

Case Study: Pre-Succession Plan Alternate Scenarios

The Wheat Farm (Retiring farmers)

A fictional Case Study featuring beginning farmers, Tyler and Chrystal Wheat was prepared and included in the Spring 2007 edition of the *Renewal Now* newsletter. That Case Study illustrates the work done by Consultants to complete Farm Business Assessments offered through the Canadian Farm Business Advisory Services program, under the Renewal Chapter of the Agricultural Policy Framework (APF) - a federal-provincial-territorial initiative.

Every situation and challenge has several possible solutions. The original Case Study: Pre Succession Plan illustrates an action plan based on one scenario.

Following are action plans for alternate scenarios.

[Alternate Scenario 2](#) – sell home, sell equipment

[Alternate Scenario 3](#) – rent land, sell equipment, invest

[Alternate Scenario 4](#) – rent land, sell equipment, pay off debt

[Alternate Scenario 5](#) – rent land, sell more equipment, pay off debt, invest

Note: This Case Study and alternate scenarios are not a recommendation for a particular course of action. Individual results for farm operators considering these options may vary.

Alternate Scenario 2 – sell home, sell equipment

The Action Plan

- Sell the home quarter for \$300,000 to Tyler and Chrystal (son and his wife). Bill and Edna use the money to build a new home on an adjoining quarter they keep.
- Rent the remaining nine quarter sections of land to Tyler and Chrystal. Three of the quarters (the land Tyler and Chrystal will eventually inherit) are rent-free. The rent on the remaining six quarters is slightly reduced.
- Sell Bill and Edna's equipment line for the present estimated market value of \$700,000 to Tyler and Chrystal. Bill and Edna finance the purchase over 15 years at 0% interest.
- Continue to farm the half section Bill and Edna rent, and pay Tyler and Chrystal \$10,000 per year for equipment usage.

Scenario 2 is similar to the original Case Study: Pre Succession Plan action plan except that Bill and Edna will sell the equipment to Tyler and Chrystal instead of renting it to them.

Operations were projected for two years based on this change. The results follow.

After Change Projection (Year 1)

<u>Income (Jan 1 - Dec 31, 2007)</u>				<u>Expenses (Jan 1 - Dec 31, 2007)</u>	
Income				Expense	
Crop sales				Cropping expense	
	wheat	22,000	x 4.00	88,000	67,600
	canola	17,000	x 8.00	136,000	8,500
	barley	14,000	x 3.00	42,000	0
	Total			266,000	36,631
				Total Cash Expense	
				112,731	
				Non Cash Expense	
Other income				Depreciation	
	Land rent (840 ac x \$40/ac)			33,600	3,711
	Equipment rent			0	-5,805
	Other			4,500	
	Total			38,100	-2,094
				Total Non Cash Expense	
				110,637	
				Total Accrued Expense	
				3,063	
				Net Accrued Farm Inc.	
				15,000	
				30,000	
				5,000	
Total Cash Income					
				304,100	
				Debt Service Capacity	
				23,405	
Inc. side accrual adjustments					
				-190,400	
Total Accrued Income					
				113,700	
				(Net acc. farm inc. + depreciation	
				+ term interest + non farm income	
				- living costs - income tax)	
Profitability Ratios:				Payments:	
Debt Service Ratio: 0.32				Principal 35,595	
Return on Assets: (see Note) 0.13%				Interest 36,631	
Return on Equity: (see Note) -1.05%				Total 72,226	
Max. operating loan required: 0					
Closing Financial Ratios:				Note: Return on Assets and Equity as	
Current Ratio 2.47				shown assume returns after Living Costs	
Debt to Equity Ratio 0.14				and Income Tax. Before those items,	
Equity Ratio 0.88				returns would be higher.	

After Change Projection (Year 2)

Income (Jan 1 - Dec 31, 2008)				Expenses (Jan 1 - Dec 31, 2008)	
Income				Expense	
Crop sales				Cropping expense	
	wheat	5,500 x 4.00	22,000		67,600
	canola	4,300 x 8.00	34,400		8,500
	barley	6,400 x 3.00	19,200		76
	Total		75,600	Total Cash Expense	99,704
Other income				Non Cash Expense	
	Land rent (840 ac x \$40/ac)		33,600	Depreciation	6,000
	Equipment rent		0	Exp. side acc. adj.	-782
	Other		4,500	Total Non Cash Expense	5,218
	Total		38,100	Total Accrued Expense	104,922
Total Cash Income				Net Accrued Farm Inc.	
			113,700		8,778
Inc. side accrual adjustments				Pension income	
			0		15,000
Total Accrued Income				Living costs	
			113,700		40,000
				Income tax	
				5,000	
				Debt Service Capacity	
				8,306	
				(Net acc. farm inc. + depreciation	
				+ term interest + non farm income	
				- living costs - income tax)	
Profitability Ratios:				Payments:	
	Debt Service Ratio:		0.22	Principal	14,522
	Return on Assets: (see Note)		-0.30%	Interest	23,528
	Return on Equity: (see Note)		-1.23%	Total	38,050
	Max. operating loan required:		0		
Closing Financial Ratios:				Note: Return on Assets and Equity as	
	Current Ratio		2.94	shown assume returns after Living Costs	
	Debt to Equity Ratio		0.13	and Income Tax. Before those items,	
	Equity Ratio		0.88	returns would be higher.	

Some comments about these results are as follows:

1. In this scenario, the operation is unchanged from a production standpoint; so projected revenue from crops, land rent and other is the same as in the original case study. Net income increases slightly, as the decreased depreciation in the

initial years (resulting from the sale of the equipment to Tyler and Chrystal), is greater than what they would lose in equipment rent.

2. Debt Service Capacity is much less than in the original case study, due to the loss of equipment rental income. The equipment loan to Tyler and Chrystal is at 0 % interest and \$46,667 in principal is being repaid annually. As a result none of that cash flow shows as income. On the other hand, cash flow remains similar to the original case study, as the principal payments are close to what Tyler and Chrystal were going to pay for equipment rent. If the loan principal of \$46,667 were added to the calculated Debt Service Capacity, that amount in Year 2 would increase to \$54,973 giving a Debt Service Ratio of 1.44.
3. In this scenario, the relationship of equity to assets is much the same as in the original case study – the value of the equipment is now being carried as a loan to Tyler and Chrystal instead of Bill and Edna owning the actual equipment.
4. Operating loan requirements are similar to the original case study.
5. Overall, the results in this scenario are similar to the original case study. In this scenario, the debt will be repaid from payments received on debt instead of income from equipment rent. Bill and Edna have some additional risk since they no longer own the equipment, but have provided a loan that could fall into default where required payments are not received.
6. There may be tax implications involved in this scenario. Before choosing this option, they get advice from their accountant. Some additional funds may need to be assigned to payment of tax.

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Alternate Scenario 3 – rent land, sell equipment, invest

The Action Plan

- Sell Tyler and Chrystal (son and his wife) the home quarter for \$300,000. Bill and Edna use the money to build a new home on an adjoining quarter they keep.
- Rent to Tyler and Chrystal three quarter sections of land ‘rent-free’ (the land they will inherit eventually). Bill and Edna rent the remaining six quarters to other tenants at market rental rates for the area.
- Sell some of Bill and Edna’s equipment line for \$300,000 to Tyler and Chrystal at the present estimated market value. Bill and Edna finance the purchase over 15 years at 0% interest. Bill and Edna sell the rest of their equipment and the sale proceeds of \$400,000 are put into an investment expecting a return 5% per year.

- Bill and Edna continue to farm the half section they rent and pay Tyler and Chrystal \$10,000 per year for equipment usage.

The action plan is similar to alternate scenario 2 action plan except that Bill and Edna now receive payment of \$400,000 for equipment sales rather than carrying financing, as is the case with the equipment they are selling to Tyler and Chrystal. Also they receive market values for the land they rent to other parties.

Operations were projected for 2 years based on this change. The results follow.

After Change Projection (Year 1)

Income (Jan 1 - Dec 31, 2007)				Expenses (Jan 1 - Dec 31, 2007)	
Income				Expense	
Crop sales				Cropping expense	
	wheat	22,000	x 4.00	88,000	67,600
	canola	17,000	x 8.00	136,000	8,500
	barley	14,000	x 3.00	42,000	0
	Total			266,000	36,631
				Total Cash Expense	
				112,731	
				Non Cash Expense	
Other income				Depreciation	
	Land rent (840 ac x \$50/ac)		42,000		3,711
	Interest income		20,000		-5,805
	Other		4,500		
	Total		66,500		-2,094
				Total Non Cash Expense	
				110,637	
				Total Accrued Expense	
				31,463	
				Net Accrued Farm Inc.	
				Pension income	
				15,000	
				Living costs	
				30,000	
				Income tax	
				10,000	
Total Cash Income					
				46,805	
				Debt Service Capacity	
				(Net acc. farm inc. + depreciation	
				+ term interest + non farm income	
				- living costs - income tax)	
Inc. side accrual adjustments				-190,400	
Total Accrued Income				142,100	
Profitability Ratios:				Payments:	
Debt Service Ratio:				Principal	
0.65				35,595	
Return on Assets: (see Note)				Interest	
1.10%				36,631	
Return on Equity: (see Note)				Total	
0.06%				72,226	
Max. operating loan required:				0	
Closing Financial Ratios:				Note: Return on Assets and Equity as	
Current Ratio				shown assume returns after Living Costs	
2.37				and Income Tax. Before those items,	
Debt to Equity Ratio				returns would be higher.	
0.13					
Equity Ratio					
0.88					

After Change Projection (Year 2)

<u>Income (Jan 1 - Dec 31, 2008)</u>				<u>Expenses (Jan 1 - Dec 31, 2008)</u>	
Income				Expense	
Crop sales				Cropping expense	
	wheat	5,500	x 4.00	22,000	67,600
	canola	4,300	x 8.00	34,400	8,500
	barley	6,400	x 3.00	19,200	0
	Total			75,600	23,528
				Total Cash Expense	
				99,628	
Other income				Non Cash Expense	
	Land rent (840 ac x \$50/ac)			42,000	6,000
	Interest income			20,000	Exp. side acc. adj.
	Other			4,500	-782
	Total			66,500	Total Non Cash Expense
				5,218	
Total Cash Income				Total Accrued Expense	
				142,100	
Inc. side accrual adjustments				Net Accrued Farm Inc.	
				37,254	
Total Accrued Income				Pension income	
				15,000	
				Living costs	
				40,000	
				Income tax	
				10,000	
				Debt Service Capacity	
				31,782	
				(Net acc. farm inc. + depreciation	
				+ term interest + non farm income	
				- living costs - income tax)	
Profitability Ratios:				Payments:	
	Debt Service Ratio:			0.84	Principal
	Return on Assets: (see Note)			0.68%	Interest
	Return on Equity: (see Note)			-0.11%	Total
	Max. operating loan required:			0	38,050
Closing Financial Ratios:				Note: Return on Assets and Equity as	
	Current Ratio			2.75	shown assume returns after Living Costs
	Debt to Equity Ratio			0.13	and Income Tax. Before those items,
	Equity Ratio			0.89	returns would be higher.

Some comments about these results are as follows:

1. In this scenario, operations are unchanged from a production standpoint from the original case study. Net income improves over Scenario 2 in two ways.

- a. Increased land rent from \$40/ac to \$50 per acre now that Bill and Edna rent six quarter sections of land at market rates instead of at reduced rates to Tyler and Chrystal.
 - b. Interest income on the \$400,000 proceeds from the sale of equipment to an outside party.
2. Debt Service Capacity significantly increases from Scenario 2, but is less than the original scenario. Cash flow from payments on equipment sold to Tyler and Chrystal (\$20,000 per year in this scenario) provide additional debt service ability. If the loan principal of \$20,000 were added to the calculated Debt Service Capacity, that amount in Year 2 would increase to \$51,782 giving a Debt Service Ratio of 1.36.
 3. Operating loan requirement in this scenario remains similar to the original case study and Scenario 2. With the additional income, the cash position improves compared to Scenario 2.
 4. The net results in this option are better than in the original 'Case Study: Pre Succession Plan' and Scenario 2 because Bill and Edna get a better return from their assets and are not carrying as large an interest-free equipment-loan for Tyler and Chrystal. Bill and Edna receive more for income from renting the six quarters at the market rate than if they rented it to Tyler and Chrystal at a reduced rate. On the other hand, their goals are being compromised since significant portions of their assets are moved out of this farming operation.
 5. The risk to Bill and Edna is improved somewhat in this scenario as they are carrying less equipment debt.
 6. There may be tax implications involved in this scenario. Before choosing this option, Bill and Edna get advice from their accountant. Some additional funds may need to be assigned to payment of tax.

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Alternate Scenario 4 – rent land, sell equipment, pay off debt

The Action Plan

- Sell Tyler and Chrystal (son and his wife) the home quarter for \$300,000. Bill and Edna use the money to build a new home on an adjoining quarter they keep.
- Rent to Tyler and Chrystal three quarter sections of land 'rent free' (the land they will inherit eventually). Bill and Edna rent the remaining six quarters to other tenants at market rental rates for the area.

- Sell some of Bill and Edna's equipment line for \$300,000 to Tyler and Chrystal at the present estimated market value. Bill and Edna finance the purchase over 15 years at 0% interest. The sale proceeds of \$400,000 are used to pay off Bill and Edna's land mortgage, leaving them with no debt when other debt is retired from the remainder of those proceeds and other proceeds in March 2007.
- Bill and Edna continue to farm the half section they rent. They will pay Tyler and Chrystal \$10,000 per year for use of the equipment.

The main change from Scenario 3 is that they use the proceeds from the sale of \$400,000 of equipment to retire all remaining debt. They do not have interest income from these funds, but after the loans are retired, they will no longer have any payments.

Operations were projected for two years based on this change. The results follow.

After Change Projection (Year 1)

Income (Jan 1 - Dec 31, 2007)					Expenses (Jan 1 - Dec 31, 2007)			
Income					Expense			
Crop sales					Cropping expense			67,600
	wheat	22,000	x	4.00	88,000	Overhead expense		8,500
	canola	17,000	x	8.00	136,000	Operating interest		0
	barley	14,000	x	3.00	42,000	Term interest		7,281
	Total				266,000	Total Cash Expense		83,381
Other income					Non Cash Expense			
	Land rent (840 ac x \$50/ac)				42,000	Depreciation		3,711
	Interest income				0	Exp. side acc. adj.		-5,075
	Other				4,500	Total Non Cash Expense		-1,364
	Total				46,500	Total Accrued Expense		82,017
Total Cash Income					312,500	Net Accrued Farm Inc.		40,083
Inc. side accrual adjustments					-190,400	Pension income		15,000
Total Accrued Income					122,100	Living costs		30,000
						Income tax		10,000
						Debt Service Capacity		26,075
						(Net acc. farm inc. + depreciation + term interest + non farm income - living costs - income tax)		
Profitability Ratios:						Payments:		
	Debt Service Ratio:				3.58	Principal		0
	Return on Assets: (see Note)				0.47%	Interest		7,281
	Return on Equity: (see Note)				0.39%	Total		7,281
	Max. operating loan required:				0			
Closing Financial Ratios:						Note: Return on Assets and Equity as shown assume returns after Living Costs and Income Tax. Before those items, returns would be higher.		
	Current Ratio				No Debt			
	Debt to Equity Ratio				0.00			
	Equity Ratio				1.00			

After Change Projection (Year 2)

Income (Jan 1 - Dec 31, 2008)				Expenses (Jan 1 - Dec 31, 2008)	
Income				Expense	
Crop sales				Cropping expense	
	wheat	5,500	x 4.00	22,000	67,600
	canola	4,300	x 8.00	34,400	8,500
	barley	6,400	x 3.00	19,200	0
	Total			75,600	0
				Total Cash Expense	
				76,100	
Other income				Non Cash Expense	
	Land rent (840 ac x \$50/ac)			42,000	6,000
	Interest income			0	0
	Other			4,500	Total Non Cash Expense
	Total			46,500	6,000
				Total Accrued Expense	
				82,100	
				Net Accrued Farm Inc.	
				40,000	
				Pension income	
				15,000	
				Living costs	
				40,000	
				Income tax	
				10,000	
Total Cash Income					
122,100					
Inc. side accrual adjustments					
0					
Total Accrued Income					
122,100					
				Debt Service Capacity	
				11,000	
				(Net acc. farm inc. + depreciation	
				+ term interest + non farm income	
				- living costs - income tax)	
Profitability Ratios:				Payments:	
Debt Service Ratio: No debt				Principal	
Return on Assets: (see Note) 0.00%				Interest	
Return on Equity: (see Note) 0.00%				Total	
Max. operating loan required: 0				0	
Closing Financial Ratios:				Note: Return on Assets and Equity as	
Current Ratio No debt				shown assume returns after Living Costs	
Debt to Equity Ratio 0.00				and Income Tax. Before those items,	
Equity Ratio 1.00				returns would be higher.	

Some comments about these results are as follows:

1. In this scenario, operations are unchanged from a production standpoint; so projected revenue from crop sales remains unchanged. Projected income is down relative to Scenario 3 because Bill and Edna do not have the interest income, but payments decline significantly to zero in Year 2.

2. Debt Service Capacity is no longer an issue because in Year 2 of this scenario, there will be no payments or interest expense.
 - a. Bill and Edna carry financing for Tyler and Chrystal who are paying on a principal only basis amounting to \$20,000 per year. As this is strictly a cash flow item, it does not show up in the income or debt service capacity numbers. If that amount were added to the calculated Debt Service Capacity, that amount in Year 2 would increase to \$31,000.
3. Operating loan requirement continues to be zero in this scenario. The cash position improves, as the reduction in payments in this scenario is greater than the loss in investment income.
4. The results from this scenario are similar to the original case study and earlier scenarios, but somewhat better.
 - a. Bill and Edna are getting a better return from their assets using the proceeds from the equipment sale to pay off their mortgage loan at 7% interest.
 - b. Their goals are compromised in this scenario with assets moving out of the operation.
5. The risk to Bill and Edna improves in this scenario with the total elimination of their debt.
6. There may be tax implications involved in this scenario. Before choosing this option, Bill and Edna get advice from their accountant. Some additional funds may need to be assigned to payment of tax.

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Alternate Scenario 5 - rent land, sell more equipment, pay off debt, invest

The Action Plan

- Sell Tyler and Chrystal (son and his wife) the home quarter for \$300,000. Bill and Edna use the money to build a new home on an adjoining quarter they keep.
- Rent their nine quarters to other tenants at market rental rates for the area. Tyler and Chrystal do not rent any of Bill and Edna's land.
- Sell some of their equipment line for \$100,000 to Tyler and Chrystal at the present estimated market value. Bill and Edna finance the purchase over 15 years at 0% interest. Bill and Edna sell the rest of their equipment. The sale proceeds of \$600,000 are used to pay off their land mortgage, leaving them with no debt when other debt is retired from the remainder of those proceeds and other proceeds in

March 2007. The balance of \$200,000 is put into an investment expected to return 5% per year. The investment balance is increased to \$300,000 for Year 2.

- In this scenario Bill and Edna terminate their farm operation at the start of 2007.

Bill and Edna are effectively out of farming, and are primarily landlords. Their land is rented to tenants at market rates. The proceeds from the equipment they sell (everything except for selected equipment they sell to Tyler and Chrystal for \$100,000) will be used to retire all remaining debt with the balance invested. After the above changes are made, Bill and Edna retire and live in their new home located on one of the quarter sections they own.

Operations were projected for 2 years based on this change. The results follow.

After Change Projection (Year 1)

Income (Jan 1 - Dec 31, 2007)				Expenses (Jan 1 - Dec 31, 2007)	
Income				Expense	
Crop sales				Cropping expense	
	wheat	20,000	x 4.00	80,000	Overhead expense
	canola	15,000	x 8.00	120,000	Operating interest
	barley	10,000	x 3.00	30,000	Term interest
	Total			230,000	Total Cash Expense
					15,781
Other income				Non Cash Expense	
	Land rent (1240 ac x \$50/ac)			62,000	Depreciation
	Interest income			10,000	Exp. side acc. adj.
	Other			4,500	Total Non Cash Expense
	Total			76,500	-1,364
					Total Accrued Expense
					14,417
					Net Accrued Farm Inc.
					62,083
					Pension income
					15,000
					Living costs
					30,000
					Income tax
					15,000
	Total Cash Income			306,500	
					Debt Service Capacity
					43,075
	Inc. side accrual adjustments			-230,000	(Net acc. farm inc. + depreciation
					+ term interest + non farm income
					- living costs - income tax)
	Total Accrued Income			76,500	
Profitability Ratios:				Payments:	
	Debt Service Ratio:			5.92	Principal
	Return on Assets: (see Note)			1.31%	Interest
	Return on Equity: (see Note)			1.23%	Total
	Max. operating loan required:			0	7,281
					7,281
Closing Financial Ratios:				Note: Return on Assets and Equity as	
	Current Ratio			No Debt	shown assume returns after Living Costs
	Debt to Equity Ratio			0.00	and Income Tax. Before those items,
	Equity Ratio			1.00	returns would be higher.

After Change Projection (Year 2)

Income (Jan 1 - Dec 31, 2008)				Expenses (Jan 1 - Dec 31, 2008)	
Income				Expense	
Crop sales				Cropping expense	
	wheat	0 x	0.00	0	Overhead expense
	canola	0 x	0.00	0	7,500
	barley	0 x	0.00	0	Operating interest
	Total			0	0
					Total Cash Expense
					7,500
				Non Cash Expense	
Other income				Depreciation	
	Land rent (1240 ac x \$50/ac)		62,000		6,000
	Interest income		15,000		Exp. side acc. adj.
	Other		1,500		0
	Total		78,500		Total Non Cash Expense
					6,000
					Total Accrued Expense
					13,500
					Net Accrued Farm Inc.
					65,000
					Pension income
					15,000
					Living costs
					40,000
					Income tax
					15,000
	Total Cash Income		78,500		Debt Service Capacity
					31,000
	Inc. side accrual adjustments		0		(Net acc. farm inc. + depreciation
					+ term interest + non farm income
	Total Accrued Income		78,500		- living costs - income tax)
Profitability Ratios:				Payments:	
	Debt Service Ratio:		No debt	Principal	0
	Return on Assets: (see Note)		0.95%	Interest	0
	Return on Equity: (see Note)		0.95%	Total	0
	Max. operating loan required:		0		
Closing Financial Ratios:				Note: Return on Assets and Equity as	
	Current Ratio		No debt	shown assume returns after Living Costs	
	Debt to Equity Ratio		0.00	and Income Tax. Before those items,	
	Equity Ratio		1.00	returns would be higher.	

Some comments about these results are as follows:

1. In this scenario, operations are terminated at the start of year 1. Net income is from land rent and investment income less fixed expenses related to owning and maintaining the property.
2. There is debt after the equipment is sold early in the first year. Income is sufficient to meet all financial requirements. Like in Scenarios 2, 3 & 4,

Bill and Edna carry financing for Tyler and Chrystal and are repaid on a Principal only basis: in this case \$6,667 per year. As this is strictly a cash flow item, it does not show up in the income or debt service capacity numbers. If that amount is added to the calculated Debt Service Capacity, that amount in Year 2 for this Scenario increases to \$37,667.

3. As sources of revenue exceed the financial demands, cash and cash available for investment, is projected to increase over time.
4. Of all the scenarios considered, this one is best for Bill and Edna financially.
 - a. They provide minimum financial assistance to their son Tyler and his wife Chrystal by financing their \$100,000 equipment purchase at 0% interest over 15 years.
 - b. Bill and Edna receive market rates of return for most of their assets.
 - c. Their goals are further compromised in this scenario since most of their assets are removed from the farming operation.
5. The risk to Bill and Edna is the lowest in this scenario of all the options considered.
 - a. The assets they retain will be fully paid for.
 - b. Sources of income are more than enough to meet all their financial requirements, even if rates of return drop.
 - c. They have a strong financial cushion with their investments and RRSPs that would provide cash for living and operating if sources of revenue drop unexpectedly or their financial demands increase.
6. Tax implications become an even larger concern in this scenario. With the termination of operations they have fewer options available to defer tax. A larger part of the cash residual may now need to be assigned to payment of tax. Professional advice to deal with that issue is essential in this case.

Summary

Four alternative scenarios have been developed for the **Case Study: Pre Succession Plan**. Each Scenario has it's own individual results as well as positive and negative features detailed in the **Comparison Chart**. The financial ratios and indicators for each scenario should be considered relative to the business and personal goals of the case study farmers.

Note: The purpose of this Case Study is not to recommend a particular course of action. Individual results of farm operators considering these options may vary.

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