Case Study #3: Retiring Farmer - The Wheat Sr. Farm

Alternate Scenarios

This fictional Case Study featuring Bill and Edna Wheat was prepared as part of a series to illustrate the process involved, and benefits of completing a financial review to analyze options that might be available for a farm operation. Every Situation has several possible solutions. The original Case Study Mixed Farm Operation illustrates an action plan based on one scenario. The following are action plans for alternative scenarios for this farm family to consider:

Scenario 2 – sell home quarter, and equipment to successor, continue farming ½ section rent

<u>Scenario 3</u> – sell home quarter, and \$500,000 equipment to successor, sell rest of equipment, invest funds

<u>Scenario 4</u> – sell home quarter, and \$500,000 equipment to successor, sell rest of equipment, retire debt

Scenario 5 - buy home quarter, buy \$100,00 of equipment, continue to work off farm

Note: This Case Study and the alternate scenarios are not a recommendation for a particular course of action. Individual results for farm operators considering all their own option will vary, with their own financial information and family and business goals.

Scenario 2: The Action Plan -

In this scenario, Bill and Edna will sell the equipment to Tyler and Chrystal instead of renting it to them as in the original Scenario. In all other respects, the Plan remains the same:

- Bill and Edna (parents) will sell Tyler and Chrystal (son and his wife) the home quarter for \$600,000. Bill and Edna will use the money to build a new home on an adjoining quarter they will keep
- Tyler and Chrystal will rent the remaining 9 quarters of land Bill and Edna own, however, 3 of the quarters (the land they will inherit eventually) will be rent free. The rent on the remaining 6 1/4s will be slightly reduced.
- Tyler and Chrystal will purchase Bill and Edna's equipment line for \$950,000, the present estimated market value. Bill and Edna will finance the purchase over 15 years at 0% interest.
- Bill and Edna will continue to farm the ½ section they rent. They will pay Tyler and Chrystal \$20,000 per year back for equipment usage as long as they continue to farm.

Operations were projected for 2 years based on these changes. The results follow:

After Change Projection (Year 1)					
Income (Jan 1 - Dec 31, 2016) Expenses (Jan 1 - Dec 31, 2016)					
Income				Expense	
Crop sales				Cropping expense	106,600
wheat	22,000 x	5.50	121,000	Overhead expense	13,500
canola	16,500 x	10.00	165,000	Operating interest	2,470
barley	12,000 x	4.10	49,200	Term interest	32,181
Total			335,200	Total Cash Expense	154,751
				Non Cash Expense	
Other income				Depreciation	7,500
Land rent (84	10 ac x \$75/	ac)	63,000	Exp. side acc. adj.	-5,197
Equipment re	ent		0	Total Non Cash Expense	2,303
Other			2,500	-	
Total		_	65,500	Total Accrued Expense	157,054
				Net Accrued Farm Inc.	26,796
				Pension income	15,000
				Living costs	60,000
				Income tax	0
Total Cash Inco	me	=	400,700		
				Debt Service Capacity	21,478
Inc. side accrual adjustments -216,850		-216,850	(Net acc. farm inc. + depreciation	n	
			+ term interest + non farm incom	ne	
Total Accrued In	Total Accrued Income 183,850		- living costs - income tax)		

Profitability Ratios:	
Debt Service Ratio:	0.36
Return on Assets: (see Note)	-0.08%
Return on Equity: (see Note)	-0.80%
Max. operating loan required:	115,856

Payments:	
Principal	27,605
Interest	32,181
Total	59,786

Closing Financial Ratios:	
Current Ratio	1.99
Debt to Equity Ratio	0.14
Equity Ratio	0.88

After Change Projection (Year 2)				
Income (Jan 1 - Dec	c 31, 2017)		Expenses (Jan 1 - Dec 31, 2017)	
Income			Expense	
Crop sales			Cropping expense	106,600
wheat	7,000 x 5.50	38,500	Overhead expense	13,500
canola	4,500 x 10.00	45,000	Operating interest	278
barley	8,500 x 4.10	34,850	Term interest	24,952
Total		118,350	Total Cash Expense	145,330
			Non Cash Expense	
Other income			Depreciation	7,388
Land rent (84	10 ac x \$75/ac)	63,000	Exp. side acc. adj.	-993
Equipment re	ent	0	Total Non Cash Expense	6,394
Other		2,500		
Total		65,500	Total Accrued Expense	151,725
			Net Accrued Farm Inc.	32,125
			Pension income	25,000
			Living costs	70,000
			Income tax	3,000
Total Cash Incor	me	183,850		
			Debt Service Capacity	16,465
Inc. side accrual	Inc. side accrual adjustments0		(Net acc. farm inc. + depreciatio	
	:		+ term interest + non farm incon	ne
Total Accrued In	come	183,850	 living costs - income tax) 	

Profitability Ratios:	
Debt Service Ratio:	0.31
Return on Assets: (see Note)	-0.30%
Return on Equity: (see Note)	-0.91%
Max. operating loan required:	20,086

Payments:	
Principal	28,861
Interest	24,952
Total	53,813

Closin	g Financial Ratios:	
Curr	ent Ratio	2.34
Deb	t to Equity Ratio	0.13
Equi	ty Ratio	0.88

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 first change scenario, but does not include equipment rent. Net income increases slightly, as the decreased depreciation in the initial years resulting from the sale of the equipment to Tyler and Chrystal to start with is greater than what they were going to lose in equipment rent.
- 2. Debt service capacity in this scenario is much less than in Scenario 1, because of the loss of equipment rental income. The equipment loan to Tyler and Chrystal is at 0 interest, so is being repaid at \$63,333 Principal basis only, meaning that none of that cash flow shows up

as income. Cash flow, on the other hand, remains much as in the initial scenario, as the principal payments are an amount close to what Tyler and Chrystal were going to pay for equipment rent. If the loan principal of \$63,333 was added to the calculated Debt Service Capacity, that amount in Year 2 would increase to \$79,798 giving a Debt Service Ratio of 1.48.

- 3. In this scenario, the relationship of equity to assets is much the same as in the original scenario the value of the equipment is now being carried as a loan to Tyler and Chrystal instead of them owing the actual equipment itself.
- 4. Overall, the results in this scenario are similar to the original alternative except that in this scenario, the debt will be repaid from payments received on debt instead of income from equipment rent. Bill and Edna are carrying some additional risk in this scenario in that they no longer own the equipment physically, but a loan which could fall into default, and required payments not be received.
- 5. There may be tax implications involved in this scenario. Before choosing this option, they should get advice from their accountant. Some additional funds may need to be assigned to payment of tax which could result in an increase in debt and debt service requirement.

| Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |

Scenario 3: The Action Plan -

In this scenario, Bill and Edna will rent only 3 quarters to Tyler and Chrystal, and sell only part of the equipment to them. They will receive payment for their equipment they are selling to Tyler and Chrystal, and income on the money they are investing from the rest of the equipment they are selling. As well, they will now receive market rates for the land they rent to other parties.

- Bill and Edna (parents) will sell Tyler and Chrystal (son and his wife) the home quarter for \$600,000. Bill and Edna will use the money to build a new home on an adjoining quarter they will keep.
- Tyler and Chrystal will rent only the 3 quarters of land Bill and Edna own that will be rent free (the land they will inherit eventually). Bill and Edna will rent the remaining 6 quarters to other tenants at market rates for the area.
- Tyler and Chrystal will purchase only part of Bill and Edna's equipment line for \$500,000, it's
 present estimated market value. Bill and Edna will finance the purchase over 15 years at 0%
 interest.
- Bill and Edna will sell the rest of their equipment. The proceeds (\$450,000) will be put into an investment expecting to return 5%/yr. They will continue with the combine loan and tractor loan, providing land security in place of the equipment, and make the payments out of the equipment payments they receive from Tyler and Chrystal
- Bill and Edna continue to farm the ½ section they rent. They will pay Tyler and Chrystal \$20,000 per year back for equipment usage as long as they continue to farm.

Operations were projected for 2 years based on these changes. The results follow:

After Change Projection (Year 1)					
Income (Jan 1 - Dec 31, 2016) Expenses (Jan 1 - Dec 31, 2016)					
Income				Expense	
Crop sales				Cropping expense	106,600
wheat	22,000 x	5.50	121,000	Overhead expense	12,900
canola	16,500 x	10.00	165,000	Operating interest	2,614
barley	12,000 x	4.10_	49,200	Term interest	32,181
Total			335,200	Total Cash Expense	154,295
				Non Cash Expense	
Other income				Depreciation	7,500
Land rent (8	400 ac x \$85	/ac)	71,400	Exp. side acc. adj.	-5,197
Equipment r	rent		0	Total Non Cash Expense	2,303
Other			2,500	_	
Total		_	73,900	Total Accrued Expense	156,598
				Net Accrued Farm Inc.	35,652
				Pension income	15,000
				Interest income	22,500
				Living costs	60,000
Total Cash Inco	me	_	409,100	Income tax	0
				Debt Service Capacity	52,834
Inc. side accrual adjustments -216,850		(Net acc. farm inc. + depreciation	n		
			+ term interest + non farm incom	ne	
Total Accrued Income 192,250		- living costs - income tax)			

Profitability Ratios:	
Debt Service Ratio:	0.88
Return on Assets: (see Note)	0.11%
Return on Equity: (see Note)	-0.58%
Max. operating loan required:	110,980

Closing Financial Ratios:	
Current Ratio	2.43
Debt to Equity Ratio	0.14
Equity Ratio	0.88

Payments:	
Principal	27,605
Interest	32,181
Total	59,786

After Change Projection (Year 2)					
Income (Jan 1 - Dec	31, 2017	1		Expenses (Jan 1 - Dec 31, 2017) Expense	
Crop sales				Cropping expense	106,600
wheat	7,000 x	5.50	38,500	Overhead expense	12,900
canola	4,500 x	10.00	45,000	Operating interest	218
barley	8,500 x	4.10	34,850	Term interest	24,952
Total		_	118,350	Total Cash Expense	144,670
				Non Cash Expense	
Other income				Depreciation	7,388
Land rent (84	10 ac x \$85	/ac)	71,400	Exp. side acc. adj.	-993
Equipment re	ent		0	Total Non Cash Expense	6,394
Other			2,500		
Total		_	73,900	Total Accrued Expense	151,064
				Net Accrued Farm Inc.	41,186
				Pension income	25,000
				Interest	22,500
				Living costs	70,000
Total Cash Income 192,250		Income tax	3,000		
				Debt Service Capacity	48,025
Inc. side accrual adjustments 0		0	(Net acc. farm inc. + depreciation	on	
				+ term interest + non farm incor	me
Total Accrued Inc	come		192,250	 living costs - income tax) 	

Profitability Ratios:	
Debt Service Ratio:	0.89
Return on Assets: (see Note)	-0.10%
Return on Equity: (see Note)	-0.69%
Max. operating loan required:	18,628

Payments:	
Principal	28,861
Interest	24,952
Total	53,813

Closing Financial Ratios:	
Current Ratio	3.59
Debt to Equity Ratio	0.13
Equity Ratio	0.89

Some comments about these results are as follows:

- 6. In this scenario, operations are again unchanged from a production standpoint from the original change scenario. Net income improves over Scenario 2 in two ways:
 - a. increased land rent from \$75/ac to \$85 per acre now that Bill and Edna will be renting the remaining 6 quarters at market rates instead of at reduced rates to Tyler and Chrystal
 - b. interest income on the \$450,000 proceeds from the sale of equipment not being purchased by Tyler and Chrystal.
- 7. Debt Service Capacity is now significantly increased from Scenario 2, but is still less than in the original change scenario. Again, cash flow from the payments on the equipment sold to Tyler and Chrystal (\$33,333 per year in this scenario) provides cash flow for additional debt service ability. If the loan payment of \$33,333 was added to the calculated Debt Service Capacity, that amount in Year 2 would increase to \$81,358 giving a Debt Service Ratio of 1.51.
- 8. The net results in this option are better than in Scenarios 1 and 2; on the other hand, their goals are being compromised somewhat as a significant portion of their assets are now moving out of this farming operation.
- 9. Risk to Bill and Edna is improved somewhat in this scenario as they are carrying less equipment debt.
- 10. There may be tax implications involved in this scenario. Before choosing this option, they should get advice from their accountant. Some additional funds may need to be assigned to payment of tax.

| Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |

Scenario 4: The Action Plan -

In this scenario, Bill and Edna will use the proceeds from the sale of \$450,000 of equipment to retire all term debt. They will now not have interest income from these funds, but after the loans are retired, will no longer have any payments. Operating funds will be used to meet cash demands which should decrease as they work through the transition in the plan.

- Bill and Edna (parents) will sell Tyler and Chrystal (son and his wife) the home quarter for \$600,000. Bill and Edna will use the money to build a new home on an adjoining quarter they will keep.
- Tyler and Chrystal will rent only the 3 quarters that will be rent free (the land they will inherit eventually). Bill and Edna will rent the remaining 6 quarters to other tenants at market rental rates for the area.
- Tyler and Chrystal will purchase only part of Bill and Edna's equipment line for \$500,000, the present estimated market value. Bill and Edna will finance the purchase over 15 years at 0% interest. Bill and Edna will sell the rest of their equipment and use the proceeds and proceeds from the sale of other assets and crops, along with operating debt to pay off all term debt. At the end of Year 2, only operating debt within their approved \$100,000 should be required.

- Bill and Edna will continue to farm the ½ section they rent. They will pay Tyler and Chrystal \$20,000 per year back for equipment usage as long as they continue to do so.

Operations were projected for 2 years based on these changes. The results follow:

After Change Projection (Year 1)					
Income (Jan 1 - Dec 31, 2016) Expenses (Jan 1 - Dec 31, 2016)					
Income				Expense	
Crop sales				Cropping expense	106,600
wheat	22,000 x	5.50	121,000	Overhead expense	12,900
canola	16,500 x	10.00	165,000	Operating interest	6,212
barley	12,000 x	4.10	49,200	Term interest	30,171
Total			335,200	Total Cash Expense	155,883
				Non Cash Expense	
Other income				Depreciation	7,500
Land rent (84	400 ac x \$8	5/ac)	71,400	Exp. side acc. adj.	-24,065
Equipment re	ent		0	Total Non Cash Expense	-16,565
Other			2,500	_	
Total		_	73,900	Total Accrued Expense	139,318
				Net Accrued Farm Inc.	52,932
				Pension income	15,000
				Interest income	0
				Living costs	60,000
Total Cash Inco	me	=	409,100	Income tax	5,000
				Debt Service Capacity	40,603
Inc. side accrual	l adjustme	nts	-216,850	(Net acc. farm inc. + depreciatio	n
				+ term interest + non farm incon	ne
Total Accrued In	come		192,250	- living costs - income tax)	

Profitability Ratios:	
Debt Service Ratio:	1.35
Return on Assets: (see Note)	0.12%
Return on Equity: (see Note)	-0.17%
Max. operating loan required:	214,839

0
30,171
30,171

Closing Financial Ratios:	
Current Ratio	0.89
Debt to Equity Ratio	0.03
Equity Ratio	0.98

After Change Projection (Year 2)					
Income (Jan 1 - Dec	31, 2017	1		Expenses (Jan 1 - Dec 31, 2017) Expense	
				-	106,600
Crop sales	7,000	E E0	20 500	Cropping expense	
	7,000 x	5.50	38,500	Overhead expense	12,900
	4,500 x		45,000	Operating interest	3,208
•	8,500 x	4.10_	34,850	Term interest	0
Total			118,350	Total Cash Expense	122,708
				Non Cash Expense	
Other income				Depreciation	7,388
Land rent (84	10 ac x \$85	Jac)	71,400	Exp. side acc. adj.	0
Equipment re	ent		0	Total Non Cash Expense	7,388
Other			2,500	· _	
Total			73,900	Total Accrued Expense	130,095
				Net Accrued Farm Inc.	62,155
				Pension income	25,000
				Interest	0
		_		Living costs	70,000
Total Cash Incom	ie	_	192,250	Income tax	7,000
				Debt Service Capacity	17,542
Inc. side accrual adjustments		0	(Net acc. farm inc. + depreciation	ı	
	_			+ term interest + non farm incom	e
Total Accrued Inc	come		192,250	 living costs - income tax) 	

Profitability Ratios:	
Debt Service Ratio:	n/a
Return on Assets: (see Note)	-0.11%
Return on Equity: (see Note)	-0.19%
Max. operating loan required:	97,227

Payments:	
Principal	0
Interest	0
Total	0

Closing Financial Ratios:	
Current Ratio	1.53
Debt to Equity Ratio	0.01
Equity Ratio	0.99

Some comments about these results are as follows:

- 11. In this scenario, operations are again unchanged from a production standpoint, so projected revenue from crop sales remains unchanged. Projected Debt Service Capacity drops from Scenario 3 because they won't have the interest income, but payments decline significantly to 0 in Year 2.
- 12. Debt Service Capacity is no longer an issue because in Year 2 of this scenario, there will be no payments or term interest expense. As in Scenarios 2 & 3, however, in this Scenario, Bill and Edna would be carrying financing for Tyler and Chrystal being repaid on a principal only basis, in this case \$33,333/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 was added to the calculated Debt Service Capacity, that amount in Year 2 would increase to 51,417.
- 13. Operating loan requirement continues to be 0 in this Scenario. The cash position again improves as the reduction in payments in this scenario is greater than the loss in investment income.
- 14. The results from this scenario are generally similar to the original case and earlier Scenarios, but somewhat poorer as Bill and Edna are getting a yet better return from their investment and paying off their mortgage loan costing them 4.5% interest. Again, their goals are somewhat compromised in this scenario with assets moving out of the operation
- 15. Risk to Bill and Edna is again improved in this scenario with the total elimination of their debt.
- 16. There may be tax implications involved in the scenario. Before choosing this option, they should get advice from their accountant. Some additional funds may need to be assigned to payment of tax.

| Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |

Scenario 5: The Action Plan -

In this scenario, Bill and Edna will be effectively out of farming, and will be landlords predominantly. Their land will be rented out to 3rd parties at market rates. The proceeds from the equipment they sell (everything except for selected items they will sell to Tyler and Chrystal for \$100,000, then carry the financing) will be used to retire all remaining debt with the balance invested. After the above changes are made, Bill and Edna will retire and live in their new home located on one of the quarters they own.

- Bill and Edna (parents) will sell Tyler and Chrystal (son and his wife) the home quarter for \$600,000. Bill and Edna will use the money to build a new home on an adjoining quarter they will keep.
- Tyler and Chrystal will not rent any of the land Bill and Edna will be left with, so Bill and Edna will rent their 9 quarters to other tenants at market rental rates for the area.
- Tyler and Chrystal will purchase only \$100,000 of Bill and Edna's equipment. Bill and Edna will finance the purchase over 15 years at 0% interest. Bill and Edna will sell the rest of their equipment. The sale proceeds of \$850,000 will be used to pay off their land mortgage, which will leave them with no debt when other debt is retired from the remainder of those proceeds

- and other proceeds in March, 2016. \$250,000 will be put into an investment expected to return them 5%/year, then increased to \$380,000 for Year 2.
- In this scenario Bill and Edna will terminate their farming operations at the start of 2016.

Operations were projected for 2 years based on these changes. The results follow:

After Change Projection (Year 1)					
Income (Jan 1 - Dec 31, 2016) Expenses (Jan 1 - Dec 31, 2016)					
Income				Expense	
Crop sales				Cropping expense	0
wheat 2	20,000 x	5.50	110,000	Overhead expense	4,900
canola 1	15,000 x	10.00	150,000	Operating interest	0
barley 1	10,000 x	4.10_	41,000	Term interest	30,171
Total			301,000	Total Cash Expense	35,071
	Non Cash Expense				
Other income				Depreciation	7,500
Land rent (126	Land rent (1260 ac x \$85/ac) 107,100		Exp. side acc. adj.	-24,065	
Equipment rer	nt		0	Total Non Cash Expense	-16,565
Other			0		
Total		_	107,100	Total Accrued Expense	18,506
				Net Accrued Farm Inc.	88,594
				Pension income	15,000
				Interest income	9,375
				Living costs	60,000
Total Cash Income 408,10		408,100	Income tax	9,000	
				Debt Service Capacity	81,640
Inc. side accrual adjustments -301		-301,000	(Net acc. farm inc. + depreciation		
				+ term interest + non farm income	•
Total Accrued Inc	ome		107,100	- living costs - income tax)	

Profitability Ratios:	
Debt Service Ratio:	2.71
Return on Assets: (see Note)	0.82%
Return on Equity: (see Note)	0.68%
Max. operating loan required:	0

Closing Financial Ratios:	
Current Ratio	n/a
Debt to Equity Ratio	0.00
Equity Ratio	1.00

Payments:	
Principal	0
Interest	30,171
Tota	30,171

:	<u>Afte</u>	r Ch	ange Pi	rojection (Year 2)	
Income (Jan 1 - Dec 31	, 2017)		Expenses (Jan 1 - Dec 31, 2017)	
Income				Expense	
Crop sales				Cropping expense	0
wheat	0 x	0.00	0	Overhead expense	4,900
canola	0 x	0.00	0	Operating interest	44
barley	0 x	0.00	0	Term interest	0
Total			0	Total Cash Expense	4,944
				Non Cash Expense	
Other income	Other income		Depreciation	7,388	
Land rent (840 ac	Land rent (840 ac x \$85/ac) 107		107,100	Exp. side acc. adj.	0
Equipment rent			0	Total Non Cash Expense	
Other			0	_	
Total		_	107,100	Total Accrued Expense	12,332
				Net Accrued Farm Inc.	94,768
				Pension income	25,000
				Interest	19,000
			Living costs	70,000	
Total Cash Income		107,100	Income tax	16,000	
				Debt Service Capacity	60,156
Inc. side accrual adjustments		0	(Net acc. farm inc. + depreciation + term interest + non farm income		
Total Accrued Income 107,100 - living costs - income tax)					

Profitability Ratios:	
Debt Service Ratio:	n/a
Return on Assets: (see Note)	0.58%
Return on Equity: (see Note)	0.58%
Max. operating loan required:	0

Payments:		
Principal		
Interest		
	Total	

Closing Financial Ratios:				
Current Ratio	n/a			
Debt to Equity Ratio	0.00			
Equity Ratio	1.00			

0

Some comments about these results are as follows:

- 17. In this scenario, farm operations are terminated at the start of year 1. Net income then, is land rent and investment income less fixed expenses related to owning and maintaining the property.
- 18. There will be no debt after the equipment is sold early in the first year. Income will be sufficient to meet all financial requirements. As in Scenarios 2, 3 & 4, in this Scenario, Bill and Edna would be carrying financing for Tyler and Chrystal being repaid on a Principal only basis, in this case \$6,667/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 was added to the calculated Debt Service Capacity, that amount in Year 2 for this Scenario would increase to 69,867.
- 19. As sources of revenue exceed the financial demands, cash, and cash available for investment is projected to increase over time
- 20. Of all the scenarios considered, this one is the best for Bill and Edna financially, because in this option they are doing the least to assist their son Tyler and his wife Chrystal. They are receiving market rates of return for most of their assets. Only a small amount of support is being provided to Tyler and Chrystal being the \$100,000 of equipment financing they are carrying at 0 interest over 15 years. Their goals are further compromised in this scenario as now most of their assets are being removed from the farming operation
- 21. The risk to Bill and Edna is the lowest in this scenario of all the options considered. The assets they are retaining will be fully paid for. Sources of income are more than enough to meet all financial requirements, even if rates of return drop. They have a strong financial cushion in the form of their investments and RRSPs to provide cash for living and operating in the event something unexpected causes sources of revenue to drop or their financial demands to increase
- 22. Tax implications become an even larger concern in this scenario, as with the termination of operations they have fewer options available to them 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 this Case Study. Each Scenario has it's own individual results, positive features and negative features. Please refer to the Summary document which displays the Financial Ratios and Indicators for each Scenario, and what are considered to be the Positives and Negatives of each relative to the Case Study presented and 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.