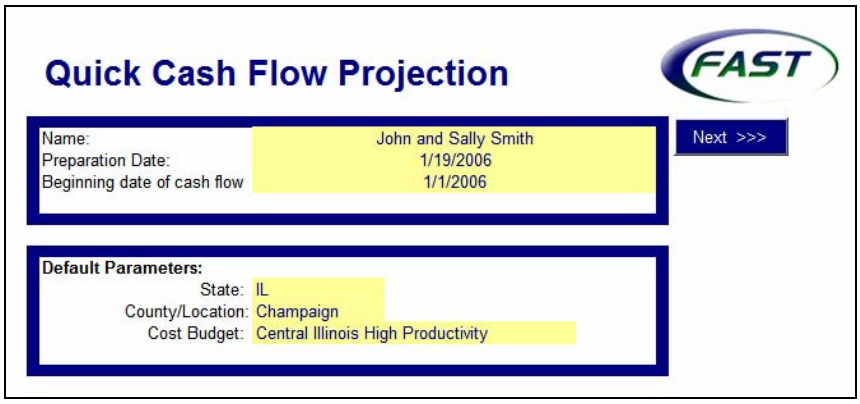
Quick Cash Flow Projections

The Quick Cash Flow Projections tool assists farm operators in projecting cash needs, farm profitability, and debt servicing capabilities. The program also aids users in performing sensitivity analysis.

This tool generates a quarterly cash flow projection for the upcoming crop year and allows the user to perform sensitivity analysis on assumptions made in expense and revenue estimates. The program is designed for farm data to be entered in a streamlined, step-by-step process.

The user chooses the level of detail to include in the model to generate cash flow projections. Revenue and expense items for the upcoming year can be estimated from the previous year's actual data, based on University of Illinois projected crop budgets, or entered directly by the user. This program description documents all input sections of the tool. However, this does not mean that each data-entry screen must be completed depending on how the user wants to project cash flows.

Data entry begins with the below Setup Screen. This page asks for selected user information.



The default parameters allow the user to incorporate crop budgets from the Illinois Farm Business Farm Management (FBFM) Association. Selecting an Illinois region in the Cost Budget input enters the default budget for that region. The user can begin the analysis with this budget data and make changes based on cost and revenue projections specific to the farm operation.

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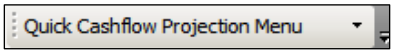
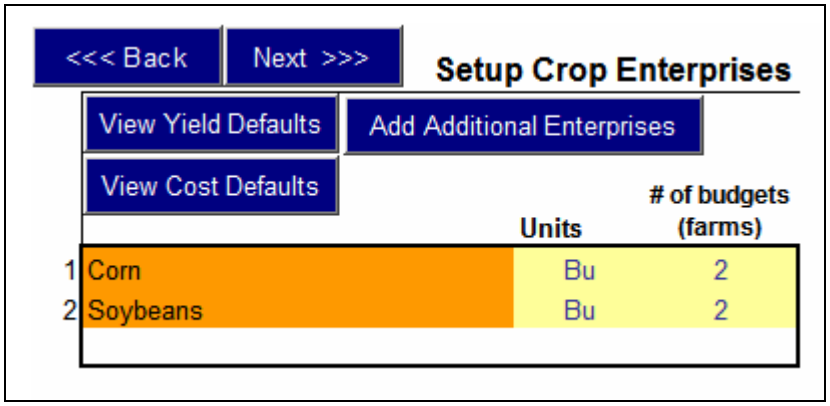
to move to the next screen where crop enterprises are entered. Each worksheet has a Next button that takes the user to the succeeding page.

Program Navigation 

The menu button shown above aids in guiding the user through the program. Clicking this button lists the sections of the spreadsheet, as well as printing options and a choice to clear all input data from the tool. This menu is a toolbar located in the upper left corner of the computer screen.

Setup Crop Enterprises

The user enters the different crops produced by the farm operation in this worksheet.



Clicking 

expands the list of enterprises to choose from. To select a crop, enter “1” in the # of budgets (farms) column for the specific enterprise. The user may prepare multiple budgets for each enterprise selected. For example, the above screen shot shows that two budgets are to be designed for corn and soybeans. This indicates that the user wants to assign different cost and revenue estimates for two different collections of farmland.

Clicking 

and 

reveals the yield and cost defaults for corn and soybeans. This data is based on the selections made in the Default Parameters section of the Setup worksheet. The user can edit this information in the Production and Per-Acre Cost Parameters worksheet explained on the following page.

Options for Entering Crop and Whole Farm Expenses

The program provides the user with three methods for recording cost projections for the upcoming year. The user can use all three methods to enter cost data, compare the expense projections, and determine which estimate to use for each cost item. This procedure is conducted in the Projected Expenses worksheet.

Per Acre Basis

Crop and whole farm expenses can be entered on a per acre basis. The user can start by using a FBFM default budget and edit cost items where desired. This process is described on the following page.

Last Year's Costs

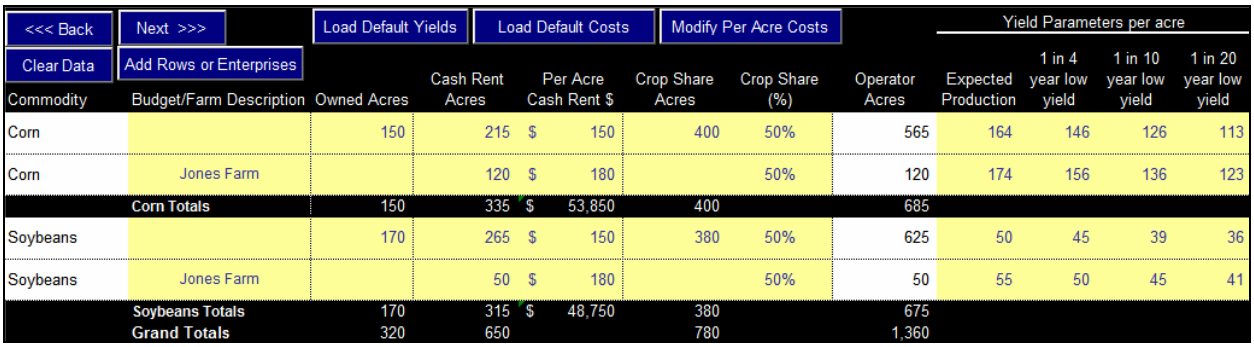
The previous year's actual crop and whole farm expenses can be entered. The user can use these cost items as next year's projections or specify a percent increase or decrease for the upcoming year. This procedure is explained further in the Previous Year's Cash Expenses section of this program description.

Budgeted Total Costs

The final method for recording cost data is to enter projections for the upcoming year's crop directly into the program. This process is described in more detail in the Projected Expenses section of this document.

Production and Per-Acre Cost Parameters

This section of the program asks for farmland information and yield projections. Furthermore, the user can enter per-acre cost estimates.



Commodity	Budget/Farm Description	Owned Acres	Cash Rent Acres	Per Acre Cash Rent $	Crop Share Acres	Crop Share (%)	Operator Acres	Yield Parameters per acre: Expected Production	1 in 4 year low yield	1 in 10 year low yield	1 in 20 year low yield
Corn		150	215	$ 150	400	50%	565	164	146	126	113
Corn	Jones Farm		120	$ 180		50%	120	174	156	136	123
	Corn Totals	150	335	$ 53,850	400		685				
Soybeans		170	265	$ 150	380	50%	625	50	45	39	36
Soybeans	Jones Farm		50	$ 180		50%	50	55	50	45	41
	Soybeans Totals	170	315	$ 48,750	380		675				
	Grand Totals	320	650		780		1,360				

The above screen shows where the user enters the number of acres operated for each enterprise under the various farmland control options. In addition, the user can enter cash rental rates and the operator's portion of crop-shared acres.

Two lines are provided for each commodity, as indicated on the crop enterprises setup page. This example shows that the user wants to enter different production and cost data for the Jones Farm. That is, budget information specific to the Jones Farm is entered, while the remaining farms operated are bunched together and assigned cost and yield estimates collectively.

Clicking 

returns the user to the crop enterprises setup worksheet where additional crops and/or budgets can be inserted.

Clicking Load Default Yields inserts expected production, estimated using FBFM data, for the upcoming year and historical county yield lows in the program. Yield data are derived for the county entered in the Default Parameters section of the setup page. The user can change the yield parameters to reflect his or her own projections and historical data.

Clicking Load Default Costs enters the default cost budget for the Illinois region specified in the Default Parameters section of the setup worksheet. Default crop and whole farm cost projections are estimated from FBFM records.

Clicking Modify Per Acre Costs reveals the default cost data and allows the user to edit crop and whole farm expenses. The below graphic displays a portion of this crop budget screen. The user can change the cost values, as well as the operator's percentage share of the expense items.

Commodity	Budget/Farm Description		Labor	Herbicides	Insecticides	Fertilizer	Seed	Machine Hire / Lease	Drying
Corn		Cost per acre	9.0	39.0	-	81.0	42.0	8.0	9.0
		Expense share on share acres	100%	50%	50%	50%	50%	100%	50%
Corn	Jones Farm	Cost per acre	9.0	39.0	-	81.0	42.0	8.0	9.0
		Expense share on share acres	100%	50%	50%	50%	50%	100%	50%
	Corn Totals								
Soybeans		Cost per acre	9.0	28.0	-	24.0	30.0	6.0	2.0
		Expense share on share acres	100%	50%	50%	50%	50%	100%	50%
Soybeans	Jones Farm	Cost per acre	9.0	28.0	-	24.0	30.0	6.0	2.0
		Expense share on share acres	100%	50%	50%	50%	50%	100%	50%

Expected Crop Prices and Sales

The next section of the program asks for the user's grain marketing plan for the upcoming year. The top portion of the screen shot on the following page allows entry of beginning inventory - units (bushels remaining from the previous year's crop), beginning inventory (the per-unit dollar value of that inventory), and the expected average price for each quarter of the upcoming year. The user should incorporate the collection of LDP's into the quarterly price estimations if appropriate.

<<< Back | Next >>> | Clear Data

	Beginning Inventory (Units)	Expected Prices/Unit: Beginning Inventory	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Season Average Price	Ending Inventory
Corn	21,500	$ 1.95	$ 2.03	$ 2.10	$ 2.19	$ 2.19	$ 2.19	$ 2.03
Soybeans	16,200	5.90	$ 5.90	5.85	5.95	5.79	$ 5.87	5.79

Expected Sales in Units

	Production	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Ending Inventory (Units)
Corn	113,759	17,000	4,500	0	59,200	54,559
Soybeans	33,706	14,000	2,200	3,100	16,500	14,106

Expected Sales in $

	Beginning Inventory	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Ending Inventory	Change in Inventory
Corn	$ 41,925	$ 34,510	$ 9,450	$ -	$ 129,648	$ 110,754	$ 68,829
Soybeans	95,580	82,600	12,870	18,445	95,535	81,671	(13,909)
	-	-	-	-	-	-	-

The midsection of the above worksheet asks for the expected number of units sold for each quarter of the forthcoming year. The bottom portion of the worksheet computes expected quarterly sales in dollars.

Government Payment Parameters

The Cash Flow Projections tool accounts for government farm program payments in the cash flow analysis. The below screen shows the entry for base acres and program yields for each enterprise. The worksheet provides the loan rate, target price, and direct payment rate. However, the user can change these values to examine the financial implications of possible changes to farm bill payments.

<<< Back | Next >>> | Add Rows | Clear Data | Change Price

Government Payment Parameters

Select Commodity	Farm Description	Base Acres (owned and cash rented)	Base Acres (crop shared)	Crop Share %	DP Base Yield	CC Base Yield	Loan Rate	Target Price	Direct Payment Rate	Season Average Price	Estimated Payments DP& CC
Corn	0	485	390	50%	165	165	$ 1.98	$ 2.63	$ 0.28	$ 2.19	$ 41,963
Soybeans	0	485	390	50%	49	49	$ 5.00	$ 5.80	$ 0.44	$ 5.87	$ 12,462
Enter commodity	0	-	-	0%	-	-	$ -	$ -	$ -		
Enter commodity	0	-	-	0%	-	-	$ -	$ -	$ -		
Enter commodity	0	-	-	0%	-	-	$ -	$ -	$ -		

The above example lists two commodities. Selecting the “Enter commodity” cell allows the user to display additional enterprises or enter more than one row per commodity if different program yields and base acres are needed for the same commodity.

The far right column titled “Estimated Payments DP & CC” totals the expected direct and counter-cyclical payments received. Counter-cyclical payments are based on the price in the Season Average Price column. This average is calculated from the expected quarterly prices discussed above.

The next section of the government payments worksheet, shown below, accounts for payments earned during the previous year but not received until the following year. In this example, $22,936 in farm bill payments was earned from the 2005 crop but will not be received until the third quarter in 2006, as indicated. These receivables are typically counter-cyclical payments owed for the previous year's crop.

Gov't. Payment Receivables from 2005 Crop	Quarter Received in 2006	Cash Distribution Gov't Payments: 2006				
		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Following Year (Receivable)
$ 22,936	Quarter 3	0%	0%	0%	50%	50%
$ -	Quarter 2	0%	0%	0%	50%	50%
$ -	Quarter 2	0%	0%	0%	50%	50%
$ -	Quarter 2	0%	0%	0%	0%	100%
$ -	Quarter 2	0%	0%	0%	0%	100%

In addition, this section allows to user to determine the timing of receiving the upcoming year's government program payments by allocating the percentage received in each quarter.

Setup Bank and Loan Accounts

This section of the program asks the user for checking and savings account balances, as well as operating loan information. The tool is designed so that money used for the farm operation for the upcoming year is drawn from the checking account first. Once this source reaches its minimum cash balance, as determined by the user, funds are withdrawn from the savings account until reaching the minimum savings balance. From this point on, money needed is borrowed from the operating loan.

Setup bank and loan accounts

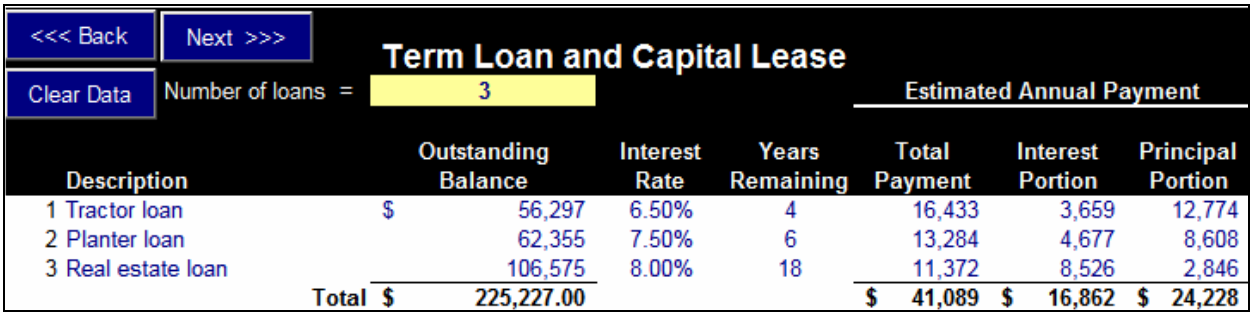
Cash and equivalents		
Current cash balance	$	2,500
Minimum cash balance	$	2,000
Savings account information		
Current savings balance	$	6,000
Minimum savings balance	$	1,000
Savings interest rate		1.51%
Operating loan information		
End of year operating loan balance	$	71,640
End of year accrued interest	$	1,791
Pay balance and accrued interest 1st quarter?		yes
Operating interest rate		7.50%
Expected Depreciation	$	48,135

Operating loan information includes the current loan balance and interest accrued on the note as of the time the cash flow projection is prepared. The input asking "Pay balance and accrued interest 1st quarter?" specifies if the previous year's operating note is paid off at the end of the year and a new loan starts at the beginning of the upcoming year. If so, select "yes" for this entry.

The final input in this section asks for expected total depreciation for the upcoming year. This information is used in preparing a projected accrual income statement.

Loan Details

The program asks for information on term loans and capital leases. The user specifies the number of lines needed for data entry. Next, the worksheet, shown below, asks for the current outstanding balance, interest rate, and years remaining on each loan. The program can calculate the upcoming year's total loan payment for each note, as well as compute the interest and principal portions. The user can also choose to directly enter the loan payment data.



Description		Outstanding Balance	Interest Rate	Years Remaining	Total Payment	Interest Portion	Principal Portion
1 Tractor loan	$	56,297	6.50%	4	16,433	3,659	12,774
2 Planter loan		62,355	7.50%	6	13,284	4,677	8,608
3 Real estate loan		106,575	8.00%	18	11,372	8,526	2,846
Total	$	225,227.00			$ 41,089	$ 16,862	$ 24,228

Previous Year's Cash Income

The below worksheet allows entry of the previous year's actual cash income. The user can choose to enter this data and use it as a base for projecting next year's cash income. This step is outlined in the Projected Income section of this document.

Clicking View Receivables reveals two columns for entering the farm business' account receivables for the beginning and end of the previous year. This information is used in preparing a projected accrual income statement for the upcoming year.

Last Year's Actual Cash Income View Receivables	2005
Income and receipts	
Crop sales	$ 385,547
Government payments	51,515
Crop insurance payments	7,500
Market livestock sales	
Livestock product sales	
Breeding livestock sales	
Other farm receipts	3,500
Other business Income	
Interest and dividend income	200
Nonfarm wages and salaries	31,000
Nonfarm receipts	
Borrowed money: term debt	62,355
Asset Sales	

Previous Year's Cash Expenses

The screenshot below reflects a portion of the worksheet where the user can enter last year's actual cash expenses in the Total Cash Expense column. Entering last year's actual crop and whole farm costs allows the user to project next year's expenses from this historical data. This represents one of the three methods for estimating next year's expenses.

Last Year's Year Actual Cash Expenses	Total Cash Expense		Accrual Expense	Cost Per Acre	
View Prepaids / View Payables	2005		2005	Total Acres	Operator Acres
Farm Expenses					
Labor	$	14,875	$ 14,875	$ 8.5	$ 10.9
Herbicides		45,560	59,560	34.0	43.8
Insecticides		-	-	-	-
Fertilizer		65,960	62,460	35.7	45.9
Seed		46,240	34,240	19.6	25.2
Machine Hire / Lease		12,250	12,250	7.0	9.0
Drying		7,480	7,480	4.3	5.5
Storage		6,120	6,120	3.5	4.5
Machine repair		26,250	27,450	15.7	20.2
Crop insurance		9,520	9,520	5.4	7.0
Irrigation		-	-	-	-
Land rent		95,950	95,950	54.8	70.6
Fuel and oil		23,625	23,625	13.5	17.4
Light vehicle		3,500	3,500	2.0	2.6
Marketing & transportation expenses		-	-	-	-
Utilities		7,000	7,000	4.0	5.1
Land improvements		-	-	-	-
Soil and water conservation		-	-	-	-
Building repair		3,000	3,000	1.7	2.2
Other insurance		10,500	10,500	6.0	7.7
Real estate and property taxes		7,360	7,360	4.2	5.4

Clicking View Prepaids and View Payables reveals columns where the user can enter the values of prepaid expenses and account payables for the beginning and end of the year.

The program computes accrual expenses based on last year's actual cash expenses, prepaid expenses, and account payables, seen in the Accrual Expenses column (shaded blue). In addition, the tool calculates per-acre costs based on both total tillable acres and operator acres. Cost per operator acre measures the farm operator's costs over acres the operator generates revenue from. For example, if the farmer operates ground under a 50-50 share rent arrangement, half of the acres farmed under this agreement are operator acres.

Projected Income

The entry page shown below allows the user to estimate revenue for the upcoming year. There are two methods for developing these projections:

1. The user can use last year's income, entered in the Previous Year's Cash Income worksheet, as a starting point and choose to change these values by a specified percentage level or use last year's numbers. Percent increases or decreases are entered in the Proposed % Increase column. The Default Value column states next year's projections based on last year's revenue figures adjusted for percentage changes specified by the user.

2. The second method for forecasting next year's income is to enter estimates directly in the Override Value column. An entry overrides, or shades, the accompanying figure in the Default Value column and is used in income projections for the upcoming year. If the user wants to eliminate an income source from last year for next year's projection, type "0" in that item's cell in the Override Value column. In the below example, last year's crop insurance payments totaled $7,500. The user does not want to rely on this revenue source for the upcoming year, so "0" is entered in the Override Value column, which produces a dash in that cell, as seen below.

The Accrual Income column reports the final revenue projections used in the cash flow analysis.

Clear Data | View Receivables

Projected Income

	Income 2005	Proposed % Increase 2006	Projected Cash Income 2006 Default Value	Projected Cash Income 2006 Override Value	Accrual Income 2006
Income and Receipts					
Crop insurance payments	$ 7,500	0%	$ 7,500	$ -	$ -
Market livestock sales	-	0%	-		-
Livestock product sales	-	0%	-		-
Breeding livestock sales	-	0%	-		-
Other farm receipts	3,500	3%	3,605		3,605
Other business Income	-	0%	-		-
Interest and dividend income	200	3%	206		206
Nonfarm wages and salaries	31,000	10%	34,100		34,100
Nonfarm receipts	-	0%	-		-
Borrowed money: term debt	62,355	0%	62,355	-	-
Machinery, Equip and Land sales	-	0%	-		-

Clicking View Receivables reveals a data-entry column for the user to enter projected account receivables for the end of the upcoming year.

Projected Expenses

The Projected Expenses worksheet allows the user to specify cost projections for the next year. A portion of the input screen is shown below.

View Prepaids / View Payables	From Per Acre Budget Info	Last Year 2005	Base Calculation	Proposed % Increase 2006	Projected Cash Expense 2006 Base Value	Projected Cash Expense 2006 Override Value
Farm Expenses						
Labor	$ 15,750	**$ 14,875**	Last Year	3%	$ 15,321	**$ 18,000**
Herbicides	**45,615**	59,560	Per Acre		**45,615**	
Insecticides	-	-	Last Year	3%	-	
Fertilizer	**71,685**	62,460	Per Acre		**71,685**	
Seed	**49,020**	34,240	Per Acre		**49,020**	
Machine Hire / Lease	12,270	**12,250**	Last Year	3%	**12,618**	
Drying	**7,515**	7,480	Per Acre		**7,515**	
Storage	**6,135**	6,120	Per Acre		**6,135**	
Machine repair	26,290	**27,450**	Last Year	3%	**28,274**	
Crop insurance	**9,530**	9,520	Per Acre		**9,530**	
Irrigation	-	-	Last Year	3%	-	
Land rent	**102,600**	95,950	Per Acre		**102,600**	
Fuel and oil	**25,405**	23,625	Per Acre		**25,405**	
Light vehicle	**3,500**	3,500	Per Acre		**3,500**	
Marketing & transportation expenses	-	-	Last Year	3%	-	
Utilities	6,135	**7,000**	Last Year	3%	**7,210**	
Land improvements	-	-	Last Year	3%	-	
Soil and water conservation	-	-	Last Year	3%	-	
Building repair	5,250	**3,000**	Last Year	3%	**3,090**	
Other insurance	**10,500**	10,500	Per Acre		**10,500**	
Real estate and property taxes	-	**7,360**	Last Year	3%	**7,581**	
Building rent	-	-	Last Year	3%	-	

Similar to the Projected Income page, the user can choose from three methods to estimate each crop and whole farm expense item:

1. The From Per Acre Budget Info column reports expenses entered by the user in the Production and Per-Acre Cost Parameters section of the tool. This represents the FBFM default cost budget inserted in the program and reflects any changes made by the user to cost items. To use this method to project an expense item, select “Per Acre” in the Base Calculation column. This operation shades the value in the Last Year column (this is last year’s cost for this expense item as entered in the Previous Year’s Cash Expenses section) and reports the budget value in the Base Value column. In the above example, the estimated herbicide expense for the upcoming year is based on the budget information.

2. The user can also choose to enter last year's actual cost as a projection for next year by selecting "Last Year" in the Base Calculation column, which shades the value in the From Per Acre Budget Info column. The Proposed % Increase column allows the user to adjust this cost by specifying the percent increase or decrease for next year's estimate. The final value used in the cash flow analysis is reported in the Base Value column. The above example shows that last year's actual cost for machine hire/lease plus a 3% increase is used as the base value for projecting this cost item.

3. The third method for forecasting a crop or whole farm expense item is to enter the estimate directly in the Override Value column. This shades the figure in the Base Value column and incorporates this override value into the cash flow analysis. The example on the previous page shows an override value entry of $18,000 for labor costs.

   If an expense incurred last year or reported in the budget will not exist next year, enter "0" in the Override Value column for that cost item to remove it from the projection analysis.

Clicking 

and 

reveals columns where the user can enter end-of-year prepaid expense and account payable estimates for the upcoming year. This information is used in the preparation of a projected accrual income statement.

The table to the right displays cost projections for the next year (Accrual Expense column), forecasted per-acre costs, and the percent change in expenses from last year to the upcoming year.

Furthermore, total acres farmed and operator acres are reported. Operator acres represent the acres the farm operator generates revenue from.

Total acres		1,750	
Operator acres		1,360	
Accrual Expense 2006	Cost Per Acre Total Acres	Cost Per Acre Operator Acres	Actual % Increase 2005-06
$ 18,000	$ 10.3	$ 13.2	21%
45,615	26.1	33.5	-23%
-	-	-	
71,685	41.0	52.7	15%
49,020	28.0	36.0	43%
12,618	7.2	9.3	3%
7,515	4.3	5.5	0%
6,135	3.5	4.5	0%
28,274	16.2	20.8	3%
9,530	5.4	7.0	0%
-	-	-	
102,600	58.6	75.4	7%
25,405	14.5	18.7	8%
3,500	2.0	2.6	0%
-	-	-	
7,210	4.1	5.3	3%
-	-	-	
-	-	-	
3,090	1.8	2.3	3%
10,500	6.0	7.7	0%
7,581	4.3	5.6	3%

Distribution of Projected Expenses and Income

This section of the program allows the user to determine the quarterly distribution of expense and revenue items for the upcoming year. The screen shot below represents a portion of this worksheet.

Distribution of Cash Expenses	Total Cash Expense		Quarter 1	Quarter 2	Quarter 3	Quarter 4
	2006	Distribution of Cash Flow				
Farm Expenses						
Labor	$ 18,000	Equal All Quarters	$ 4,500	$ 4,500	$ 4,500	$ 4,500
Herbicides	45,615	First Half of Year	22,808	22,808	-	-
Insecticides	-	First Half of Year	-	-	-	-
Fertilizer	71,685	Quarters 1 & 4	35,843	-	-	35,843
Seed	49,020	First Half of Year	24,510	24,510	-	-
Machine Hire / Lease	12,618	Quarters 2 & 4	-	6,309	-	6,309
Drying	7,515	Quarters 1 & 4	3,758	-	-	3,758
Storage	6,135	Quarter 4 only	-	-	-	6,135
Machine repair	28,274	Equal All Quarters	7,068	7,068	7,068	7,068
Crop insurance	9,530	Quarter 1 only	9,530	-	-	-
Irrigation	-	Equal All Quarters	-	-	-	-
Land rent	102,600	Quarters 1 & 3	51,300	-	51,300	-
Fuel and oil	25,405	Equal All Quarters	6,351	6,351	6,351	6,351
Light vehicle	3,500	Equal All Quarters	875	875	875	875
Marketing & transportation expenses	-	Equal All Quarters	-	-	-	-
Utilities	7,210	Equal All Quarters	1,803	1,803	1,803	1,803
Land improvements	-	Equal All Quarters	-	-	-	-
Soil and water conservation	-	Equal All Quarters	-	-	-	-
Building repair	3,090	Equal All Quarters	773	773	773	773

In the Distribution of Cash Flow column, select the cell for the corresponding farm expense or income item to choose the timing of cash flows. The program reports the distribution in the quarter columns.

Cash Flow Projection Reports

The tool generates the following documents:

Quarterly Cash Flow

The Quarterly Cash Flow report lists projected expense and revenue figures for each quarter of the upcoming year. Total cash flows for the year are computed and compared to the previous year.

Term Debt Coverage

A capital replacement and term debt repayment margin is estimated. This figure indicates the ability of the farm business to satisfy all financial obligations by stating the amount left over after paying all farm and family living expenses and servicing all debt commitments for the year. A negative value signifies the inability of the business to meet all financial demands, while a positive value indicates a surplus of funds.

Income Statement
The program prepares both a cash and accrual income statement for the upcoming year.

Statement of Cash Flows
The tool generates a statement of cash flows documenting cash inflows and outflows for operating, investing, and financing activities.

Summary Commodity Information
This section examines price and yield estimates. The average price received and average yield are reported for each commodity.

Breakeven analysis is performed for both commodity prices and yields. The break even prices are calculated based on estimated yields entered in the Production and Per-Acre Cost Parameters worksheet and break even yields are computed based on expected prices entered in the Expected Crop Prices and Sales section. The Total Cost columns report prices or yields needed to cover all farm operating expenses, the Positive Income columns list prices or yields required to generate a positive net income, and the Positive Cash Flow columns state the prices or yields needed to meet all financial obligations for the farm business.

	Average		Break Even Price			Break Even Yield			Price Sensitivity		Yield Sensitivity	
Commodity	Price Received	Yield	Total Costs	Positive Income	Positive Cash Flow	Total Costs	Positive Income	Positive Cash Flow	Sales Price Change per Bu (unit)	Change in Net Income	Yield Change per Acre	Change in Net Income
Corn	$ 2.15	166	$ 2.06	$ 2.03	$ 2.18	157	154	169	0.05	$ 4,083	1	$ 1,391
Soybeans	$ 5.85	50	$ 5.60	$ 5.52	$ 5.93	47	46	51	0.25	9,079	1	3,908

The user can conduct sensitivity analysis on price and yield projections by entering price increase or decrease amounts in the Sales Price Change per Bu (unit) column to examine the change in net income that results from changes in commodity price. For example, the above scenario shows that if the average sales price for corn is increased by $.05 per bushel, net income will increase by $4,083. Similar analysis can be conducted on changes in yield. The above example concludes that increasing the average corn yield by one bushel results in net income increasing by $1,391.

Cash Flow Graphs
The model generates four graphs for analysis:
- Proportion of value of farm production
- Source of funds
- Uses of funds
- Operating loan balance

Sensitivity Analysis

The tool allows the user to conduct in-depth sensitivity analysis on the assumptions made in the cash flow projection. Up to three different scenarios can be examined side-by-side. Below is a portion of the Sensitivity Analysis page where changes to cash flow estimates are entered.

	Sensitivity Analysis 1		Sensitivity Analysis 2		Sensitivity Analysis 3	
Scenario Name	Scenario 1		Scenario 2		Scenario 3	
	Yields	Price	Yields	Price	Yields	Price
All Enterprises	1 in 4 year yield decline	0% No Change	1 in 10 year yield decline	0% No Change	1 in 20 year yield decline	0% No Change
Corn	1 in 4 year yield decline	0% No Change	1 in 10 year yield decline	0% No Change	1 in 20 year yield decline	0% No Change
Soybeans	1 in 4 year yield decline	0% No Change	1 in 10 year yield decline	0% No Change	1 in 20 year yield decline	0% No Change
	Change %	Change $	Change %	Change $	Change %	Change $
All Nonland Farm Operating Expenses	0.0%	0	0.0%	0	0.0%	0
Labor	0.0%	0	0.0%	0	0.0%	0
Herbicides	0.0%	0	0.0%	0	0.0%	0
Insecticides	0.0%	0	0.0%	0	0.0%	0
Fertilizer	0.0%	0	0.0%	0	0.0%	0
Seed	0.0%	0	0.0%	0	0.0%	0
Machine Hire / Lease	0.0%	0	0.0%	0	0.0%	0
Drying	0.0%	0	0.0%	0	0.0%	0
Storage	0.0%	0	0.0%	0	0.0%	0
Machine repair	0.0%	0	0.0%	0	0.0%	0
Crop insurance	0.0%	0	0.0%	0	0.0%	0
Irrigation	0.0%	0	0.0%	0	0.0%	0
Fuel and oil	0.0%	0	0.0%	0	0.0%	0
Light vehicle	0.0%	0	0.0%	0	0.0%	0

For each scenario, the user can adjust yields, sales prices, and farm expense and revenue figures. Yields and sales prices can be changed for all enterprises or for specific commodities. For example, to change the corn yield projection, highlight the cell in the Yields column and the Corn row and choose from the list of possible changes to test. The same procedure applies to entering changes in price.

The above example shows three possible outcomes:

- Scenario 1: 1 in 4 year yield decline
- Scenario 2: 1 in 10 year yield decline
- Scenario 3: 1 in 20 year yield decline

To change farm expenses and income, enter the percent increase or decrease in the Change % column. The resulting dollar change is reported in the Change $ column.

Sensitivity Report

Results from the sensitivity analysis are reported in the below screen. The Baseline column represents the assumptions made in the cash flow projections. The remaining columns report the financial implications of the three scenarios developed on the previous page.

	Baseline		Sensitivity Analysis 1 Scenario 1		Sensitivity Analysis 2 Scenario 2		Sensitivity Analysis 3 Scenario 3	
	Yields	Price	Yields	Price	Yields	Price	Yields	Price
Corn	166	$ 2.15	148	$2.15	128	$2.15	115	$2.15
Soybeans	50	$ 5.85	45	$5.85	40	$5.85	36	$5.85
Performance comparisons								
Net farm income from operations		-985		-45,984		-96,791		-129,370
Net income before taxes		33,321		-11,678		-62,485		-95,064
Farm earnings before interest, taxes & depreciation		73,311		28,565		-21,960		-54,357
Total earnings before interest, taxes & depreciation		107,617		62,871		12,346		-20,051
Capital debt repayment capacity		16,955		-28,044		-78,851		-111,430
Capital debt repayment margin		-7,273		-52,271		-103,079		-135,658
Term debt coverage		0.823		-0.272		-1.509		-2.302
Working capital		65,619		20,620		-30,187		-62,766
End of year operating loan balance		126,822		151,840		180,002		198,070
Maximum operating loan balance		296,979		298,909		300,901		302,200

In the example above, if expenses are incurred and income is earned as outlined in the cash flow estimates, net farm income before taxes will be $33,321, as seen in the Baseline column. However, if Scenario 1 occurs, net farm income before taxes will be -$11,678. Net farm income declines even more if Scenarios 2 and 3 materialize.

Similar comparisons can be made with the other financial performance indicators. Because key assumptions are made in the initial cash flow plan, this tool allows the user to expose the financial health of the farm business to the possibility of projections not being accurate.

Break Even Price and Yield Combinations

The final section of the program extends the breakeven analysis previously discussed. The results reported are the same calculations made in the Summary Commodity Information worksheet. However, the below screen shows that the user can fix price and/or yield figures for each commodity in the present section. That is, if the user is confident of receiving a certain sales price and/or raising a specific yield, entering these values in the Fix Price or Fix Yield columns and clicking Run calculates break even prices and yields based on the price and yield entries.

Run

Break Even Price and Yield Combinations

Fix Price	Fix Yield		Break Even Price Combinations				Break Even Yield Combinations			
			Projections 2006	All Farm Operating Costs	Positive Income	Positive Cash Flow	Projections 2006	All Farm Operating Costs	Positive Income	Positive Cash Flow
		Corn	$2.15	$2.06	$2.03	$2.18	166	157	154	169
		Soybeans	$5.85	$5.60	$5.52	$5.93	50	47	46	51