summaries.	m3/quad AAC Variance in GDP: Ha variance / quadrant	3	x		
	3. Include all the FMA regional landbase exclusions or "donuts" in the TSA	Completed TSA for gross FMA area (6.8 million ha)	Y/N	x			
	 Continue to explore TSA / Forest Management simulation models that can perform forest succession and calculate an AAC. 	Approved AAC from modeled forecasts.	Y/N	x			
	 Continue to develop successional yield curves for mixedwood sites and refine empirical yield curves. (See Forest Inventory Section 3.1) 	Approved yield curves for FMA area: empirical and mixedwood.	Y/N	x			
	 Implement silvicultural treatments on all cutblocks (See Objective # 15) to provide vigorous forest regeneration to meet or exceed silvicultural guidelines. 	SR vs. NSR blocks. Variance from FMP silviculture table / operator.	ha Variance @ quadrant			x	Silviculture Repor
	 Adopt mixedwood management landscape strategies, harvesting techniques, silviculture, and successional yield curves. (See Table 3.6 and Forest Renewal Section 3.6) 	Two FMU's have an approved mixedwood TSA for duration of the FMP.	Y/N	x x	:	x	Silviculture Report
	 Utilize basic harvesting techniques and standard silviculture based on the OGRs and silvicultur regualtions. 	regulations.	Y/N	x x	:	x	Silviculture Report
	9. Operate under the approved OGR protocols and future amendments.	Approved AOP; # of non-compliance penalties / annum	Y/N # of grievances / y	Х	x		
	10. Manage A15 and MOSA under the approved principles.	Approved MOSA GDP.		Х	:		Annual MOSA Report

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Objective 10 FMP Section 3.6 ECONOMIC						
Provide the opportunity to investigate/evaluate the feasibility of improving fibre supply through Intensive Conifer Forest Management (i.e. EFM) in the FMA area.	I. A conifer Quota Holder will prepare a conceptual Intensive Conifer Forest Management "case study" within SRD enhanced forest management technical protocols.	One case-study prepared and presented to the forest companies, SRD and the FMTF. (Al-Pac is not responsible for this objective)	Y/N - prepared by a Quota Holder			EFM Case-Study
Objective 11 FMP Section 3.6 ECOLOGICAL						
Maintain forest cover patterns by designing and implementing landscape level harvest plans, including aggregated harvesting system, that more closely resemble natural disturbance patterns at the landscape level.	 Maintain existing forest cover patterns at the landscape level by implementing landscape level harvest plans involving aggregated harvest plans (i.e. single-pass systems), as outlined in the OGRs. 	Adherence to spatial sequence (% variance from TSA target) ;Adherence to major cover group harvest profile (% variance from TSA target); Pre- industrial TSA cas-study for selected FMUs; Compliance with OGRs with respect to stand boundaries. Measure unplanned areas.		x x		Case-Study
	 Landscape level harvest plans and cutblocks are planned and harvested by following natural stand boundaries and stand types. 	Approved harvest plans following natural stand types.	Y/N	x		
	 Where human activities have fragmented forest cover patterns, the companies may examine th pre-industrial pattern as a template for future landscapes. 	Analysis on pre-industrial pattern	Y/N		x	Case-Study
	4. Clustering of cutblocks within a disturbance or planning unit based on the natural disturbance model. Average cutblock size may be similar, but not limited to, the historical average that varie from 15 to 26.4 bectares that was encountered under the two-pass system that was used prior to FMA initiation and in the first 8 years of FMA area management.	Actual average cutblock size (all forest companies & MTU) versus historica (average hectare block size (variance) - measured on a quadrant basis.	d % Variance of avg. ha cutblock vs. historical average	x		
	 An increase in the variation of patch or cutblock size and shape that should more closely approach the naturally existing variation on the landscape. 	Average actual block-size vs. pre-industrial case-study analysis - % varianc from study metrics.	e % increase in avg. cutblock size / quadrant	x		
	6. Maximum allowable cutblock ("cc") size of 500 hectares.	Size of largest cutblock - empirical systems	# cutblocks @ 500 ha / quadrant	x		
	7. Variation in disturbance unit size and distribution; within a FMU.	Approved AOP with increased variation vs. historical AOP planning unit size (1993-2004) - % change	Range & variance of planning unit sizes	x x		
	8. No aggregated disturbance units larger than 30,000 hectares.	Number of units > 30,000 ha. = 0	% units greater than target	x x		
	 Manage for a range of older-forest stands (over-mature) on the FMA area landscape (See Secti 3.16 – Old Forest Retention in the Boreal Forest) 	NRV for each major stratum (D, Mixedwood, Sw, Pj, Sb) - % variance fron target.	VS. ISA	x		
	10. Model the distribution and amount of juvenile, immature and mature seral stages in each maj stratum at 10, 50, 100 and 200 years while gradually moving towards a regulated (equal) distribution through the 200 year planning horizon.	aVariance in hectares from the current state of the FMA area forest (based of AVI)	A Quadrant status of seral stages - variance from initial TSA situation	x		
	 Model the amount of mature/old interior forest patches at current, 10 and 50 years within the gross FMA forest area, and retain 75% of the current mature/old interior forest patch size. (as per the Alberta Vegetation Inventory hectares). 	Within the TSA - Area (ha) in mature/old interior forest at 10, & 50 years; Measure variance at each quadrant end with current status.	Quadrant status of patches - variance from initial TSA situation	x		

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	12. Model the distribution of forest patches at current, 10 and 50 years within the gross FMA fore area, for the mesic strata (deciduous, mixedwood and white spruce), jack pine strata and black spruce strata and remain within ≤25% of the total patch landscape of the mesic, Pj and Sb strata.	Within the TSA - Area (ha) in mature/old interior forest at 10, & 50 years; Measure variance at each quadrant end with current status.	Quadrant status of patches - variance from initial TSA situation		,		
Objective 12 FMP Section 3.6 ECOLOGICAL							
Retain forest structure in harvested cutblooks in varying amounts acros the FMA area.	 Live wildlife trees and snags are left standing in order to maintain habitat for cavity nesting species and to facilitate natural stand dynamics. 	Annual harvest block summary of structure retention metrics - all operators Operator Stand Structure audits on a sample of blocks. (Statistically significant sample)	; % blocks audited; Estimate of structure		x		
	2. On Al-Pac blocks, trees in clumps (Minimum of 5 trees) of varying sizes or individual stems an left throughout the block. Larger clumps may also be left that may provide wildlife cover and habitat. Stand structuring also includes utilizing block features by avoiding damage to paches of understorey shrubs and wet areas (draws, water sources) and leaving large windfirm conifer (also valuable seed source). Site-specific practices will be dependent on initial stand and site characteristics and desired block-to-block variation.	Operator Stand Structure audits on a sample of blocks. (Statistically significant sample)	% blocks audited; Summary of retention - ha / block / yr		x		
	 Structuring of larger blocks (usually greater than 100 hectares) may include a greater range in clump sizes or treed corridors to provide wildlife linkages and feathered edges on the windward side of blocks. (See Alberta-Pacific Stand Structure Guidelines) 	Annual harvest block summary of structure retention metrics - all operators Operator Stand Structure audits on a sample of blocks. (Statistically significant sample)	% blocks audited; Summary of retention - ha / block / yr		x		
	4. For Al-Pac and the MTU program, in ten FMUs an average of of 5% of the deciduous merchantable volume and 5% of the merchantable conifer volume will be retained; in addition to unmerchantable structure.	Annual harvest block summary of retention metrics - all operators - ha/yrFMU; Quadrant summary in Stewardship report. Operator Stand Structure audits on a sample of blocks. (Statistically significant sample)	% blocks audited; Summary of retention - ha / block / yr: Target variance		x y	4	
	 Stand structure will not be retained in blocks where forest health issues warrant eradication of a mature tree species to combat infestations and diseases (I.e. pine beetle and mistletoe). 	I of affected blocks	hectares		x		
	6. Where conifer and deciduous blocks combine to exceed 100 heactres an average of 5% structure will be retained by all operators. This includes all blocks harvesyed within 1-5 years of each other		% blocks audited; Summary of retention - ha / block / yr:		x y	<u>د</u>	
	7. For the Quota Holders, the tragets are three-fold for the 10 FMUs: a) In blocks less than 24 ha retention will focus on snags, immature confirer understories, non-merchantable stems and clumps to safeguard special features and/or other forset values – no specific traget for merchantable structure. b) In QH cutblocks in cutblocks from 24 - 100 hectares, an average of 1% of the confirer merchantable volume and 5% of the merchantable deciduous volume will be retained. c) In QH cutblocks greater than 100 hectares, an average of 5% of the confirer merchantable volume and 5% of the merchantable deciduous volume will be retained.		% blocks audited; Summary of retention - ha / block / yr: Target variance				

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Objective 13 FMP Section 3.6 ECOLOGICAL						+	
Utilize reforestation treatments (silviculture) that provide fo vigorous forest regeneration to meet or exceed reforestation standards in order to achieve yield objectives as set out in th TSA		Stiviculture Report - ha variance to FMP treatment table; SR vs. NSR variance - @ quadrant	NSR vs. SR / quadrant; Variance from table	x	x	X	Silviculture Report ARIS
	2. Until ARS is approved, the reforetation standard will be as described in the AB Regeneration Survey Manual.	Approved ARS	NSR vs. SR / quadrant; Variance from matrix		x		ARIS
	3. The forest companies will move towards ARS. (See Objectrive # 17)	Approved ARS	ARS Approval				ARS Strategy
	 No reforestation / reclamation of any forest company cutblocks within FMU A15 MOSA. 	Annual MOSA plan.	Total planned hectares		x		MOSA Plan
	 In the TSA all post-harvest stands return to their pre-harvest yield strata (composition / density yield). DU stands have unique transitions in the TSA. 	2011 TSA	Total planned hectares	x			TSA
Objective 14 FMP Section 3.6 ECONOMIC							
Continue the maintenance and enhancement of a block-leve silvicultural record keeping system that is compatible with Alberta SRD requirements.	I I. Continue to utilize and maintain the current Woodlands "The Forest Manager (TFM)" for silvicultural records and ARIS.	Described in Silviculture Report - Y/N	Y/N - Implement TFM		x		Silviculture Report ARIS
	2. Explore and implement a new information system and evaluate existing systems.	Described in Silviculture Report - Y/N	Y/N			X	Silviculture Report
Objective 15 FMP Section 3.6 ECONOMIC						-	
Replace incidental conifer by regenerating or protectin sufficient conifer growing stock to produce an equivalen volume of conifer at rotation.	g 1. Replace conifer from deciduous stands (D and D(C)) by increasing the conifer component in treforested stands (D, D(C), DC, CD).	Number of hectares reforested to equivalent conifer volumes. NSR report of incidental conifer planting sites. Adherence with silviculture strategy matrix.	# of Ha treated / yr			2	Silviculture Report
	 For every 200m3 of conifer harvested from D and D(C) stands an equivalent of one hectare conifer growing stock will be replaced in the FMU of origin. 	Number of hectares reforested to equivalent conifer volumes. NSR report of incidental conifer planting sites. Adherence with silviculture strategy matrix.	NSR vs. SR / quadrant;			2	Silviculture Report
	 Use retained post-harvest conifer (e.g. high effort understory protection) to contribute to growi stock required for incidental conifer reforestation. 		# of Ha treated / yr		;	()	Silviculture Report
	4. Replace incidental conifer from DC (FMU dependent) stands in accordance with the silvicultu matrix and to meet a future ARS.		Compliance - Y/N		x		Silviculture Report
	5. Through TFM continue to track the hectares and volume attributable to incidental conifer replacement on the FMA area.	TFM / ARIS	Compliance - Y/N		x		AOP
	6. Utilize the silviculture matrix.	Approved AOP	Compliance - Y/N		x		AOP

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	 Report incidental volume replacement in the AOP; incidental reforestation monitoring in the stewardship report. 	Approved AOP	Compliance - Y/N		x y		Stewardship Report
Objective 16 FMP Section 3.6 ECONOMIC							
Continual integration of all forest management activities by Quota Holders, Alberta-Facilic and the Alberta SRD administered Conifer Timber Permit (CTP) program through the co-operative implementation of forest management strategies on the FMA area.		# of meetings / year; # of integrated harvest plans; # of FHPs that required the area manager to intervene.	# / yr - minutes available # of integrated plans / quadrant			x	Auxiliary Report
	2. Work with all forestry companies to ameliorate other industrial users activities (i.e., ILM).	# of cooperative ILM plans / harvest plans per quadrant.	# of AOP - ILM plans / quadrant			x	Auxiliary Report
	 Prepare data-sharing agreements between Alberta-Pacific and all quota holders, and Alberta SRD. 	# of data-sharing agreements.	# of agreements			x	Auxiliary Report
	 Investigate a collective planning system for selected FMUs (i.e. one planning team). 	# of meetings - minutes; finalized system.	# / yr - minutes available			x	Auxiliary Report
	 Explore the initiation of timber supply zone based silviculture liability accounts and/or joint reforestation working groups 	# of meetings - minutes; initiation of a joint liability account.	# / yr - minutes available			x	Auxiliary Report
	6. Employ silviculture systems as detailed in the matrix.	Sign-off of matrix by all forest companies.	Compliance with matrix			x	Silviculture Report
Objective 17 FMP Section 3.7 ECONOMIC						-	
	1. The forest companies and SRD will design ARS that strive to link statum level productivity to	Approved monitoringSystem					
design and implement Alternative Regeneration Standards (ARS) for FMA area forest growth and yield at the FMU level.			Program presented to SRD - Y/N	x			
	2. Design a growth and yield monitoring program to support AR5	Approved plar	Y/N	X			
	 In cooperation with the Mixedwood Management Association, design a boreal forest silvicultural / harvest guide 	Silviculture Guide	Y/N	x			
	 Improve stand level successional growth and yield modeling for alternative silviculture system 	New Data / Models - renewed successional yield curves - approved - Y/N	Y/N - new curves developed	x			
	5. Improve empirical growth and yield projections with additional data. (See Forest Inventory section)	# of TSPs / PSPs per quadrant - approval of improved empirical yield curve	s Y/N - new curves developed	x		_	
Objective 18 FMP Section 3.8 ECONOMIC							
Alberta-Pacific and the Quota Holders will continue to explore forest simulation models that reflect successional and silvicultural treatments.	 Continue to investigate stand-based forecasts with simulation models (e.g. FORECAST, TASS SORTIE, and the Mixedwood Growth Model (MGM)) - the design of future forest growth simulation models. 	Research summary	Y/N		3	5	Research Summar Stewardship Appendix
	 Empirical yield curves will still be utilized and enhanced through additional field data plots fo pine, black spruce, and managed conifer strata - mostly pure strata. (See Section 3.1) 	# of TSPs / PSPs per quadrant; approval of improved empirical yield curves	Y/N	x			
<u>-</u>	 The forest companies will continue to pursue the next generation of TSA spatial simulation models married to stand-based G&Y forecasts. 	Research summary	Y/N		,		Research Summar Stewardship Appendix

(Revised) 2007 FMP - Alberta-Pacific FM	A Area - Objectives / Strategies / Monitoring Matrix		#	 	Rep	ortin	g
Objective / Value (29 in Total)	Strategy (Means to Achieving the Objective) (196 Strategies)	Measurement Criteria: Monitoring Activity	Indicator - Unit of Measurement / Variance	FMP	Stewardship	Periodicaliy/Oth	Report Title (Current & Potential)
Objective 19 FMP Section 3.11 SOCIAL							
Contribute towards the socio-economic good of the region, and the responsible use, protection and practical monitoring of the many social and cultural values.	 Develop realistic and practical criteria and indicators that measure and monitor FMA area economic and social benefits. 	Research summary and progress reports by socio-economic research teams	Y/N - Socio-economic indicators report prepared by 2011	1	x		Research Summar Stewardship Appendix
	 Support regional interest groups in the identification and development of the FMA area's recreational and tourist potential. The forest companies will continue to work with recognized recreational groups to facilitate recreational opportunities. 	# of meetings / quadrant & # of grievances	# of groups supported		x		
	3. Co-ordinate harvest planning with recreational user groups and commercial tourism operations to protect or enhance their opportunities. Where there are high tourism values (e.g., around lakes and permanent roads) and identified wilderness values, harvesting would be carried out in a manner that could maintain the visual quality.		# of stakeholders informed; # of plans changed		x		
	wilderness areas and minimize the effects of harvesting activities and duration on these areas.	# of meetings / quadrant & # of grievances	# of stakeholders informed		x		
	5. When an appropriate course is developed the forest companies will provide training opportunities for selected field staff in the identification and documentation of historic and culture sites and plants.	# of trained staff al	# of trained staff		x		
	 Continue to offer Global Positioning System (GPS) services for Traditional Land Use studies o upgrades of studies in existence. 	# of requests for assistance	# of TLUS assisted with GPS		x		
	7. Continue co-operative initiatives with non-government organizations (e.g. Ducks Unlimited - Ducks and Trees Program).	participation in initiatives	# of co-operative MOUs		x		
	8. Participate in the Boreal Conservation Project (BCP) with Ducks Unlimited.	Ongoing MOU with DU	Co-operative MOU		x		
	 Participate in management planning initiatives affecting the Athabasca and Clearwater River valleys, and other significant ecological and environmental initiatives affecting the FMA area. 	# of meetings / quadrant	# of meetings / quadrant		x		
Objective 20 FMP Section 3.12 ECOLOGICAL							
Identify a series of ecological benchmarks representative of the habitat diversity of the FMA area	1. Complete protected area gap analysis for the FMA area.	Completion of gap analysis.	Completed Report			x	Protected Area ga report
	 In association with interested and informed stakeholders, assess existing protected areas (See Chapter 2 - Wildland Parks summary) and unmanaged areas with limited industrial activity for inclusion in a network of ecological benchmark areas within or adjacent to the FMA area. 	Assessment report on protected areas	Completed Report			x	Protected Area Assessment Repo
	 Establish a program that will utilize ecological benchmarks to monitor biological diversity and ecosystem function by comparing harvested vs. non-harvested landscapes as part of an active adaptive management system (See Objective # 26) 	Initiation of a biological monitoring program - Alberta Biomonitoring Program (ABMP).	# plots monitored			x	ABMP Report
	 Monitor biological diversity and ecological processes (as defined by the AFBMP) over time on ecological benchmarks and areas under sustainable forest management. 	Continued implementation of a biological monitoring program - Alberta Biomonitoring Program (ABMP).	# plots monitored			x	ABMP Report
	 Potential areas may be deferred from the harvest sequence while the forest companies work wit interested stakeholders in order to gain legislative protection for sites. 		# Hectares Deferred in TSA	x			
	6. Complete a High Conservation Value Forest (HCVF) assessment for the FMA area and develop management strategies for High Conservation Value Forests, as required.	HCVF Management Plan	Completed Report			x	HCVF Plan

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Objective 21 FMP Section 3.14 ECOLOGICAL							
Minimize, through integration of industrial activities on the FMA area, the industrial footprint in terms of its size intensity, distribution, and duration on the landbase.		# of ILM plans vs. total plans; produtive forest land deleted from FMA are due to energy sector activities.	# of plans; hectares deleted.		,	ζ.	
	 Utilize dynamic landscape models to assist in the identification of priority opportunities and th assessment of the impacts of integration and non-integratior 	eAnalysis of cumulative effects	Completed Report		2	6	Impacts Report
	 From the model, examine potential energy sector landbase scenarios on the TSA model to examine potential long-term sustainability (see TSA section). 	Approved TSA amendments	Y/N	x			
	 At the AOP level continue to identify and implement operational inter- and intra-industry integration opportunities. 	# of approved ILM plans	# of Plans		,	<u>د</u>	
	5. Support the ILM Research Chair Position at the U of A.	Research summary	Y/N		,	x	Research Summary Stewardship Appendix
	6. Continue to comply and support development of Integrated Resource Management Plans for N.E. Alberta.	Meeting with SRD officials - minutes	Y/N			x	Minutes
Objective 22 FMP Section 3.15 SOCIAL						+	
Continue to develop and refine a system for predicting where	 Continue to develop and refine a heritage resources system with the assistance of a qualified archeologist to comply with the Alberta Historical Resources Act. 	ACD approved plan / Archeology certificate	AOP approval		x y	4	
	Through a heritage resources model continue to develop impact conditions for the FMA area landscape.	ACD approved plan / Archeology certificate	AOP approval		x y	4	
	 Prepare heritage protection prescriptions in areas with high heritage potential with the assistant of a qualified archeologist. 	ACD approved plan / Archeology certificate	AOP approval		x y	(
	 Use current land-use data (GIS), aerial photography, and cultural studies to assist in identifying heritage resources and sensitive sites. 	ACD approved plan / Archeology certificate	AOP approval		x y	4	
	5. Ensure known (in digital format) sensitive sites are not impacted by the harvest sequence.	# of sites in netdown.	# sites incorporated in AOP	x	x		
	6. Prepare sensitive site OGRs at the next OGR installment	Approved sensitive site OGRs	New OGRs			X	OGRs

(Revised) 2007 FMP - Alberta-Pacific FM	A Area - Objectives / Strategies / Monitoring Matrix		#		Rep	ortin	9
Objective / Value (29 in Total)	Strategy (Means to Achieving the Objective) (196 Strategies)	Measurement Criteria: Monitoring Activity	Indicator - Unit of Measurement / Variance		AOP / GDP Stowardshin	Periodically/Uth	Report Title (Current & Potential)
Objective 23 FMP Section 3.16 ECONOMIC							
Identify spatially explicit sustainable harvest levels (Timber Supply Analysis - Annual Allowable Cut (AAC) Calculation) that are sufficient for FMA area timber users and sustain the environmental and social values of the FMA area.	A.	Approved netdown process	SRD Approval	x			
	2. Utilize approved empirical and mixedwood yield curves sets	Approved Yield Curves (2 sets	SRD Approval	x			
	 Utilize the Woodstock/Stanley and Patchworks timber supply models (TSA Appendix). 	Approved TSA	SRD Approval	x			
	4. Maximize the coniferous and deciduous AACs.	Approved TSA / % Utilization of AAC - quadrant level	% AAC actual vs. TSA - GDP report		,	:	
	5. Develop a fully spatial harvest sequence for the first 15 years of harvest	Variance from TSA strata and SHS AAC forecast (hectares	SRD Approval		X X		
	 Allocate the conifer harvest sequence based on the AAC leading conifer species profile (white spruce, black spruce and pine) 		SRD Approval		x y		
	 Maintain the current proportions of coniferous, mixedwood and deciduous broad cover-groups throughout the FMA area; within a range of +/- 5% of the current AVI status. 	Variance from targets at the FMA area level	% Variance from TSA D / DC / CD / C - reported in GDP		x ,	:	
	 Avoid increased fragmentation and excess roading (access) of the FMA area landscape using a aggregated harvest system that will create a range of opening sizes that should sustain larger tract of contiguous forest habitat (See objective #11) 		# of aggregated harvest plans / yr		2	:	
	11. Design harvest plans that follow natural landscape disturbance patterns and stand boundaries.	See Objective # 11					
	12. Concentrate the forest companies' harvest plans in areas that are fragmented by the existing two-pass harvest pattern	Implemented in the TSA harvest sequence	SRD Approval	x			
	 Model and retain old forest stands on the FMA area landscape within +/- 25% of the mean of the natural range of variation (NRV). (See Objective # 24) 	See Objective # 24	% Variance of actual ha vs. target - quadrant		,	:	
	 Deciduous stands from the Athabasca-Clearwater river valleys will not be included in the TS landbase. 		Excluded from TSA Netdown	x			
	 Prior to the next TSA, assess the impact on the conifer AAC of netting out all productive for stands in the Athabasca-Clearwater river valley. 		Report Prepared			x	Case-study
	15. "Donuts" will be amalgamated with their associated FMA unit for AAC calculations; deciduous stands from these non-J areas will not be sequenced to the forest companies.	Approved TSA	SRD Approval	x			
	16. For "donut" areas without AVI, Phase III inventory will be employe	Approved TSA	SRD Approval	X			
	17. Continue the development and enhancement of future AACs through the use of Patchworks for selected FMUs		# of FMUs	x			
	18. For the MOSA area in A15, follow the MOU guidelines	Approved MOSA GDF	SRD Approval		X		
				ΙT			

(Revised) 2007 FMP - Alberta-Pacific FM	Pacific FMA Area - Objectives / Strategies / Monitoring Matrix				Re	oortin	3	
Objective / Value (29 in Total)	Strategy (Means to Achieving the Objective) (196 Strategies)	Measurement Criteria: Monitoring Activity	Indicator - Unit of Measurement / Variance	FMP	AOP / GDP Stowardshin	erioaicaliy/om er	Report Title (Current & Potential)	
Objective 24 FMP Section 3.16								
SOCIAL Within the gross FMA area retain old-forest stand (over- mature forest stands) areas for each of the five main forest cover group types within +/- 25% of the mean of the natural range of variation (NRV).		Approved TSA	Yes - documented in TSA	x				
	 Use a timber supply model (Woodstock) to predict old-forest occurrence and distribution for al five major strata and track where they fall within the NRV ranges in the first 200 years. 	Approved TSA	Yes - documented in TSA	x				
	old forest seral stage within the +/- 25% range of the stratum's NRV mean.	Approved TSA	Yes - documented in TSA	x				
	"step-down" of the annual allowable cut at year 60 for all strata in all 11 Forest Management Unit		Yes - documented in TSA	x				
	 Predict the distribution and amount of old forest in each strata at 10, 50, 100 and 200 years. 	Approved TSA	Yes - documented in TSA	x				
	size and core area of old forest stands in the FMA area	TSA scenario analysis / case-study	Report Prepared			x	Case-study	
	Investigate changes in fire regimes (e.g. fire return intervals) and fire suppression activities that could affect old-forest dynamics.		Report Prepared			x	Case-study	
	 Investigate anthropogenic landscape changes (e.g. energy sector activities, including land-use expansion and "best practices" reclamation) to help quantify old-forest projections. 	TSA scenario analysis / case-study	Report Prepared			x	Case-study	
Objective 25 FMP Section 4.2 ECOLOGICAL						-		
Continue to conduct and facilitate research and development and implement innovations realized from R&D and other sources of input (e.g., operational experience, traditional knowledge studies, regulatory change) through an active adaptive management process.	Cooperate with partners in research and development: a) Industry partners b) Educational institutions c) Government departments d) Stakeholder groups e) Aborignal communities f) Independent research organizations.	Research summary	# of programs		2	x	Research Summary Stewardship Appendix	
	2. Follow the attributes of the Active Adaptive Management process .	Research summary	# of programs utilizing Active Adaptive Management		,	ĸ	Research Summary Stewardship Appendix	
Objective 26 FMP Section 4.3 ECOLOGICAL					1			
Implement biodiversity, forest renewal, and forest monitoring systems to evaluate changes in landscape pattern, forest growth and yield, habitat structure and species diversity.	-Alberta Vegetation Inventory (AVI)	Forest Inventory - See Section 3.1 (above) Trapper Program (See Above) Lake Fisheries / Stream Inventory / Research programs	# of programs		2	ĸ	Research Summary Stewardship Appendix	

(Revised) 2007 FMP - Alberta-Pacific FM	2007 FMP - Alberta-Pacific FMA Area - Objectives / Strategies / Monitoring Matrix				g		
Objective / Value (29 in Total)	Strategy (Means to Achieving the Objective) (196 Strategies)	Measurement Criteria: Monitoring Activity	Indicator - Unit of Measurement / Variance	FMP AOD / ODD	Stewardship	Periodically/Oth er	Report Title (Current & Potential)
	Monitoring Programs led by the forest companies -Forest Renewal Monitoring -Timber Monitoring -Mixedwood Management Monitoring Plots	Forest Renewal (Silviculture) - See Above (3.6) Timber Monitoring (Scaling) Mixedwood Management - See Forest Inventory (3.1)	# of programs	,	¢		
	Monitoring Programs where Alberta-Pacific and the Quota Holders participate (but do not lead). -Boreal Caribou Research Program (BCRP) -Bird Community Monitoring -Wetland and Waterbird Monitoring -Environmental Effects Monitoring (EEM) -Regional Aquatics Monitoring (RAMP) -Traditional Land-Use Studies	Records of meetings / in-kind & financial support	# of programs		x		Research Summary Stewardship Appendix
	Monitoring Programs where the forest companies do not participate, but have access to data. -Provincial Wildlife Surveys	N/A	N/A				
Objective 27 FMP Section 4.4 SOCIAL							
The forest companies will continue to participate in LFD-SRI compliance audits and self-audits.	1. Participate in all SRD compliance audits.	Participation in audit - pass/fail; # of grievances	Y/N : # audits / yr			x	Audit Report
	 Alberta-Pacific requests that a public member of the Forest Management Task Force participat in the Alberta -Pacific SRD audit and report. 		Y/N - # of people involved			x	Audit Report
	 In the absence of third-party audit and certification programs, Alberta-Pacific will conduct self audits that primarily deal with harvesting and silviculture operations. 	Completion of audit - # / quadrant - pass/fail; # of outstanding non-compliance items.	Y/N # of grievances			x	Audit Report
Objective 28 FMP Section 4.5 SOCIAL							
Alberta-Pacific will maintain ISO 14001 and FSC certification of all FMA lands.	1. Alberta-Pacific to maintain ISO 14001 program through annual audits.	Completion of audit - ISO pass/fail; # of outstanding non-compliance items.	Y/N - ISO retained			x	Audit Report
	2. Alberta-Pacific will undertake a Forest Stewardship Council (FSC) certification audit.	Initiation of the audit in 2004	Audit Completed - Y/N			x	Audit Report
Objective 29 FMP Section 4.6 SOCIAL							
Continue to develop a stewardship reporting program that provides stakeholders with a review of the forest companies' forest management activities and performance on its forest management plan commitments.	 Develop an annual update sheet of identified Stewardship statistics. 	Completion of update sheet	Report prepared by 2005		x		
	 Produce a Stewardship Report every 5 years just after the timber quadrant is complete. The second full Stewardship Report will be targeted for completion in late 2006. 	Completed report	Report prepared by 2006		x		
	3. Input the Quota Holders forest management activities in the Stewardship Repor	Quota Holder activities reported in 2006 Stewardship Report	Report prepared by 2006		x		