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## User Guide

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**How & When Data Is Saved:** Your data in the application is saved when the following occurs:

1. Any time you leave a section or tab and move to another section or tab.
2. The Log Out button is clicked
3. View Results is clicked.
4. View Plan Inputs is clicked.
5. The Global Settings/Account button is clicked
6. The Client Plans button is clicked
7. All data in grids are saved any time you click the Update/Save icon for the row you are editing.

\*It is important to note that you should **not** hit the Back button on your browser. This will take you to a previous page and could prevent your work from being saved. You should also never just close the browser window without logging out first to ensure your data is saved.

**Rolling Years Method- When Expenses And Inflows Occur:** The program uses what is known as the "rolling years" method to determine the timing of inflows and outflows. Each time you run a plan the program must set a start date and end date for each year. The way we handle this is to set the start date for each planning year equal to today's month and day plus the year you are in. For example, if it is 12/1/2014 today then the first planning year will be 12/1/2014 through 12/1/2015. The second planning year will be 12/1/2015 through 12/1/2016 and so on.

- **Timing Of Inflows And Outflows:** It is very important to understand the assumptions the program is using here. The following logic applies to any input that uses the Start Age to determine when an inflow or outflow occurs. Let's say you have entered a Start Age for an Additional Cash Inflow of 62. The Primary User is 60 today (which is 12/1/2014) and turns 62 on 6/10/2016. In planning year 1 the user is 61 at the end of that year. In planning year 2 he is 62 years old. Because he turns 62 in planning year 2 we assign this inflow to planning year 2. See the data output image below.

Dates (Beginning Of Planning Period)	Age (End Of Planning Period)	Additional Cash Inflow After Taxes-Sale of Business
12/5/2014	61	0
12/5/2015	62	500,000

Goals & Additional Expenses work the same way in terms of the Ending Age and the timing of the outflow.

## General Information

- **Primary Client's Name:** For convenience, it is important to pick a primary client when the plan is for a couple. This is normally the person with the most assets. The program also uses the primary client's age when determining when to start and stop additional expenses and cash additions.
- **Primary Client's Birthday:** Birthday of the primary client.
- **Spouse/Partner's Name:** For convenience, it is important to pick a primary client when the plan is for a couple. This means for couples, the spouse/partner must also be chosen. The program uses the primary client's age when determining when to start and stop additional expenses and cash additions.
- **Spouse/Partner's Birthday:** Birthday of the spouse/partner.

## Personal Information

1. **Age:** This is calculated by the program.
2. **Retirement Age:** The Retirement Age has the following impact on how the retirement plan is calculated: 1)The program will stop all contributions to investments for this person at the Retirement Age unless you specifically override the Contribution End Age for an investment and 2)If living expenses in retirement begin with this person (as determined by the setting Start Living Expenses In Retirement With Retirement Of) then living expenses in retirement will begin at the Retirement Age of this person.
3. **Retirement Date:** If you want to choose an exact date when retirement occurs, use the Retirement Date rather than the Retirement Age. This way you can be more specific about when living expenses in retirement begin and when contributions to investments end. For example, if the date today is 1/1/2017 and you set the Retirement Age to 6/1/2020, on 1/1/2020 the program knows you will retire halfway through the year. Therefore, living expenses for the first year of retirement will be half of what they will be after that. Also, contributions to investments (if you set them to end at retirement) will be half the amount in that final year when retirement begins.
4. **Gross Salary Income:** Salary income (including bonuses and commissions) before taxes. Gross salary income is used for two purposes in the program: 1)To help estimate tax rates and 2)To help pay for Annual Living Expenses In Retirement when one partner in the plan retires before the other. Prior to retirement the salary income is **not** used for any expense items. This is because the program assumes that whatever is not saved before retirement is spent. This way the program does not need to keep track of income vs. living expenses before either of the partners in a plan retires. However, if one of the

partners in the plan retires before the other does, the net salary income of the spouse/partner who is still earning a salary will be used for Annual Living Expenses In Retirement before any investment funds are used.

For clients with no spouse/partner (or when both partners are working) the salary income is assumed to either be completely spent or contributed to investments. Note that the Salary Income is assumed to go to \$0 at the Retirement Age of each person in the plan.

5. **Tax Deductions:** Enter the amount that you can deduct from Gross Income for tax purposes. Do not include contributions to 401(k) plans, IRAs, or other qualified tax-deferred investments since the program calculates this tax deduction automatically each year. Enter the standard deduction here as well. Examples of other tax deductions include mortgage interest deductions and deductions for children. Gross Income minus Tax Deductions = Taxable Salary Income. The Taxable Salary Income will be used to help determine the correct tax bracket each year. The taxable salary income is assumed to go to \$0 at the Retirement Age, but the Tax Deductions will continue indefinitely. If filing joint taxes, make sure you do not double count deductions. In other words, if the total tax deductions for a couple is \$25,000 do not enter that amount for both people in the plan. You can however split this amount between the two people in the plan. Tax deductions are assumed to grow at the [Annual Inflation](#) rate.
6. **Annual Raise:** An estimate for the annual raise in gross income.
7. **End Age:** An estimate for when each person passes away. If there is a spouse/partner and this person's social security is larger than the spouse/partner's, then the spouse/partner will automatically receive these social security payments at this person's End Age. Pension payments will also be transferred and living expenses reduced (based on settings) when one partner's plan ends before the other.

## Assumptions

1. **Annual Living Expenses In Retirement (Today's Dollars):** Expected annual living expenses in retirement: Do **not** include expected taxes here as the program calculates this separately. Include living expenses such as utility and grocery bills.

Note that you do not have to input annual living expenses **before** retirement because the program assumes that whatever **Salary Income** that is not saved (contributed to investments) is spent on living expenses. However, non-living spending items before retirement, such as weddings, college education, etc. should be entered in the Goals & Additional Expenses section.

Also note that (for plans with a spouse/partner) if one of the partners in the plan retires before the other does, the net salary income of the spouse/partner who is still earning a salary will be used for Annual Living Expenses In Retirement before any



investment funds are used. For clients with no spouse/partner (or when both partners are working) the salary income is assumed to either be completely spent or contributed to investments.

If you would like to treat this input as a desired income amount in retirement then enter the amount of disposable (after-tax) income you would like to have each year. This must be expressed in today's dollars. The program will adjust this number for inflation going forward from today. Major goals and expenses that don't occur every year in retirement will be entered in the Goals & Additional Expenses section.

**\*Worksheet For Annual Living Expenses In Retirement:** Open this worksheet to input an expense amount for multiple recurring expense items such as groceries, utilities, bank fees, and many others. You can create your own items here, use this worksheet as a budgeting tool, and update the amounts any time you like. The program will show you a running total of the recurring expense amounts and once you hit the Save button, the total amount will be transferred to the input for Annual Living Expenses In Retirement (Today's Dollars).

- 2. Change Returns Linearly Towards Retirement:** This setting provides a way to gradually move returns from the Return Before Retirement to the Return During Retirement. The purpose is to simulate a rebalancing of assets towards the mix that will exist during retirement. Generally returns gradually move down towards the more conservative, and lower, return expected during retirement. If you want simulate this rebalancing effect, set this setting to Yes.
- 3. Annual Living Expenses In Retirement That Vary Over Time:** If you choose 'Living Expenses That Vary Over Time' for the setting 'Input Method For Annual Living Expenses In Retirement' you will then be able to open a pop-up window that allows you to vary retirement expenses over as many years as you like. Start by entering the first recurring expense amount. If retirement has not begun yet then this amount is the first recurring expense amount in retirement. If retirement has already begun then this first expense amount will be this year's living expenses. Enter the next (changed) recurring expense amount in the second row. Make sure you enter a Duration for each varied expense. Remember that all recurring expense entries should be entered in Today's Dollars. The program will inflate all expenses by the input for Annual Inflation each year. To add more rows for varying expenses click the Add Row button. The program will assume that the last row with a non-zero entry for Annual Living Expense In Retirement will last through the end of the plan.
- 4. Annual Inflation:** The expected inflation rate each year. This input is used for determining the increase in the amount of Annual Living Expenses In Retirement each year. The annual inflation rate is applied to these expenses each year. This inflation rate can also be used for other items in the Goals & Additional Expenses

section and the Additional Cash Inflows section, but the user may override this with his or her own inflation assumption in these sections. The program does not apply the inflation rate to rate of return assumptions.

Advisors have the option of using a vector where inflation can change to any amount in any year. An example of the proper syntax is: “2%|2020 then 4%|2040 then 5%”. This tells the program to use a 2% inflation rate until 2020 then 4% until 2040 then 5% for each year afterward. Note that the “|” symbol is on the same key as the “\” key on most keyboards. This is usually above the Enter key. Users may also use a semicolon in place of the “|” symbol.

5. **Annual COLA Inflation:** This is used when estimating social security as well as adjusting future social security and pension benefits for inflation. COLA stands for Cost Of Living Adjustment and is determined by the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), which is tabulated by the U.S. Bureau of Labor Statistics. This figure is used for social security benefits and many pension plans.
6. **Reduction in Expenses When Partner's Plan Ends (%):** The percent reduction in recurring, annual expenses in retirement when one partner passes away before the other.

## Taxes

1. **Average Federal Tax:** We recommend setting this to “Use Program Estimate”. The program will use the current, updated federal tax code and estimate the taxes on every dollar of income, taking into account the fact that tax rates increase as income increases. The program also takes into account tax rates for filing jointly (if a spouse/partner exists in the plan) vs. filing as a single filer. Users may also input an average federal tax rate to be applied to each dollar of income.
2. **Average State Tax:** Due to the differences and complex rules of each individual state, the program does not provide an estimate for state taxes. But because state taxes are so much smaller than federal taxes, this has minimal impact on the overall plan. Users must input an average state tax rate that will be applied to each dollar of income.
3. **Average Effective Tax on Capital Gains:** We recommend setting this to “Use Program Estimate”. The program will use the current federal tax code for capital gains taxes. The program will add in state taxes as well, using the setting for Average State Tax. Note that the program assumes all capital gains are long term gains and are therefore subject to the

long term capital gains tax rate. Users may also input the capital gains tax rate to be applied to each dollar of capital gains.

4. **Apply State Taxes To Social Security Payments:** Many states do not tax social security payments. Set this to No if the state of residence does not tax these payments.
5. **Apply State Taxes To Pension Payments:** Many states do not tax pension payments. Set this to No if the state of residence does not tax these payments.

## Settings

1. **Contributions to Qualified Investments:** If you want the contributions for Qualified Investments to be a set percentage of the investments each year, use “% of Income” for this setting. If you want to enter a dollar figure, use “Dollars”. If “Dollars” is selected, the program will adjust the contribution each year by the inflation rate.
2. **Contributions to Other Investments:** If you want the contributions for all other investment types to be a set percentage of the investments each year, use “% of Income” for this setting. If you want to enter a dollar figure, use “Dollars”. If “Dollars” is selected, the program will adjust the contribution each year by the inflation rate.
3. **Withdraw Funds From Taxable/Tax-Advantaged:** If you would like funds withdrawn from Taxable & Tax-Advantaged investments in the order they were inputted choose ‘In Order’. If you would like funds withdrawn proportionally choose ‘Pro-Rata’.
4. **Withdraw Funds From Qualified:** If you would like funds withdrawn from Qualified Tax-Deferred investments in the order they were inputted choose ‘In Order’. If you would like funds withdrawn proportionally choose ‘Pro-Rata’.
5. **Withdraw Funds From Non-Qualified:** If you would like funds withdrawn from Non-Qualified Tax-Deferred investments in the order they were inputted choose ‘In Order’. If you would like funds withdrawn proportionally choose ‘Pro-Rata’.
6. **Start Living Expenses In Retirement With Retirement Of:** This setting only applies if there is a spouse/partner in the plan. If you want the Annual Retirement Expenses to start with the primary user, select him or her. Otherwise choose the spouse/partner. The program will begin applying recurring retirement expenses at the retirement date chosen here. Prior to the start of living expenses in retirement, the program assumes that all living expenses are paid for using other income sources such as salaries.

Note that this date is also considered the official retirement date for the plan. This comes into play when determining the retirement date for certain graphs and displayed data.

In general program does not attempt to match up salary income with living expenses before retirement as it assumes that all money before retirement for each person that is not saved is spent. There is an exception to this rule. Let's look at an example. We have two people in the plan, John and Jane. John retires in 10 years at age 62 and Jane retires in 15 years. The setting for Start Living Expenses In Retirement With Retirement Of is set to **John's** retirement date. In this case we will have five years where there are retirement expenses, but Jane is still earning a salary. So the program will assume that you want to take these expenses from Jane's salary first. After that the program will look to take expenses from any contributions to investments and then in the order of Pensions, Social Security, Additional Cash Inflows, Taxable & Tax-Advantaged Investments, Non-Qualified Investments, then Qualified Investments.

If you set this setting to the later of the retirement dates, but there will be a drawdown of income sources and/or investments due to the other partner retiring earlier, you will want to enter a temporary expense amount in the Goals & Additional Expenses section.

Example: John retires in 10 years at age 62 and Jane retires in 15 years. The setting for Start Living Expenses In Retirement With Retirement Of is set to **Jane's** retirement date. But between the time when John retires and Jane retires, there are living expenses of \$20,000 that must be paid from sources such as John's pension, social security, or even from investments. In this case you can enter the following in the Goals & Additional Expenses section. Amount: \$20,000 Start Age: 62 Duration: 5 (because there are 5 years between when John retires and the living expenses in retirement kick in.

7. **Asset Management Fee:** Enter the annual percentage fee applied to assets under management. The program will reduce the annual rates of return for all investment assets by this amount.
8. **Show All Outputs/Graphs in Today's Dollars:** If set to Yes the program will show all outputs in the Data section and data in Graphs in today's dollars by adjusting for compounded inflation each year. Setting this to Yes makes it much easier to compare dollars across time.
9. **Rebalance Investments Annually:** Choose Yes if you would like to the program to automatically rebalance investments at the end of every year. Note that the program will only rebalance the categories of Taxable/Tax-Advantaged and Qualified Tax-Deferred investments. Non-Qualified investments are not rebalanced each year due to the fact that most non-qualified investments cannot easily be traded in and out of.

After rebalancing, the weighting for each investment will be set back to its beginning weighting. If investments are reallocated at a future date, then annual rebalancing weights will be reset to this new allocation.

10. **Reallocate Investments At A Future Date:** Set this to Yes if the portfolio will be reallocated at a future date. You will be able to then reallocation to a [model portfolio](#). You can set up your own models or use the program defaults to choose from.
11. **When To Reallocate:** If Reallocate Investments is set to Yes, this setting will be shown. You can choose to reallocate at either partner's retirement date or you can input your own year to reallocate investments. You can also choose to reallocate Immediately, which is very useful for advisors who plan on reallocating clients to a model portfolio within the next year.
12. **Annual Return Method (For Advisor Version Only):** Choose Each Investment if you want to apply annual return and tax assumptions to each investment. Choose By Asset Class if you want to map annual return and tax assumptions to each investment based on its Asset Class. The mapping rules can be changed in the [Asset Class Mapping](#) grid in the Asset Class Assumptions section. New asset classes can be added here as well.
13. **Show Contribution Starting/Ending Age Inputs (For Individual Version Only):** We give you the option to show these inputs in order to avoid as much clutter on the screen as possible. The default value is No. If you would like to use these inputs, simply set this setting to Yes. For more information on the setting for Contribution Start and End Dates go [here](#).
14. **Apply Monte Carlo To Calculations:** If set to Yes the program will run Monte Carlo simulations for the main outputs and all scenarios. This allows the program to calculate the probability of meeting/funding all goals and expenses before the end of the plan

## Asset Class Mapping

- **Overview:** The Asset Class Mapping grid can be found in the Asset Class Assumptions section on the Profile/Account page. This mapping grid allows advisors to choose how annual return and tax assumptions are mapped to each asset class. This allows users to have the program automatically assign annual return and tax assumptions to each investment based on that investment's asset class. This makes it easier to enter investment information and it allows advisors to use the [Asset Allocation Scenarios](#). Note that the return assumptions entered are nominal rates of return, not real rates of return.
- **Creating A New Asset Class:** Users can create an unlimited number of asset classes. Hit the Add Asset Class button to do this. You must enter annual return assumptions and tax assumptions for each new asset class created. You must also choose a program-defined asset class to map to for Monte Carlo purposes so the program can assign a standard deviation and correlations to this asset class.

- **The Program Default Values For Annual Returns And Tax Assumptions:** The annual return values and the values for % Of Return Due To Dividends and % Of Return Due To Interest are based partially on the past 20 years of historical data of various indices and partly based on intuition. Where it makes sense, we have adjusted the expected annual return from its historical value. For example, short-term treasury bonds may have returned over 5% over the past 20 years, but given where yields are today we have given this asset class a default annual return assumption of 0.2%. Of course, advisors are free to change these return assumptions to anything they wish.
- **% Of Return Due To Interest And Dividends:** If you change these fields it is important to input a reasonably accurate figure so the program can more accurately calculate taxes. Note that these two fields do not have to add up to 100% since the remaining amount will be assumed to be the percent of the annual return due to capital gains.

## Monte Carlo Assumptions & How Monte Carlo Works

**How Monte Carlo Works:** Monte Carlo analysis works by generating multiple simulations on total returns for every investment in the retirement plan. The steps inside the program work as follows:

- a) Generate 1,000 random numbers (there are 1,000 simulations) for each asset class for every year in the plan based on that asset class's standard deviation and correlation with every other asset class. For our random number generation we use a well-tested third party program, [Extreme Optimization](#). Total returns through time are assumed to be normally distributed.
- b) Each investment has its own inputted total return assumption, which is taken to be the mean return in Monte Carlo. Each investment is also assigned an asset class classification by the user. In each simulation we scale each investment's mean return (the return inputted by the user) up and down every year based on the random number generated and that investment's inputted return.
- c) For each simulation we can calculate whether or not the clients run out of money. After 1,000 simulations the program takes the number of simulations where the clients do not run out of money before the end of their plan divided by 1,000. This is the probability that they will not run out of funds before the end of their plan

- 1. Distribution To Use:** Choose which statistical distribution is used when random numbers are generated. Although many random variables exhibit a normal distribution, equity and fixed income returns have exhibited a Laplace distribution over the past ten years. A Laplace distribution has fatter tails, which increases the probability of extreme events relative to a normal distribution. In statistical terms, a Laplace distribution has kurtosis of 6.0, while a normal distribution has a kurtosis of 3.0. More information on these terms can be found here:

Laplace Distribution- [http://en.wikipedia.org/wiki/Laplace\\_distribution](http://en.wikipedia.org/wiki/Laplace_distribution)

Kurtosis- <http://en.wikipedia.org/wiki/Kurtosis>

Are Stock Returns Normally Distributed?-

<http://www.dimensional.com/famafrench/2012/01/qa-are-stock-returns-normally-distributed.html>

- 2. Standard Deviations:** The standard deviation measures the volatility of the annualized total return. It is an important input in the generation of random numbers in the Monte Carlo simulations. The default values are the actual standard deviations calculated using various indexes over the past 10 years. You are free to change the standard deviations to any number you wish. To restore the default values, simply hit the Restore Defaults For Standard Deviations button.
- 3. Correlations:** Correlation measures how the total returns of each asset class move with each other over time. The correlation must be between -1.0 and 1.0. The default values are the actual correlations of annual returns calculated using various indexes over the past 10 years. You are free to change the correlations, but keep in mind that if there is not enough variation in the correlations the Monte Carlo will throw an error indicating that the random numbers could not be generated and Monte Carlo failed. To restore the default values, simply hit the Restore Defaults For Correlations button.

#### 4. Sources of information for historical standard deviation and correlation data:

Asset Class	Source
Cash	1 Month CD Rate From Federal Reserve Data
Short Term Bonds	iShares Short Term Bond ETF (SHY)
Medium Term Bonds	iShares Medium Term Bond ETF (IEF)
Long Term Bonds	iShares Long Term Bond ETF (TLT)
Value Stocks	iShares Russell 1000 Value Index (IWD)
Growth Stocks	iShares Russell 1000 Growth Index (IWF)
International Developed Stocks	SPDR S&P World Ex-US (GWL)
Emerging Market Stocks	iShares MSCI Emerging Markets (EEM)

## Taxable And Tax-Advantaged Investments

- **What to Enter Here:** Any investments that are not fully tax-deferred for both federal and state taxes should be entered here. This includes bank accounts, money market funds, taxable funds, municipal bonds and funds (tax-free interest), Roth IRA plans, 529 plans, and HSA/FSA accounts.
  - **Which Types of Investments are Included:** Accounts such as HSA (Health Savings Accounts) and FSA (Flexible Spending Account) are included in this section because the holder never has to pay taxes on the amounts withdrawn, as long as the withdrawals are used for the correct purposes. Therefore, they do not fall in the tax-deferred category. They are labeled “tax-advantaged” instead, which is why they show up in this section
  - **Tax Issues:** The program takes into account special tax features for accounts such as municipal bonds and HSA/FSA accounts in terms of the tax code. For example, the program will not apply any income tax to interest in accounts labeled “Tax-Free Interest”. The program will also not apply any taxes to accounts labeled “Roth IRA”, “HSA/FSA”, or “Tax-Free Interest and Principal”.
  - **Choices on How to Enter Investments:** Users can be as specific as they want when it comes to entering their investments. You can enter individual stocks, or aggregate them into one account. You can even aggregate similar funds, such as taxable equity funds, into one investment for one easy entry. Some users even combine all primary and spouse/partner funds into one investment for a quick start. But keep in mind, the more specific you are with entering you investments, the more accurate your retirement plan will be.
  - **Order of Funds Withdrawal:** See this [setting](#).
  - **Withdrawal of Income vs. Principal:** The program will always withdraw income from each investment first in order to pay for expenses.
  - **Which Account Should Appear First?:** In general it is a good idea to place an account such as a money market fund first due to tax efficiencies. When withdrawing funds you do not want to take money out of investments that will trigger capital gains taxes. So generally speaking it is best to place investments with the lower cost basis (and likely higher capital gains taxes) further down the list.
1. **Investment Name:** Each investment should have a unique name for display purposes later.
  2. **Joint Account?:** Check this checkbox if an investment is owned joint between the primary user and the spouse/partner. The program will then group all joint account assets together for reporting purposes.



3. **Assign Asset Classes Using A Model Portfolio:** In the Asset Class/Holdings section you will see a question that asks 'Would you like to apply a model portfolio that sets the asset classes for this account/investment?' If you choose Yes you may apply a [Model Portfolio](#) to an investment asset. This will assign the asset classes to this asset using a model you can set up. For example, let's say you have a client that has many investment assets and these assets are invested in several asset classes. But they are all using the same model in that they are in 25% Long-Term Bonds, 25% Value Stocks, and 50% Growth Stocks. Rather than assigning these asset classes manually to each investment, you can simply set up a model that defines this asset allocation, then apply this model to every investment in the plan.
4. **Multiple Holdings:** Choose Yes for 'Is this an account with multiple holdings in it?' if you are entering an account, such as a 401(k) account, that has multiple investment holdings. For example, you are entering a 401(k) plan that is invested in three funds. You can enter the account (the 401(k) plan) as one line item in the Qualified Tax-Deferred grid and enter the three investment holdings in the Holdings pop-up window. This helps organize the investments and reduces the number of times you have to input information.
5. **Asset Class:** The classification that most fits each investment. It is used to calculate and display the current asset allocation among assets. If applicable, it will also be used in Monte Carlo analysis to determine which standard deviation and correlation to use.

### **Individual Version:**

Users may enter any asset class they wish and this asset class will show up in the pie chart for asset allocation and in the report. For example, just type in "Gold" for the asset class and you will see this asset class appear with the proper % allocation for that investment. Keep in mind that if you are inputting your own asset class name you cannot input multiple asset classes for that investment.

If you have inputted your own asset class and you are using Monte Carlo analysis, the default asset class used for Monte Carlo purposes will be Cash. However, you can override this. For example, if you input Gold as you asset class and you want to use Growth Stocks for your Monte Carlo asset class for the standard deviation and correlations, you would input Gold|Monte Carlo Asset Class=Growth Stocks.

### **Advisor Version:**

The Advisor version allows advisors to create their own asset classes in the [Asset Class Mapping](#) section. Any asset classes created by the advisor will show up in the dropdown list for the Asset Class.

6. **Multi Asset Classes:** If an investment has more than one asset class you may assign more than one asset class to it. For example, you need to enter a mutual fund that is invested 50% in long-term bonds and 50% in value stocks. By choosing Multi Asset Classes for an for investment asset you can assign 50% to long-term bonds and 50% to value stocks and save this. The program will then take into account this asset allocation when running the plan.

7. **Current Balance:** The current balance of each investment.
8. **Annual Contribution:** The annual contribution to each investment. Pay attention to whether you chose to enter this as % of Income or Dollars in the Settings section. Contributions are assumed to grow at the rate of the rate of [Inflation](#) each year.

Some users like to change their contributions during certain years. However, we purposely do not allow changing contributions through time as this could cause double-counting of expenses. The program looks at the situation this way- a decrease in contributions before retirement will be due to a change in expenses, normally a large expense. So if you will not contribute anything to savings in the year 2015 due to a wedding, you should enter an expense for wedding under Goals & Additional Expenses. The program will automatically deduct this expense from your contributions for that year first. If the contributions are not enough to pay for the wedding, the program will take the rest out of investments.

9. **Roth IRA Transfer:** Users can transfer money from a traditional IRA to a Roth IRA in the Annual Contribution section. Choose the selection for a Roth Transfer and select which traditional IRA to transfer from. Make sure you do not include Roth IRA transfers in the regular Annual Contribution input as this would be double-counting.
10. **Account Type:** It is important to classify the account types properly for tax purposes. Choose the account type that best fits each account or investment.
11. **Return Before Retirement:** The average expected nominal rate of return before retirement. Note that Before Retirement refers to the Official Retirement Date of the plan which is determined by the setting 'Start Living Expenses In Retirement With Retirement Of'.

Advisors have the option of using a vector where returns can change to any amount in any year. An example of the proper syntax is: “6%|2020 then 5%|2030 then 4%”. This tells the program to use a 6% return until 2020 then 5% until 2030 then 4% for each year afterward. Note that the “|” symbol is on the same key as the “\” key on most keyboards. This is usually above the Enter key. Users may also use a semicolon in place of the “|” symbol.

12. **Return After Retirement:** The average expected nominal rate of return after retirement has begun. Note that After Retirement refers to the Official Retirement Date of the plan which is determined by the setting 'Start Living Expenses In Retirement With Retirement Of'.

Advisors have the option of using a vector where returns can change to any amount in any year. An example of the proper syntax is: “6%|2040 then 5%|2050 then 4%”. This tells the program to use a 6% return until 2040 then 5% until 2050 then 4% for each year afterward. Note that the “|” symbol is on the same key as the “\” key on most keyboards. This is usually above the Enter key. Users may also use a semicolon in place of the “|” symbol.

13. **Estimated Cost Basis:** The cost basis is used to determine capital gains taxes when principal is withdrawn. It is important to at least come up with an estimate for the cost basis. If the investment has little to no capital gains, such as a money market fund or bank account, enter an amount that is equal to the investment’s current balance.
14. **% Return Due to Dividends:** This only applies to stocks with dividends, equity funds or funds that have an equity component to them. It is used for tax purposes. If your fund has a dividend yield of 2% and you expect total returns of 4% annually on this fund, then 50% of your return is due to dividends.
15. **% Return Due to Interest:** This only applies to bonds, bond funds or funds that have a bond component to them. It is used for tax purposes. If the fund is 100% in bonds and you expect no capital gains on the fund then this setting should be 100%.

### Qualified Tax-Deferred Investments

- **What to Enter Here:** Any investments that are qualified (contributions are tax-deductible) and tax-deferred should be entered here.
- **Which Types of Investments are Included:** Accounts that are 401(k) plans, all IRAs except Roth IRAs, and any other qualified tax-deferred account.
- **Tax Issues:** The program takes into account the special tax-deferred features of these types of investments. Income taxes are paid upon withdrawal of assets.
- **Required Minimum Distributions (RMDs):** Qualified tax-deferred accounts must be withdrawn from as required by federal law. Currently RMDs begin in the year the owner turns 70.5. The program takes this into account and will forcibly withdraw money from these accounts if the money has not already been taken out for expenses. RMDs are deposited into all taxable accounts pro-rata, based on the current investment balances at that point in time.
- **Choices on How to Enter Investments:** Users can be as specific as they want when it comes to entering their investments. You can enter individual stocks, or aggregate them into one account. You can even aggregate similar funds, such as equity funds, into one investment for one easy entry. Some users even combine all primary and spouse/partner

funds into one investment for a quick start. But this is generally a bad idea for qualified accounts since RMDs depend on the age of the actual owner of the account.

- **Order of Funds Withdrawal:** See this [setting](#).
  - **Withdrawal of Income Vs. Principal:** The program will always withdraw income from each investment first in order to pay for expenses.
  - **Which Account Should Appear First?:** The user should enter the investments in the order in which they want them withdrawn from.
1. **Investment Name:** Each investment should have a unique name for display purposes later.
  2. **Asset Class:** The classification that most fits each investment. It is used to calculate and display the current asset allocation among assets. If applicable, it will also be used in Monte Carlo analysis to determine which standard deviation and correlation to use. You can also input a mixed allocation for a single investment by using the [Multi-Asset Class](#) column.
  3. **Current Balance:** The current balance of each investment.
  4. **Annual Contribution:** The annual contribution to each investment. Pay attention to whether you chose to enter this as % of Income or Dollars in the Settings section.
  5. **Contribution Start Age:** The age when contributions begin.
  6. **Contribution End Age:** The age when contributions end.
  7. **Allow Funds To Be Used:** This setting allows the user to choose when funds from an investment can be accessed or used for spending purposes. The default value is 'Any Time'. Users can also choose 'At Retirement' or input any age. This setting allows users to " earmark " funds for specific purposes by setting the age when the funds from each investment can be accessed. For example, if you do not want anything from Fund A to be used until age 68 when a second home will be bought, select 'Enter Age' and then enter the age in the input for 'Age When Funds Can Be Used'.
  8. **Company Match (%):** Company match is the amount the employer will contribute to a client's qualified plan. It is a percentage of the amount the client puts in. Example: Client contributes \$5,000 per year. A match of 20% would mean the company contributes  $.20 * \$5,000 = \$1,000$ . The amount is limited by the maximum match though.

- 9. Maximum Match (% of Salary):** The maximum match is the maximum percent of your salary that your company will match. If the maximum match is 10% this means the company will stop contributing to your plan after you have contributed 10% or more of your salary to the plan. It works as follows: Maximum Match=10%. Client has a \$100,000 income and the company matches 20%. The maximum company match amount is  $.10 * \$100,000 * .20 = \$2,000$ .
- 10. Allow Early Withdrawal?:** There are three choices for this setting: No, Yes With 10% Penalty, and Yes With No Penalty. If set to No the program will not withdraw any funds for expenses if the user would incur any type of penalty (before age 59.5). If set to Yes With 10% Penalty, the program will withdraw funds for expenses and apply a 10% penalty. If set to Yes With No Penalty, funds can be withdrawn and no penalty is assessed.
- 11. Roth 401k?:** If the investment is a Roth 401(k) then check this on so the program knows how to accurately handle the tax implications. Roth 401(k) investments will not be taxed on the portion the client contributed, but the contributions by the employer are taxed at ordinary income tax rates. Note that for past contributions, which the program does not have a record of, we assume the same proportion of client contributions to employer contributions.
- 12. Is Deferred Compensation:** Deferred compensation will grow tax-free. Withdrawal start and end ages are set by the user. The withdrawals are assumed to be linear based on the balance that exists at the first withdrawal date. Withdrawals end at the withdrawal End Age. When withdrawals are made, the withdrawals are taxed at the income tax rate at that time. All withdrawals after-tax are deposited into the taxable accounts pro-rata based on the taxable account balances at that time. No withdrawals will be made before age 59.5
- 13. Return Before Retirement:** The average expected return before retirement. Advisors have the option of using a vector where returns can change to any amount in any year. An example of the proper syntax is: “6%|2020 then 5%|2030 then 4%”. This tells the program to use a 6% return until 2020 then 5% until 2030 then 4% for each year afterward. Note that the “|” symbol is on the same key as the “\” key on most keyboards. This is usually above the Enter key. Users may also use a semicolon in place of the “|” symbol.
- 14. Return During Retirement:** The average expected return during retirement. Advisors have the option of using a vector where returns can change to any amount in any year. An example of the proper syntax is: “6%|2040 then 5%|2050 then 4%”. This tells the program to use a 6% return until 2040 then 5% until 2050 then 4% for each year afterward. Note that the “|” symbol is on the same key as the “\” key on most keyboards. This is usually above the Enter key. Users may also use a semicolon in place of the “|” symbol.

## Non-Qualified Tax-Deferred Investments

- **What to Enter Here:** Any investments that are tax-deferred, but the contributions are **not** deductible from income in the year they are deposited into the account.
  - **Which Types of Investments are Included:** Accounts such as annuities that can grow tax-deferred until the funds are withdrawn.
  - **Tax Issues:** The program takes into account the special tax-deferred features of these types of investments. Income taxes are paid on the difference between the amount withdrawn and the cost basis of that amount.
  - **Choices on How to Enter Investments:** Users can be as specific as they want when it comes to entering their investments. You can aggregate similar funds, such as equity funds, into one investment for one easy entry. Some users even combine all primary and spouse/partner funds into one investment for a quick start. But keep in mind, the more specific you are with entering your investments, the more accurate your retirement plan will be.
  - **Order of Funds Withdrawal:** See this [setting](#).
  - **Withdrawal of Income vs. Principal:** The program will always withdraw income from each investment first in order to pay for expenses.
  - **Which Account Should Appear First?:** The user should enter the investments in the order in which they want them withdrawn from.
1. **Investment Name:** Each investment should have a unique name for display purposes later.
  2. **Asset Class:** The classification that most fits each investment. It is used to calculate and display the current asset allocation among assets. If applicable, it will also be used in Monte Carlo analysis to determine which standard deviation and correlation to use. You can also input a mixed allocation for a single investment by using the [Multi-Asset Class](#) column.
  3. **Current Balance:** The current balance of each investment.
  4. **Annual Contribution:** The annual contribution to each investment. Pay attention to whether you chose to enter this as % of Income or Dollars in the Settings section.

- 5. Return Before Retirement:** The average expected return before retirement. Advisors have the option of using a vector where returns can change to any amount in any year. An example of the proper syntax is: “6%|2020 then 5%|2030 then 4%”. This tells the program to use a 6% return until 2020 then 5% until 2030 then 4% for each year afterward. Note that the “|” symbol is on the same key as the “\” key on most keyboards. This is usually above the Enter key. Users may also use a semicolon in place of the “|” symbol.
- 6. Return During Retirement:** The average expected return during retirement. Advisors have the option of using a vector where returns can change to any amount in any year. An example of the proper syntax is: “6%|2040 then 5%|2050 then 4%”. This tells the program to use a 6% return until 2040 then 5% until 2050 then 4% for each year afterward. Note that the “|” symbol is on the same key as the “\” key on most keyboards. This is usually above the Enter key. Users may also use a semicolon in place of the “|” symbol.
- 7. Estimated Cost Basis:** The cost basis is used to determine how much of the withdrawal that income taxes will be paid on. For non-qualified tax-deferred investments, income taxes are paid on the amount of the investment that is over and above the cost basis amount. It is important to at least come up with an estimate for the cost basis. If you do not know the cost basis, enter an amount that is equal to the investment’s current balance.

### **Guaranteed Annuity Income Payments**

- **Overview:** Qualified-Tax Deferred and Non-qualified Tax-Deferred investments in the program have the option of guaranteed income payments. If the client has an annuity that is invested in assets, but will annuitize in the future and/or pay out guaranteed income payments in the future, you can use this to set the income payment parameters. It is important to point out a few assumptions the program makes with these types of annuities:
  - (1) The principal balance of an annuity that is paying or will eventually pay a guaranteed income payment cannot be accessed for expenses until the annuity payment period ends (if it ever ends). This includes both principal and growth on the principal.
  - (2) The program keeps track of the investment balance and any investment growth through time. As annuity income payments are paid out, this amount is subtracted from the overall balance of the annuity. If the annuity income period ends before the death of the client, the program will then show the balance and the principal and growth can then be used to fund expenses.
  - (3) Earmarking (using the setting [\*Allow Funds To Be Used\*](#)) is not allowed for annuities that have guaranteed income payments.

(4) Any income payments that are not used to fund expenses or for taxes will be transferred to the taxable accounts pro-rata. The program transfers these payments because reinvesting them back into the annuity is generally not allowed. The amount transferred can be seen in the Data time series under the column *Guaranteed Annuity Income Payments Transferred To Taxable Accounts*.

- **Is This Payment Based On The Annuity Balance When Payments Begin?:** If the annuity payments will be based on the balance of the underlying investments that exist when the annuity payments begin, choose Yes. The program will then calculate the payment based on the balance of the underlying investments multiplied by the entry for 'Percent Of Balance For Payment Calculation'. The payments after the first payment will grow by the Growth Rate entered.
- **Income Payment Amount (\$):** The amount of the first or upcoming annuity payment. If the payments have already begun, enter the amount of the next payment here.
- **Start Age:** The starting age for the annuity income payments.
- **Duration (Years):** The number of years the income payments will last. If they last for the life of the client, enter 100 here.
- **Growth Rate (%):** The annual growth rate of the income payments.
- **Percent Of Payment Passed On To Spouse/Partner:** The percent of the annuity payment passed on to the spouse/partner if this person dies first.

## Social Security/Pension

1. **Use Estimate:** This setting applies only to Social Security. If this is checked the program will estimate social security payments. We use the Social Security Administration (SSA) algorithm for estimating social security benefits. This algorithm is described in detail here- <http://www.ssa.gov/pubs/10070-10.html>. Basically the program looks at the current Gross Salary Income entered by the user and uses that combined with the entry for Annual Raise to estimate what the social security payment will be. If historical salary information is needed the program assumes that the salary today was the salary in previous years, deflated by the Annual Raise amount.

We highly recommend that you get an accurate estimate from the SSA. You can calculate an estimate here- <http://www.ssa.gov/estimator/>

2. **Annual Payment Before Taxes:** The social security or pension payment (before taxes are deducted). If you are not yet receiving your payment, this is the amount of the first annual payment you will receive. If you are already receiving payments, enter the amount of the next annual payment you will receive.



3. **Payment Will Change In Future:** Check this on if the social security payment for this person will change at some point in the future due to pursuing a strategy such as files & suspend or restricted application where the payment will increase at a later date.
4. **Changed Annual Payment Before Taxes:** If the social security payment will change in the future due to a strategy such as restricted application, this is the new payment at the future date.
5. **Age Of First Payment:** The age the new social security payment (described above) occurs. You may also choose Full Retirement Age here. Full Retirement Age is the age when full social security benefits are achieved. A detailed description of the Full Retirement Age can be viewed here- <http://www.ssa.gov/planners/retire/retirechart.html>.
6. **Today's Dollars:** If checked the program will assume the payment entered is in today's dollars. The payment will then be adjusted each year by the COLA rate for social security and by the setting Growth Rate of Pension for any pension payments.
7. **Allow Switch to Spouse/Partner's Social Security if That Person Passes Away First:** Most of the time one can switch to a spouse's social security payments if the spouse passes away and his or her social security payments are larger. But some people, such as those collecting government pensions, are not allowed to make this switch. Check this Off if this is the case here.
8. **Age of First Payment:** Age when the first payment occurs.
9. **Percent of Pension That Survives Client:** The percent of the annual pension payment that will go to this person's spouse/partner if this person passes away first.
10. **Growth Rate of Pension:** Choose how you want the pension payment to grow each year. You can have it move with the COLA index, the regular inflation rate, or set your own % growth rate.

## Goals & Additional Expenses

- **What to Enter Here:** Additional expenses are for items that will not necessarily occur every year in retirement. Examples are paying for children's college, vacations, and long term care insurance.
- **Expenses Before Retirement:** You should only enter a goal/additional expense before retirement if the funds to pay for this expense will **not** come out of regular salary income. All expenses before retirement are first funded from contributions that would have gone to investments and then from the investments themselves.

So for example, if you have an expense before retirement such as utility payments that occur every year, you do not want to enter that in this section. The program will have already accounted for this expense since we assume that any income before retirement that is not saved is spent. However, if there is a one-time expense before retirement such as \$15,000 for a wedding, you **do** want to enter that in this section as this large one-time expense will either cause your savings to decline that year, will cause a drawdown of investments, or both.

- 1. Expense Name:** Each expense should have a unique name for display purposes later.
- 2. Amount (Today's Dollars):** The annual amount of the expense in today's dollars. This amount will be adjusted each year by the growth rate entered.
- 3. Start Age:** The age in which the expense starts. It is very important to note that the program looks to the age at the **end** of the planning year, **not** the age at the beginning of the planning year. For example, let's say the Start Age for a goal/expense is 65 and the primary user turns 65 on 7/1/2015. We are running the plan on 2/1/2015, which means the first planning year is 2/1/2015 through 2/1/2016. Because the primary user turns 65 within this period the expense will be applied in this period.
- 4. Duration (Years):** How many years the expense will last.
- 5. Recurrence:** Specify if the expense will occur every year or sporadically.
- 6. Growth Rate Before Start Date:** The growth rate (inflation rate) of the expense before the expense begins. There is the option to use "Use Inflation Setting", which will use the inflation rate set earlier in [Assumptions](#).
- 7. Growth Rate After Start Date:** The growth rate (inflation rate) of the expense after the expense begins. There is the option to use "Use Inflation Setting", which will use the inflation rate set earlier in [Assumptions](#).

### **Additional Cash Inflows**

- **What to Enter Here:** Additional cash infusions that may occur at any time. Examples are the sale of a business, inheritance, or the sale of stock options.
- **Where Cash Additions Go:** Any cash additions are placed into the Taxable And Tax-Advantaged Investments pro-rata, based on their balances at that time..

- 1. Cash Addition Name:** Each cash addition should have a unique name for display purposes later.
- 2. Amount (Today's Dollars):** The annual amount of the cash addition in today's dollars. This amount will be adjusted each year by the growth rate entered.
- 3. Start Age:** The age in which the cash addition starts. It is very important to note that the program looks to the age at the **end** of the planning year, **not** the age at the beginning of the planning year. For example, let's say the Start Age for a cash inflow is 65 and the primary user turns 65 on 7/1/2015. We are running the plan on 2/1/2015, which means the first planning year is 2/1/2015 through 2/1/2016. Because the primary user turns 65 within this period the cash inflow will be applied in this period.
- 4. Duration (Years):** How many years the cash inflow will last.
- 5. Recurrence:** Specify if the expense will occur every year or sporadically.
- 6. Growth Rate:** The growth rate (inflation rate) of the cash inflow. There is the option to use "Use Inflation Setting", which will use the inflation rate set earlier in [Assumptions](#). Note that this is the growth rate of the cash inflow starting from **today**. It is **not** the growth rate of the cash inflow after the inflow occurs. After the inflow occurs, the cash is placed into the taxable & tax-advantaged investments pro-rata. As an example, if you have entered a cash inflow amount of \$100,000 that begins 10 years from now and the Growth Rate is 2%, the actual cash inflow 10 years from now will be  $100,000 * (1+.02)^{10} = \$121,899$ .
- 7. Effective Tax Rate:** Most users will want to use the option "Use Tax Settings", which will use the tax rates determined by the Taxes section. However, there may be circumstances where complex tax rules apply and the user would want to enter a tax rate that applies to that specific cash infusion.

## Outputs

- 1. Static (Non-Monte Carlo) Results vs. Monte Carlo Results:** If you have run Monte Carlo calculations, the program will show you two sections for outputs: The Static Results and the Monte Carlo Results. The Static Results show you calculations using all of the assumptions entered, but does not run multiple simulations on them. These are the static results based on one simulation.

The Monte Carlo Results show you various outputs generated by running multiple simulations on the plan. For more detailed information on how Monte Carlo analysis works, click [here](#).

2. **Total Investment Value at Retirement:** The total amount of all investment funds at each person's retirement age.
3. **Total Investment Value at End of Plan:** The total amount of all investment funds at the end of the plan (when the last person is assumed to pass away).
4. **Age of First Shortfall:** The age of clients when funds are exhausted.
5. **Average Ten Year Shortfall (Today's Dollars):** The shortfall averaged over ten years and then adjusted for any inflation that took place from the analysis date through each shortfall year. We believe it is much easier to understand how much the shortfall actually is if the amount is expressed in today's dollars. Dollars that are compounded for inflation over many years can seem nearly meaningless since the amount can be so large.
- **Analyzing the Age of First Shortfall and Average Ten Year Shortfall (Today's Dollars) Together:** It is very important that these two outputs be used in conjunction with each other. Let's look at two examples:
  - a. Age of First Shortfall: 75    Average Ten Year Shortfall (Today's Dollars): \$1,000
  - b. Age of First Shortfall: 78    Average Ten Year Shortfall (Today's Dollars): \$20,000

Which situation is preferable? Although the second output shows an age of first shortfall that is three years later than the first output, we would argue that situation #1 is preferable. This is because the average shortfall is so much less. Over ten years the shortfall (in today's dollars) is only a total of \$10,000. By saving only approximately \$10,000 more before the age of shortfall hits, this person can extend the first age of shortfall by about 10 years to age 85. This is much more difficult to do in the second situation since the shortfall is \$20,000 per year. This is why it is so important to use these two figures together when analyzing the retirement situation.

6. **Avg. Annual Spending Before Retirement:** The program deduced how much is spent on average before retirement by taking the net income of each client and subtracting any contributions/savings to investment accounts.
7. **Probability of Funding All Goals:** This number is calculated using Monte Carlo simulations where 1,000 simulations are run using varying total returns for each investment. The returns for every investment are changed every year in each simulation based on the standard deviation and correlation for the investment's asset class classification. In each simulation the program calculates whether or not the clients have made it through their plan without there being a shortfall in funds.

The program takes the number of simulations where there was not a shortfall and divides this by the number of total simulations to get the percent of simulations where there was never a shortfall in funds. This is also equal to the probability of not running out of money in retirement.

8. **Worst 25% of Simulations:** This section shows results from the worst 25% of the Monte Carlo simulations run, where worst means the lowest values for Investment Value at End of Plan. The outputs shown here are averages from the worst 25% of the simulations.
9. **Best 25% of Simulations:** This section shows results from the best 25% of the Monte Carlo simulations run, where best means the lowest values for Investment Value at End of Plan. The outputs shown here are averages from the best 25% of the simulations.

### What-If Scenarios

- **Using Scenarios to Zero in on a Solution:** Scenarios can be viewed as a way to zero in on a solution, or multiple solutions, to any retirement hurdles. All scenario items can be changed at the same time or users may change one item at a time to see how each variable impacts the plan in isolation.
- **Using Scenarios to View Pessimistic and Worst Case Forecasts:** Scenarios can also be used to look at more dire forecasts, such as social security benefits being cut, to see how that affects the retirement plan. Users can also see how much sooner they will run out of money if expenses increase by a specified percentage or inflation rises dramatically. These are only a few examples of the many scenario changes that users can enter.

### Inputs

1. **Apply To:** This setting only has an impact if the retirement plan is for a couple. If set to Both then the scenario change will impact both clients. Otherwise users can select who the change impacts. Note that not all scenario inputs are affected by this setting, such as % Change in Living Expenses, which are always shared by both clients.
2. **Probabilities:** If Assign Probabilities to Scenarios is checked, you will see inputs for Probabilities. You will need to assign a number to each scenario and the sum of the probabilities must add up to 100%. Once calculations are run you can view the expected probability-weighted results for all of the scenario outputs.

## Outputs

- 1. Total Investment Amount at Retirement:** The total amount all investments have accumulated to when each person in the plan retires.
- 2. Total Investment Amount at End of Plan:** The total amount of all investments at the end of the plan (after the last person in the plan has passed away). This is tied to the setting End Age.
- 3. Age of First Shortfall (Primary Client):** The age of the primary client when funds are exhausted.
- 4. Age of First Shortfall (Spouse/Partner):** The age of the spouse/partner or partner when funds are exhausted.
- 5. Years From Now Until Bear Market (Use Returns From Last Recession):** This scenario allows you to specify a year in which the returns from all asset classes follow the returns that were seen during the recession of 2007/2009. The program uses the rates of return seen from the stock market's peak in late 2007 through the trough in early 2009 and will apply that rate of return as an annual rate of return for **one year only** ( the year that is chosen in the scenario).

The rates of return used for each asset class are listed below. For asset user-defined asset classes the program uses the rate of return from the "mapped" asset class that is also used for standard deviations and correlations in the Monte Carlo calculations. This can be seen in the Asset Class Assumption section under the field " Map To (For Monte Carlo Standard Deviation And Correlations)"

Asset Class	Recession Return
Cash	3.0%
Short Term Bonds	6.8%
Medium Term Bonds	16.3%
Long Term Bonds	17.0%
Value Stocks	-55.1%
Growth Stocks	-48.0%
International Developed Stocks	-58.5%
Emerging Market Stocks	-60.9%

- 6. Average Ten Year Shortfall (Today's Dollars):** The shortfall averaged over ten years and then adjusted for any inflation that took place from the analysis

date through each shortfall year. We believe it is much easier to understand how much the shortfall actually is if the amount is expressed in today's dollars. Dollars that are compounded for inflation over many years can seem nearly meaningless since the amount can be so large.

- 7. Probability of Funding All Goals:** This number is calculated using Monte Carlo simulations where 1,000 simulations are run using varying total returns for each investment. The returns for every investment are changed every year in each simulation based on the standard deviation and correlation for the investment's asset class classification. In each simulation the program calculates whether or not the clients have made it through their plan without there being a shortfall in funds. The program takes the number of simulations where there was not a shortfall and divides this by the number of total simulations to get the percent of simulations where there was never a shortfall in funds. This is also equal to the probability of not running out of money in retirement.

### Other Assets & Liabilities

- **Overview:** Net Worth is the sum of all assets minus liabilities. It gives users an idea of their net equity at a point in time. The Net Worth section allows you to enter non-investment assets and liabilities that will be used to calculate a Net Worth statement.

It is important to point out that nothing added here will be used in the Retirement Plan calculations, except for Net Worth Results. The Assets & Liabilities entered in this section do not impact anything except Net Worth calculations. If you want to enter cash inflows that will occur due to the sale of an asset such as a home or a business, you must also enter that in the Additional Cash Inflows section. If you have a mortgage payment that is a liability and you want that included as an expense in the retirement plan, you must enter that as an expense either in the Living Annual Expenses input or in the Goals & Additional Expenses section.

- **Assets:** The assets entered here are those that are not already taken into account by the program. Because investment assets were already entered in the Investment sections, they do not need to be entered again here. For example, a house or a business is an asset you would want to enter here. You should enter the estimated value as of today.
- **Liabilities:** Enter all liabilities here. For example, if the principal amount of a home mortgage today is \$200,000 you would want to enter \$200,000 in the Current Balance/Amount column. You must also enter loan information with regards to the Loan Type, the Original Amount, the Interest Rate, and the Loan Term.

- **Net Worth (Today) Graph & Statement:** The program will generate a summary Net Worth statement as a graph and in the Report. The graph can be viewed using the Graph To Display dropdown list and in the Report.
- **Net Worth (Over Time) Graph:** The program will generate a graph that shows Assets, Liabilities and Net Worth over time. The graph can be viewed using the Graph To Display dropdown list and in the Report.

### Life Insurance Planner & Analysis

- **Overview:** The life insurance planner section allows you to analyze how much life insurance might be needed when one of the people in the plan passes away before the other. The program will calculate how much life insurance is needed (in today's dollar terms) such that the surviving spouse/partner never runs out of money. Keep in mind that the life insurance payout needed is the **minimum** payout necessary such that the survivor never runs out of money. The outputs and graphs from this analysis can be included in the Report. Simply add the Life Insurance Analysis page to a [report template](#).

**Age Of Death:** The age that the person passes away for life insurance analysis purposes.

- **% Reduction In Spending On Living Expenses In Retirement:** The percent reduction in annual living expenses in retirement that occurs when the person to be insured passes away. Note that this will override the input for Reduction In Expenses When Partners Plan Ends that is in the main Settings section.
- **% Reduction In Spending On Goals/Additional Expenses:** The percent reduction in spending on spending items that appear in the Goals & Additional Expenses section. Note that this reduction will only be applied to goals/expenses that occur after the person to be insured person has passed away.
- **% Change In Survivor's Contributions To Taxable/Tax-Advantaged Investments:** If the surviving spouse/partner will change contributions to his or her taxable/tax-advantaged investments after the spouse/partner passes away, enter that here. Note that this input represents the percent change in existing contributions. So if this person contributes \$5,000 annually today to taxable/tax-advantaged investments, a 10% change will increase contributions here by \$500 annually.



- **% Change In Survivor's Contributions To Qualified Investments:** If the surviving spouse/partner will change contributions to his or her qualified tax-deferred investments after the spouse/partner passes away, enter that here. Note that this input represents the percent change in existing contributions. So if this person contributes \$5,000 annually today to qualified investments, a 10% change will increase contributions here by \$500 annually.
- **% Change In Survivor's Contributions To Non-Qualified Investments:** If the surviving spouse/partner will change contributions to his or her non-qualified tax-deferred investments after the spouse/partner passes away, enter that here. Note that this input represents the percent change in existing contributions. So if this person contributes \$5,000 annually today to non-qualified investments, a 10% change will increase contributions here by \$500 annually.
- **Desired Investment Value At End Of Plan (Today's \$):** The desired total amount of money left in all investments (in today's \$) at the end of the plan. The program will take into account this goal when calculating life insurance needs.
- **Existing Life Insurance Payout:** Enter any existing life insurance payout that will occur when the person to be insured passes away.

### Long-Term Care Insurance Planner & Analysis

- **Overview:** The long-term care insurance planner section allows you to analyze how the retirement plan is impacted when one of the people in the plan goes into long-term care. It is important to note that when long-term care analysis is run for two people in a plan at the same time the analysis for each person is an **independent** analysis. In other words, the program assumes that if one person needs long-term care then the other person does not.

Note that the program assumes once a person needs long-term care, his or her contributions to investments stop at that time.

- The program will calculate the Average Ten Year Shortfall, the Investment Value At End Of Plan and the Probability Of Funding All Goals for the following three scenarios:
  1. There is long-term care insurance, but no long-term care is ever needed.
  2. There is long-term care insurance, and long-term care is needed at a future date
  3. There is no long-term care insurance and long-term care is needed at a future date.

By showing these three scenarios users can more easily make a cost/benefit analysis of whether or not long-term care insurance should be purchased.

- The outputs and graphs from this analysis can be included in the Report. Simply add the Long-Term Care Insurance Analysis page to a [report template](#).
- **Age When Entering Long-Term Care:** The age that the person needs long-term care for insurance analysis purposes.
- **% Reduction In Spending On Living Expenses In Retirement:** The percent reduction in annual living expenses in retirement that occurs when the person being analyzed needs long-term care. Note that this will override the input for Reduction In Expenses When Partners Plan Ends that is in the main Settings section.
- **% Reduction In Spending On Goals/Additional Expenses:** The percent reduction in spending on spending items that appear in the Goals & Additional Expenses section. Note that this reduction will only be applied to goals/expenses that occur after the person being analyzed needs long-term care.
- **Length Of Care Covered:** The number of years that long-term care insurance will pay for long-term care.
- **Projected Annual Cost Of Care:** The projected annual cost of long-term care in today's dollar terms. Do not include any payouts or coverage from insurance here. This is the projected amount a long-term care facility will charge or the projected amount for stay-at-home long-term care.
- **Cost Of Care Annual Inflation:** The projected annual percent increase in the annual cost of care.
- **Duration Of Long-Term Care:** The projected number of years that this person would need long-term care.
- **Annual Long-Term Care Insurance Premium:** The annual premium (in today's \$ terms) for long-term care insurance.
- **Annual Amount Of Long-Term Care Costs Covered By Insurance:** The annual amount of long-term care in today's \$ terms that would be covered by this insurance policy. Note that the amount covered is assumed to grow by the rate of the input for **Cost Of Care Annual Inflation**.

- **Insurance Premium Annual Inflation:** The projected annual growth rate of the long-term care insurance premiums.
- **Age When Insurance Premium Payments Will Begin:** This age of the person being analyzed when premiums will begin being paid for long-term care insurance.
- **Age When Insurance Premium Payments End:** This age of the person being analyzed when long-term care insurance premiums will no longer be paid. If premiums on this policy will cease to be paid when this person goes into long-term care, enter the same age as the input for Age When Long-Term Care Is Needed here.

### Asset Allocation Scenarios

- **Overview:** Asset Allocation Scenarios allow advisors to show clients how changing the asset allocation strategy will impact their retirement plan. Advisors can create their own mix of asset allocation strategies in the Asset Class Assumptions section (which is on the Profile/Account page) or they can use the program defaults for the asset allocation strategy choices. The defaults for the allocation strategy choices start with a conservative mix of investments and move progressively towards a more aggressive/risky mix of investments. Note that you must have the setting [Annual Return Method](#) set to By Asset Class in order to use this feature. You must also have [Apply Monte Carlo To Calculations](#) checked on.
- **Asset Allocation Strategies:** You can change the names of each model portfolio/asset allocation strategy as well as the percent allocated to each sector by going to the Asset Class Assumptions section on the Profile/Account page. You can change the name of each model portfolio/strategy and create new ones. You may then use these for reallocation purposes.
- **Running The Scenarios:** In the Asset Allocation Scenarios section you will see a dropdown list for each of the allocation strategies you created in the Asset Class Assumptions section. You can choose a different allocation strategy before the Reallocation date and after this date. The Reallocation date is determined by the setting [When To Reallocate](#).
- **How Assets Are Reallocated:** Investments are reallocated pro-rata in each investment section. This is best shown using an example. Let's say the current allocation for a client is 50% in Value Stocks and 50% in Long Term Bonds. The client has investments in the Taxable/Tax-Advantaged section and in the Qualified Tax-Deferred section. Both have this same allocation. The advisor runs

an Asset Allocation Scenario where the allocation is shifted to 75% Value Stocks/25% Long Term Bonds before retirement and 25% Value Stocks/75% Long Term Bonds during retirement. The program will take the funds in the Taxable/Tax-Advantaged bucket and redistribute these to 75% Value Stocks and 25% Long Term Bonds. It does the same thing for the Qualified Tax-Deferred investments.

In terms of the annual return and tax assumptions used for each asset class in these scenarios, the program looks to the [Asset Class Mapping](#) grid in the Asset Class Assumptions section.

The program also redistributes pro-rata and keeps track of all contributions to investments, ending dates for these contributions, and employer matching for qualified investments.

- **Allocation Before Reallocation Date:** The asset allocation strategy before investments are reallocated in the future. The Reallocation date is determined by the setting [When To Reallocate](#).
- **Allocation After Reallocation Date:** The asset allocation strategy after investments are reallocated in the future. The Reallocation date is determined by the setting [When To Reallocate](#).

## Generate Ideas

- **Using Generate Ideas to Help Guide You:** The Generate Ideas section is where the program will figure out scenarios for you and show you how changing variables that are in the user's control, such as retirement age, savings amounts, and spending, will impact a user's retirement situation in increments. For example, the program will take the user's retirement age and increment it up and down by one year at a time and show in a spreadsheet and a graph just how much this impacts important numbers such as the total investment amount and when funds run out in retirement.

**Client Portal (For Advisors Only)-** The client portal allows the advisor to set a username and a password for any client plan so the clients can access it themselves. The steps to give access are as follows:

- Go to the Client Plans section.
- Find the plan you want to give a client access to. Hit the Client Access link in that row.
- You will see an option for Client Access. Either choose Read Only or Read/Write. Read Only will allow the clients to view and run results for this plan, but no

changes will be saved. Read/Write allows them to make changes **and** save the results.

- You will also see two input boxes show up. One is for the Client Username and the other is for the Client Password. Set the username and password here. You should then give this information to the client or clients you want to be able to view this plan.
- Hit the Update link to update this information.

The login page for the clients is [www.mywealthtrace.com/advisor-client-login](http://www.mywealthtrace.com/advisor-client-login). They will be asked to input their username and password here. Once they input the information they are taken directly to their plan.

**Report Templates (For Advisor Version Only)**- The Report Templates section allows you to choose which pages show up in the Report. You can create as many templates as you like. Once you are logged into a plan you can choose which template to apply to the plan. You choose which template to use for a plan in the Report section.

- **Creating A Template:** To create a template simply choose which pages you would like to be in the Report. Enter a name for the template in the Template Name field then click Save.
- **Deleting A Template:** Open the template you would like to delete. Then click the Delete button.
- **Creating Your Own Disclosure Statement:** In the large input box under the selection for 'Add My Own Disclosure' you can add your own Disclosure statement. If you would like to use this in all Reports check on the checkbox for 'Add My Own Disclosure To All Reports'. If this is checked on then this Disclosure will be displayed for every report template.

**Online Fact Finder (For Advisor Version Only)**- The online fact finder can be accessed at <https://www.mywealthtrace.com/questionnaire.aspx>. You and/or your clients and prospects would need your unique Advisor ID to access this. Please email or call us to retrieve your ID.

Once a prospect or client enters your Advisor ID here they can then enter their basic personal and investment information into an online form. This has several advantages over a hard-copy fact finder:

- a) It is easier for most people to enter information online than to write it down on paper.
  - b) You won't have to deal with a variety of handwriting, faxing, and/or scanning of documents.
  - c) You will be emailed a pdf file of their fact finder once they are finished.
- **Auto-Creation Of Plans From Fact Finder:** If you purchase this feature you can have a plan created automatically from a client or prospect's inputs into the online fact finder. This is useful for a few reasons:
    - a) The plan is started for you, reducing much of the labor portion of creating a financial plan.

b) Great for prospecting: Give out the online fact finder web address to as many prospects as you like. You will be emailed each time somebody starts a plan and you can then log in and open their plan to see immediate results.

c) Start a conversation with clients or prospects as soon as they submit their information. Their plan will be started for you so you can immediately discuss the results with them.

### **Creating & Saving Multiple Plans In The Individual Version**

Those using the Individual version may choose to pay for the feature that allows them to create and save multiple plans. There is a limit of 10 plans with this feature. Using multiple plans is useful in that it allows users to create a variety of plans with different assumptions, such as when a business will be sold or how much is spent on various goals. The user can then run those different plans at any time to see the retirement outputs from each different plan. The functions associated with this feature are:

**Open Plan-** Opens the plan

**Duplicate-** Copies/duplicates the plan so it can be used as the base plan for another plan you want to create.

**Delete-** Deletes the plan

**Name This Plan-** Allows you to give each plan a descriptive name such as My Base Plan or Plan Where House Is Sold. This helps keep the plans organized.

**Data- Time Series Outputs** – The program outputs many data items for each year of the plan. These include the inputs that go into generating the plan as well as many useful outputs. Below we list the definitions for the items in this section:

**Inflation:** See [Inflation](#).

**COLA:** See [COLA Inflation](#).

**Living Expenses In Retirement:** See [Annual Living Expenses In Retirement](#).

**Additional Expenses:** Here the program will list each goal or additional expense the user has entered. The program will show how much is paid for each goal/additional expense each year.

**Total Expenses:** The sum of the Recurring Expenses In Retirement and all Goals/Additional Expenses.

**Beginning Investment Balance:** The sum of all investment balances at the beginning of each year. If there is a spouse/partner in the plan, his or her investments are included with the primary's here.

**Total Investment Balance:** The sum of all investment balances at the end of each year. If there is a spouse/partner in the plan, his or her investments are included with the primary's here.

**Salary Income After Contributions, Taxes, And Expenses:** The combined income for salaries for both partners after deductions for any contributions made to investments, taxes, or expenses. It is important to note that before retirement we assume that any left-over salary income (income not designated for contributions to savings) is used for general living expenses. However, if one partner retires before the other and retirement expenses have begun, the program will use any left-over salary income from the person still working to pay for annual recurring retirement expenses.

**Cash Additions:** Here the program will list each Additional Cash Inflow the user has entered. The program will show how much each inflow is net of taxes every year.

**Expenses Paid From Income/Cash Additions:** The amount of expenses that was funded by any salary income or items from the Additional Cash Inflows section.

**Percent Of Social Security That Is Taxable:** Depending on total income each year, social security is taxed at various levels. At a low enough income level, social security is not taxed at all. We use up to date federal rules for determining this and we show this value each year.

**Social Security Before Taxes And Expenses:** The amount of social security for each person in the plan before any taxes or expenses are deducted.

**Expenses Paid From Social Security Payments:** The amount of expenses that was funded by social security income.

**Social Security After Expenses And Taxes:** The amount of social security left over each year after taxes and expenses have been deducted.

**Pension Before Taxes And Expenses:** The amount of the Pension for each person in the plan before any taxes or expenses are deducted.

**Expenses Paid From Pension Payments:** The amount of expenses that was funded by Pension income.

**Pension After Expenses And Taxes:** The amount of the Pension left over each year after taxes and expenses have been deducted.

**Contributions To Taxable And Tax-Advantaged Investments:** The combined total dollar amount contributed to Taxable And Tax-Advantaged Investments each year.

**Taxes On Taxable And Tax-Advantaged Investment Growth:** The total amount of taxes paid on investment growth in this category. The program will tax investment growth annually based on the percent of the growth attributable to dividends, interest, and capital gains. These are set by the user for every investment. Note that the program does charge capital gains taxes each year for any growth that is attributable to capital gains. We use the current long-term capital gains tax rate for this.

**Growth In Taxable And Tax-Advantaged Investments After Taxes:** The amount of investment growth for all investments in this category after taxes.

**Expenses Paid From Taxable And Tax-Advantaged Growth:** The amount of expenses that was funded by growth in these investments.

**Taxes On Taxable And Tax-Advantaged Balance Withdrawals:** Once funds are withdrawn from principal on these investments the program will deduct any capital gains taxes due. This field shows what those taxes are each year.

**Expenses Paid From Taxable And Tax-Advantaged Bal:** The amount of expenses that was funded by withdrawing money from the balances of these investments. Note that this number does not include taxes paid on withdrawals.

**Expenses Paid From Taxable/Tax-Advantaged:** The amount of expenses that was funded by withdrawing money from the balances of these investments.

**Taxable And Tax-Advantaged Bal After Expenses & Taxes:** The combined amount of these investments at the end of the year.

**Contributions To Non-Qualified Tax-Deferred Investments:** The combined total dollar amount contributed to Non-Qualified Tax-Deferred Investments each year.

**Growth In Non-Qualified Tax-Deferred Investments After Taxes:** The amount of investment growth for all investments in this category after taxes. Note that the income from non-qualified tax-deferred investments are not taxed until funds are withdrawn.

**Expenses Paid From Non-Qualified Tax-Deferred Growth:** The amount of expenses that was funded by growth in these investments.

**Taxes On Non-Qualified Tax-Deferred Balance Withdrawals:** Once funds are withdrawn from these investments the program will deduct any taxes due. Withdrawals from investments in this section are taxed at ordinary income tax rates. This field shows what those taxes are each year.



**Expenses Paid From Non-Qualified Tax-Deferred Bal:** The amount of expenses that was funded by withdrawing money from the balances of these investments. Note that this number does not include taxes paid on withdrawals.

**Expenses Paid From Non-Qualified Tax-Deferred:** The amount of expenses that was funded by withdrawing money from the balances of these investments.

**Guaranteed Annuity Income Payments Transferred To Taxable Accounts:** If there are any guaranteed annuity income payments from an investment the program will show the amount of these payments that are transferred to taxable accounts. The program will first look to spend these funds on expenses. If there are annuity income payments left over they are transferred to taxable accounts pro-rata. The program transfers these payments because reinvesting them back into the annuity is generally not allowed.

**Non-Qualified Tax-Deferred Bal After Expenses & Taxes:** The combined amount of these investments at the end of the year.

**Contributions To Qualified Tax-Deferred Investments:** The combined total dollar amount contributed to Qualified Tax-Deferred Investments each year.

**Growth In Qualified Tax-Deferred Investment:** The amount of investment growth for all investments in this category. Note that Qualified tax-deferred investments are not taxed at all until funds are withdrawn.

**Company Match For Qualified Investments:** The dollar amount the employer matches in a 401(k) plan.

**Required Minimum Distributions Before Taxes:** See [Required Minimum Distributions](#).

**Required Minimum Distributions After Taxes & Expenses (Transferred to Taxable Accounts):** The program will first use RMDs to fund any expenses that haven't already been paid for. After this the program will take RMDs and transfer them to the first taxable account in the list for Taxable And Tax-Advantaged Investments.

**Expenses Paid From Qualified Tax-Deferred Growth:** The amount of expenses that was funded by growth in these investments.

**Taxes On Qualified Tax-Deferred Balance Withdrawals:** Once funds are withdrawn from these investments the program will deduct any taxes due. Withdrawals from investments in this section are taxed at ordinary income tax rates. This field shows what those taxes are each year.

**Expenses Paid From Qualified Tax-Deferred Bal:** The amount of expenses that was funded by withdrawing money from the balances of these investments. Note that this number does not include taxes paid on withdrawals.

**Expenses Paid From Taxable/Tax-Advantaged:** The amount of expenses that was funded by withdrawing money from the balances of these investments.

**Qualified Tax-Deferred Bal After Expenses & Taxes:** The combined amount of these investments at the end of the year.

**Shortfall:** The total funding shortfall each year. Once a shortfall appears it means all income and investment principal have been exhausted in that year.

**Total Taxes Paid:** The combined total federal and state taxes paid each year.

**Average Federal Income Tax Rate:** The average federal income tax rate used each year.

**Average State Income Tax Rate:** The average state income tax rate used each year.

**Capital Gains Tax Rate:** The capital gains tax rate used each year. Note that the program assumes all capital gains are taxed at long-term capital gains tax rates for federal tax purposes. The program will also combine the state income tax rate with the federal capital gains tax rate to calculate this number.

**Dividend Tax Rate (Federal + State):** The dividend tax rate used each year. Note that the program assumes all dividends are taxed at the qualified dividend tax rate for federal tax purposes. The program will also combine the state income tax rate with the federal dividend tax rate to calculate this number.

**Total After Tax Income (Social Security + Pensions + Cash Additions + Investment Growth):** This field combines all after tax income each year. This data can help users understand how much income they will generate each year to pay for expenses. It is very useful when generating an income plan.

**Income Minus Expenses:** Total After Tax Income less any expenses for that year. This data can help users understand if they can pay for expenses each year from income generated each year.

**Cumulative Income Minus Expenses Surplus Or Shortfall:** The cumulative amount of Income Minus Expenses. This is also useful in generating an income plan.

### **Importing Investment Information From Third Parties (Advisor Version Only)**

The software connects to various third party applications and allows users to import investment information as well as update investment information as often as they wish. Each third party application has its own method of importing:

**Morningstar Products:** This partner requires you to export an xml file from Morningstar Office, Principia, or Workstation, which is then used for importing investment

information into WealthTrace. The steps to importing investments from Morningstar are as follows:

- 1) Export the xml file that contains investment information from Morningstar. Save this file.
- 2) In WealthTrace click on the Import Investments button in the Personal Information section. Choose Morningstar as the partner to import from.
- 3) If this is a brand new client and you are not updating information, choose 'A brand new import'. Note that choosing this option will overwrite any investment data you have for this plan.
- 4) If this is an existing client and you are updating investment information, choose 'An update of existing information'. The program will update investment balances only, leaving in place other inputs such as asset classes, annual contributions, and cost basis information.
- 5) Select the xml file for import and click the Begin Import button.
- 6) The program will list all investments contained in the file and will ask you which spouse/partner each one belongs to (if there is a spouse or partner) and what type of investment each one is.
- 7) Click Save and the program will insert all of the investments in the proper location.
- 8) You will need to look at each investment and enter asset class information as Morningstar does not provide that information to us.

**Redtail:** This partner allows you to easily import investment information by connecting directly to their CRM database from our program via a secure, encrypted connection. The steps are as follows:

- 1) Click the Import Investments button in the Personal Information section.
- 2) If this is your first time importing from Redtail into WealthTrace you will be asked for your Redtail username and password. We do not store this information. We only store a Redtail userkey that will be used in the future to connect to the Redtail CRM database.
- 3) Choose Redtail as the partner to import from.
- 4) If this is a brand new client and you are not updating information, choose 'A brand new import'. Note that choosing this option will overwrite any investment data you have for this plan.
- 5) If this is an existing client and you are updating investment information, choose 'An update of existing information'. The program will update investment balances only, leaving in place other inputs such as asset classes, annual contributions, and cost basis information.
- 6) Type in the last name of the client you want to retrieve information on and hit Search. The program will display all clients with that last name. Click on the client you want to use.

- 7) The program will list all accounts that are found for this client and will ask you which spouse/partner each one belongs to (if there is a spouse or partner). The program also gives you the option to choose if each account should be imported. Note that the program does not need to ask you what type of investment each account falls into because Redtail gives use this information.
- 8) Click Save and the program will insert all of the investments from each account imported in the proper location and will assign the asset class given to us by Redtail.

**Schwab Portfolio Center:** This partner requires you to export an xml file from Portfolio Center into the Morningstar format. This file is then used for importing investment information into WealthTrace. The steps to importing investments from Portfolio Center are as follows:

- 1) Export the xml file that contains investment information from Portfolio Center into the Morningstar format. Save this file.
- 2) In WealthTrace click on the Import Investments button in the Personal Information section. Choose Schwab Portfolio Center as the partner to import from.
- 3) If this is a brand new client and you are not updating information, choose 'A brand new import'. Note that choosing this option will overwrite any investment data you have for this plan.
- 4) If this is an existing client and you are updating investment information, choose 'An update of existing information'. The program will update investment balances only, leaving in place other inputs such as asset classes, annual contributions, and cost basis information.
- 5) Select the xml file for import and click the Begin Import button.
- 6) The program will list all investments contained in the file and will ask you which spouse/partner each one belongs to (if there is a spouse or partner) and what type of investment each one is.
- 7) Click Save and the program will insert all of the investments in the proper location.
- 8) You will need to look at each investment and enter asset class information as Schwab Portfolio Center does not provide that information to us.

**Solving Tool:** The WealthTrace Solving Tool allows you to pick a variable you would like to change in order to obtain a desired outcome. For example, let's say you want to have \$1 million left at the end of the retirement plan. Currently your plan projects you will only have \$500,000 left. You want to see how much you need to cut expenses in retirement by in order to increase the amount left at the end of the plan. You can use the Solving Tool to quickly find this answer.

The Solving Tool will iterate through changes in living expenses in retirement until it finds the change needed in order to attain your goal.

### **Inputs:**

**Solve For:** Choose the variable you would like to change in order to achieve a goal.

Example: You would like to see how much living expenses must be cut in order to have an 80% probability of funding all goals. Choose Percent Change In Living Expenses In Retirement for the Solve For field and Probability Of Funding All Goals for the Goal field. For Goal Value you would enter 80%.

**Goal:** Choose the Goal you would like to attain. Example: You have a goal of having \$1 million at the end of the plan and you would like to see how much living expenses in retirement must be cut in order to achieve this. Choose Percent Change In Living Expenses In Retirement for the Solve For field and Investment Value At End Of Plan for the Goal field. For Goal Value you would enter \$1,000,000. Note that Investment Value At End Of Plan is in Today's Dollars.

**Goal Value:** Enter the value you are trying to attain for the Goal. Example: You would like to see how much living expenses must be cut in order to have an 80% probability of funding all goals. For Goal Value you would enter 80%.

### **Outputs:**

**Goal Solution:** This output tells you what change must be made in order to attain the goal. Example: You entered a goal of having \$1 million at the end of the plan and you chose Percent Change In Living Expenses In Retirement in the Solve For field. The Solving Tool outputs -25% for the Goal Solution. This means living expenses in retirement must be cut by 25% in order to have \$1 million left at the end of the plan.

**Original Value:** This is the original value of the variable being solved for. Example: You entered a goal of having \$1 million at the end of the plan and you chose Percent Change In Living Expenses In Retirement in the Solve For field. The Solving Tool outputs \$60,000 for the Original Value. This means that the plan currently has \$60,000 entered for Annual Living Expenses In Retirement.

**Value Using Solver:** This is the value the Solving Tool has found which will accomplish the goal. Example: You entered a goal of having \$1 million at the end of the plan and you chose Percent Change In Living Expenses In Retirement in the Solve For field. The Solving Tool outputs \$50,000 for Value Using Solver. This means that in order to have \$1 million at the end of the plan expenses must be changed to \$50,000.

