

Supplemental Workbooks



This technical white paper is designed for Spitfire Project Management System users. It describes the creation of templates in Microsoft Excel “from scratch” to be used with the Budget, Forecast and Analysis (BFA), Schedule of Values (SOV) and Period Distribution (PD) workbooks.

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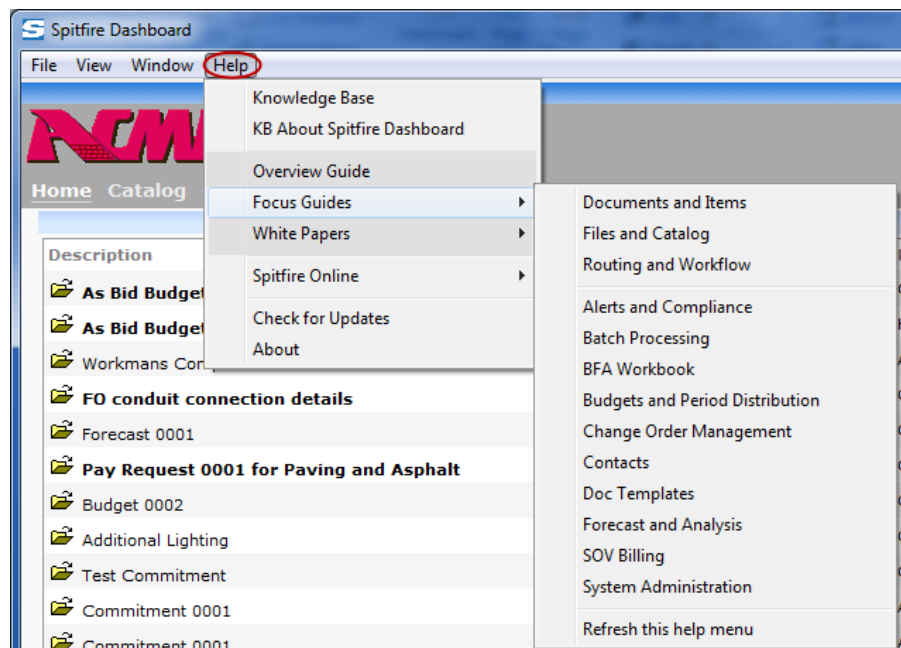
Introduction

This technical white paper describes the creation of templates in Microsoft Excel “from scratch.” These templates can generate supplemental workbooks to be used with the Budget, Forecast and Analysis (BFA), Schedule of Values (SOV) and Period Distribution (PD) workbooks. You are encouraged to review this entire white paper prior to beginning a practical exercise.

Important: if you want to create a supplemental workbook for the BFA workbook, we recommend you use the BFA Report Tool to create your budget report templates. The BFA Report Tool helps you to create the templates you need to get the results you desire and is easier than designing a supplemental workbook on your own. If you decide to use the BFA Report Tool, you should read the technical white paper [The BFA Report Tool](#) instead of this white paper.

This technical white paper assumes you have a basic understanding of sfPMS in general and the appropriate workbook (BFA, SOV, and/or PD) in specific. If not, please read the [Overview Guide](#) and the [Focus on the BFA Workbook](#), [Focus on Budgets and Period Distribution](#), and [Focus on Schedule of Values \(SOV\) Billing](#) guides first.

All documentation referred to within this white paper can be found on the Spitfire Help menu.



Note: This technical white paper also assumes you can open and use Microsoft Excel. Anyone without a good understanding of Microsoft Excel should take the time to learn that application before attempting to create a supplemental workbook.

Note: aside from possible updated pictures, the documentation in this paper is the same as the documentation in the V4.2 white paper.

Overview

Spitfire's BFA (Budget, Forecast, Analysis), SOV (Schedule of Values) and PD (Period Distribution) workbooks are protected because they contain many formulas, add-ins and hidden columns. Yet, you may want to extract data from these workbooks and work with the data to provide additional reporting workbooks. You may also want to extract data from outside applications (such as Estimating software) to use in Spitfire workbooks. You can extract data to and from Spitfire workbooks using the full functionality of Microsoft Excel through templates.

In general, supplemental workbooks are a means to extract and then rework, reformat (display) and re-purpose data held in another workbook. Supplemental workbooks are subordinate to, and harvest data from, a specified workbook (be it a BFA, SOV, PD or external workbook) that is usually referred to as the "source" or "parent" workbook. This means that usually a supplemental workbook that is launched while not in the presence of the source workbook is non-functional and presents no data.

Supplemental workbooks are recommended in the following situations:

- The source workbook contains massive amounts of data collected from external sources and the resulting data can't or shouldn't be tampered with.
- The complexity of data collection is beyond the scope of the user.
- The access to the raw data is beyond the scope of the user security (yet the compiled data is within scope).
- The data needs to be repurposed or combined with additional data.
- Data needs to be presented through various means including but not limited to Charts and Graphs, Pivot tables, and narrative comment elements.
- Only a subset of data is required.

Supplemental workbooks are created through Microsoft Excel templates.

Creation of a Template Workbook

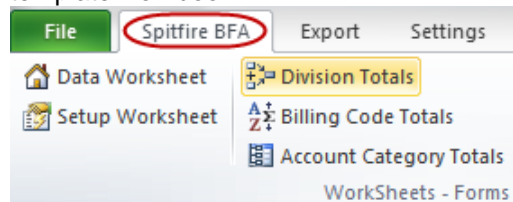
The first step in the creation of your template workbook (which will later be used to create your supplemental workbook) is to copy the source workbook.

Copy the Source Workbook

TIP

See the [Focus on Budgets and Period Distribution](#), [Focus on Forecast and Analysis](#) and [Focus on Schedule of Values \(SOV\) Billing](#) guides for more information about these respective workbooks.

1. Open the BFA, SOV or PD workbook for which you want to create a supplemental workbook. Generally, this BFA, SOV or PD workbook should already have data in it.
2. (optional) If you are starting with a BFA workbook, select **Division Totals** from the Spitfire Menu. This will give you better data (just the Cost Code totals) with which to work in the template workbook.



Click at the confirmation box that appears. The Division Totals sheet will appear.

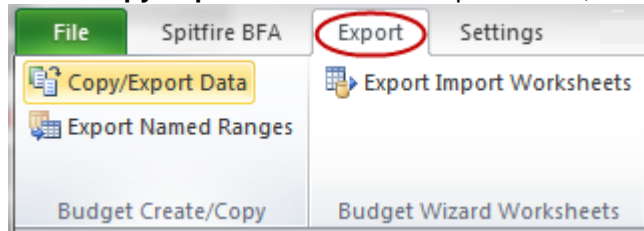
[Note: if you want amounts at the Account Category level, you'll need to use the regular BFA Data sheet but you'll need to be mindful of the Cost Code rows on your template worksheet. The Cost Code amounts might be added to the Account Categories amounts if you use this data in calculations or graphs and you could end up with total amounts that are double what they should be.]

If you are not careful in your template, all these numbers will be used in calculations on your supplemental workbook.

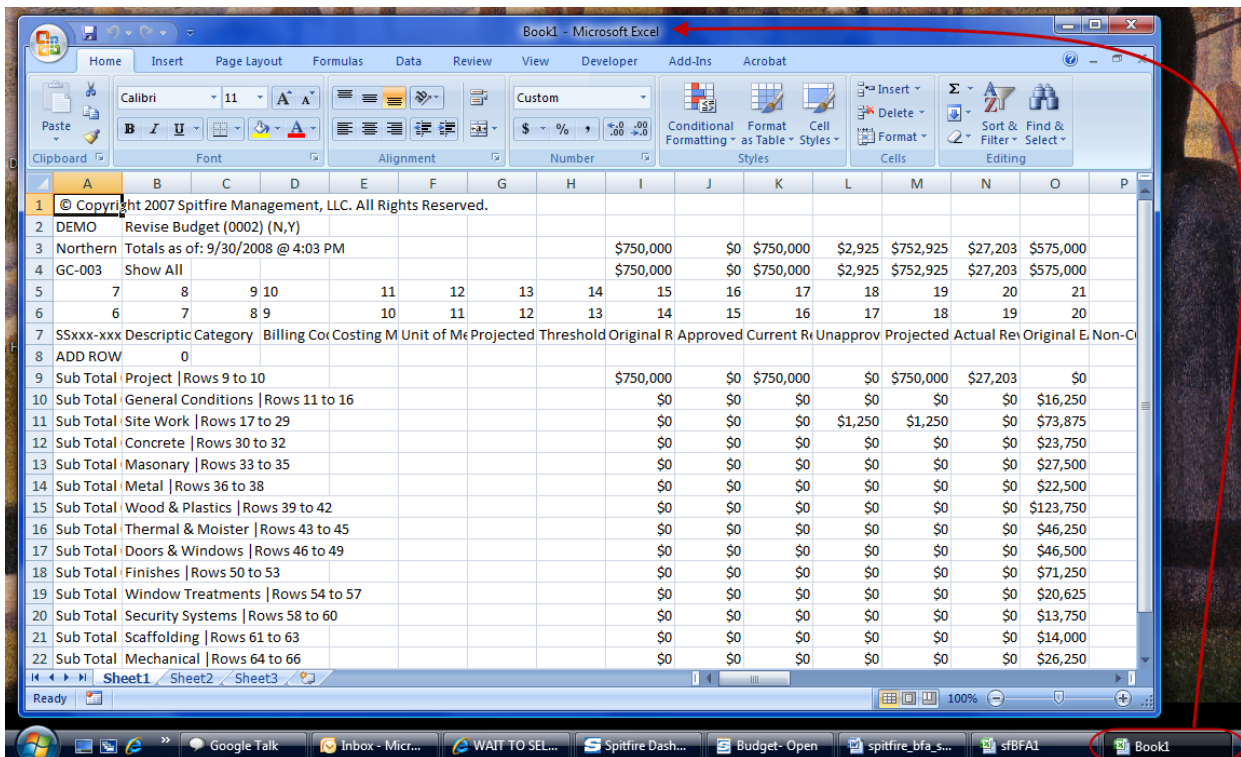
01000	General Conditions	\$0	\$0	\$16,250	\$16,250
01000	_LABOR	\$0	\$0	\$7,500	\$7,500
01000	_MTRL PERM	\$0	\$0	\$0	\$0
01000	_OTHER	\$0	\$0	\$8,750	\$8,750

01000	General Conditions		\$0	\$0	\$16,250
01000	_LABOR	_LABOR	\$0	\$0	\$7,500
01000	_MTRL PERM	_MTRL PERM	\$0	\$0	\$0
01000	_OTHER	_OTHER	\$0	\$0	\$8,750

3. Select **Copy/Export Data** from the Export ribbon, for example:



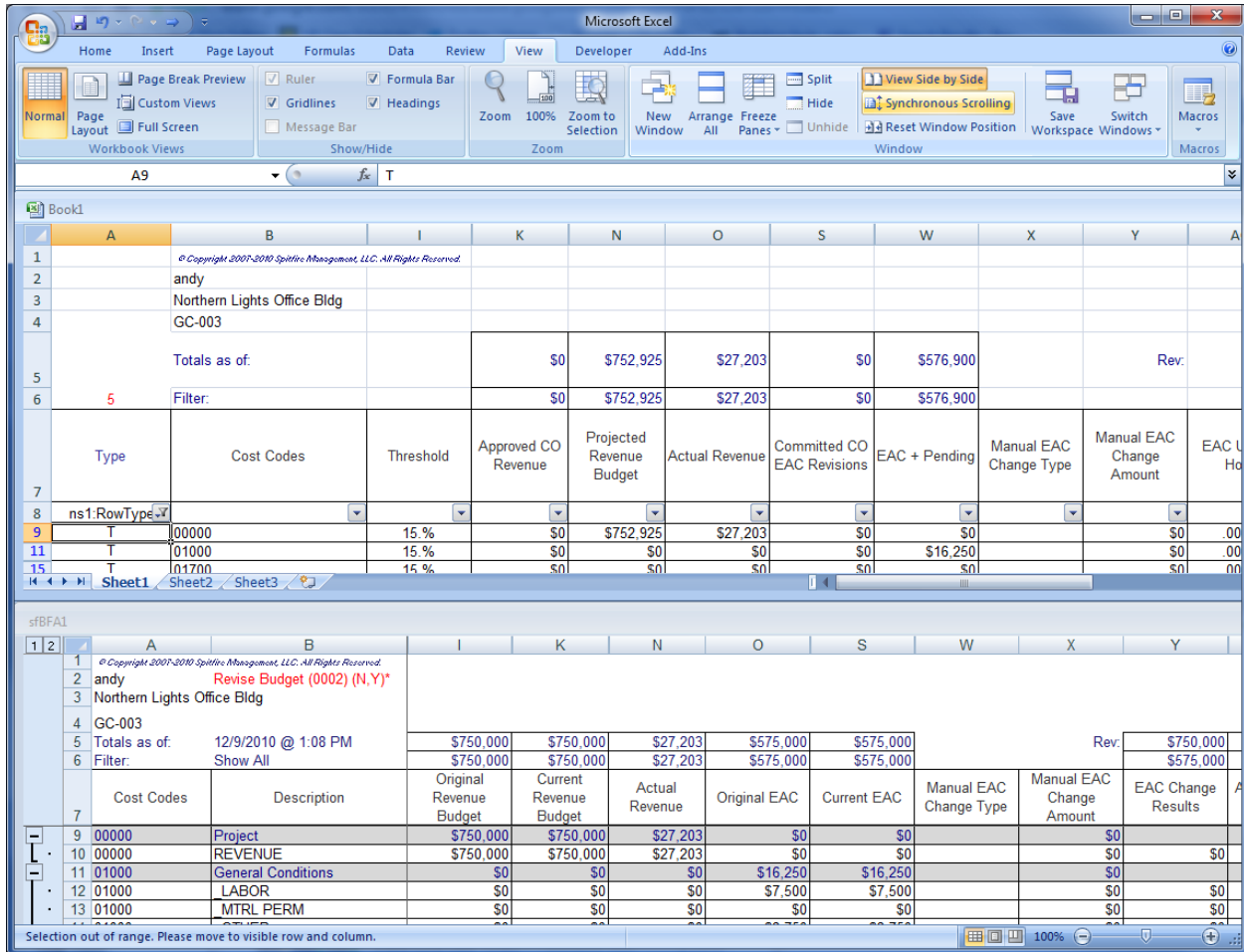
4. Click at the confirmation box that appears. A workbook, named Book1 (or something similar) will be created.
5. If it doesn't open automatically, open Book1. You will find it on the taskbar at the bottom of your computer screen. This is the basis for your template and supplemental workbook (SW):



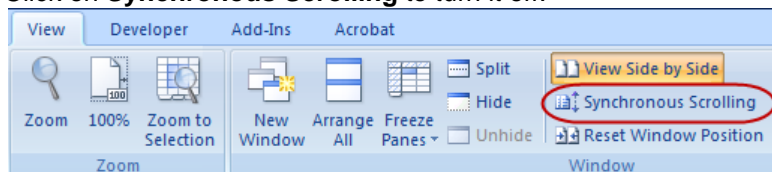
Modify the Template Workbook

Turn on Some Basic Functions

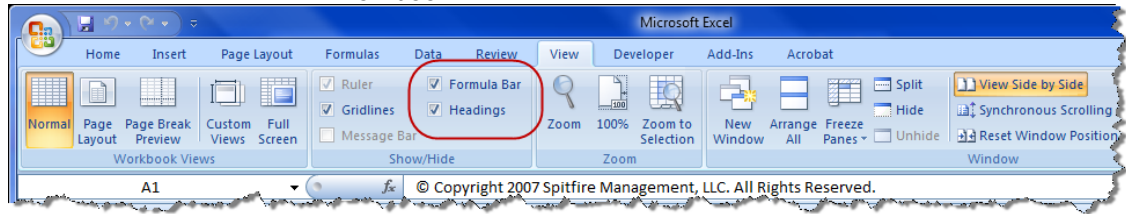
1. Select **View Side by Side** from the View ribbon to get both the source workbook and template workbook visible at the same time, for example:



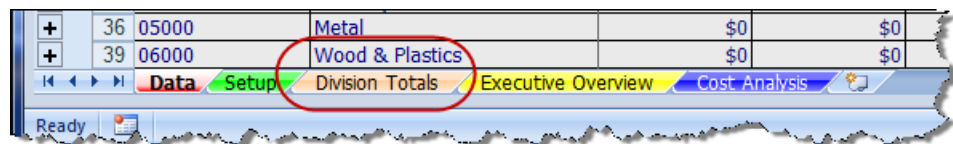
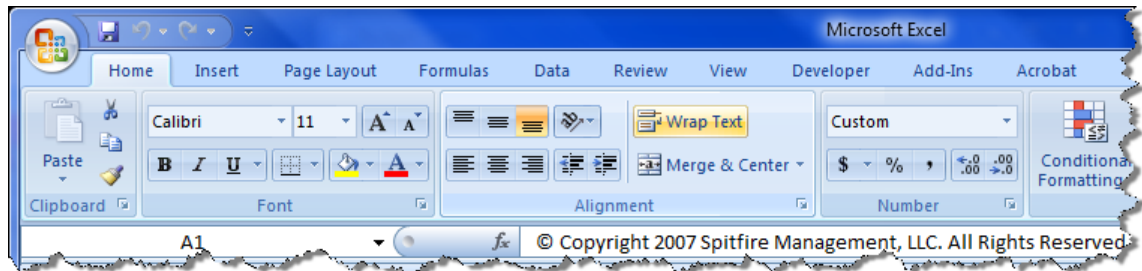
2. Click on **Synchronous Scrolling** to turn it off.



- If necessary, check the **Formula Bar** and **Headings** checkboxes on the View ribbon so that you can see both on the template workbook:

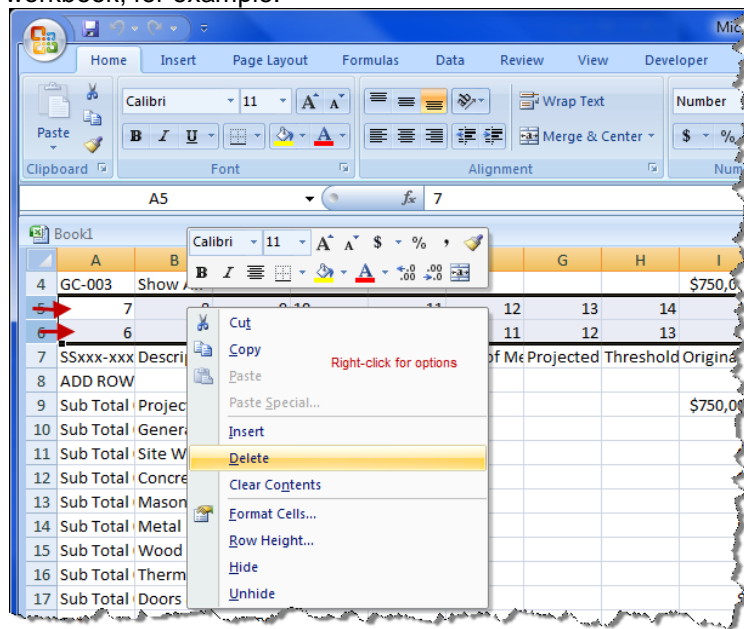


- Select **Wrap Text** from the Home ribbon to be able to read all headers:

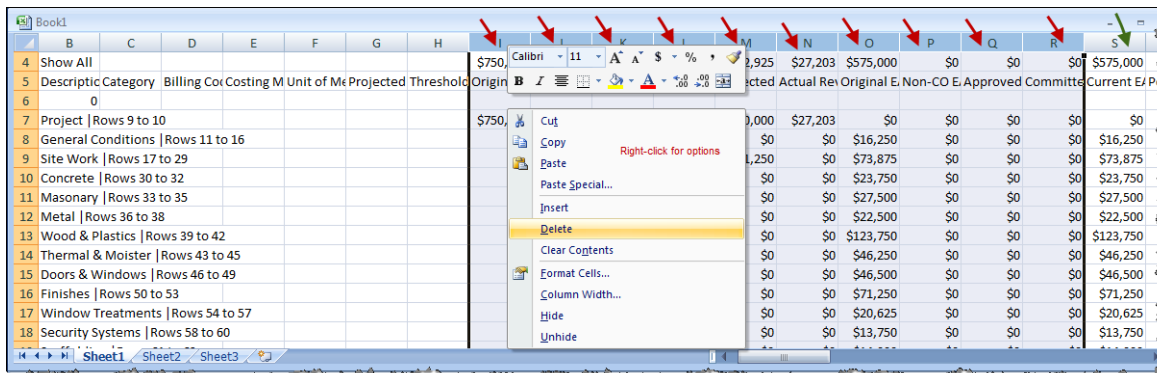


Delete Unwanted Columns/ Rows

- Starting from the top of the template workbook, scroll down and delete any rows that you will not want in your supplemental workbook, for example:



- Starting on the left of the template workbook, scroll to the right and delete any columns that are not needed for your supplemental workbook. For example, if you want to use only a few columns (Current EAC, Actual + Committed Cost, and Working FAC) in your calculations or graphs, you could delete all other columns.



Use Microsoft Excel Options and Functionality

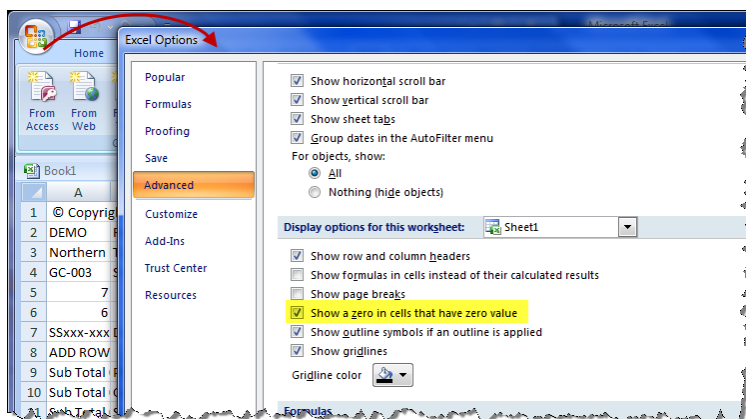
You have the power of Microsoft Excel at your disposal. Insert columns, pictures or tables in your template workbook. Create graphs. Make the data look the way you want it to. Some tips:

- Modify the column widths (especially if any data is showing up as #####).
- Add headers with colors to draw attention to specific information.
- Use borders to visually separate information.
- Adjust the cell format based on content. For example, use “Currency” or “Accounting” for the dollar amounts, “Number” for the units and “Percentage” for the Variance.
- Place graphs and charts on a separate sheet.
- Do your own calculations by adding formulas to inserted cells/columns.
 - Note:** If your formula (for example, D7/C7) causes a division by zero, you’ll get #DIV/0 as a result. A quick fix for “#DIV/0” is to use a nested IF statement, for example,

=IF(ISERROR(D7/C7), "", D7/C7)

(The IF statement has three parts, “evaluate”, “True”, “False”. The commas separate the parts. In this statement the “evaluate” is ISERROR(D7/C7), which if you try to divide by zero is an error. The “True” part is “”, which tells Microsoft Excel to fill the cell with an empty string. The “False” part is D7/C7, which tells Excel to fill the cell with the results of the equation, a number.)

7. When formulas exist in the template workbook and the corresponding rows do not exist in the source workbook, zeros will appear in the supplemental workbook. This looks messy and could be confusing. There are some things you can do.
- A quick fix is to go to Excel Options | Advanced | Display options for this worksheet from the Microsoft button and uncheck the **Show a zero in cells that have zero value** checkbox:



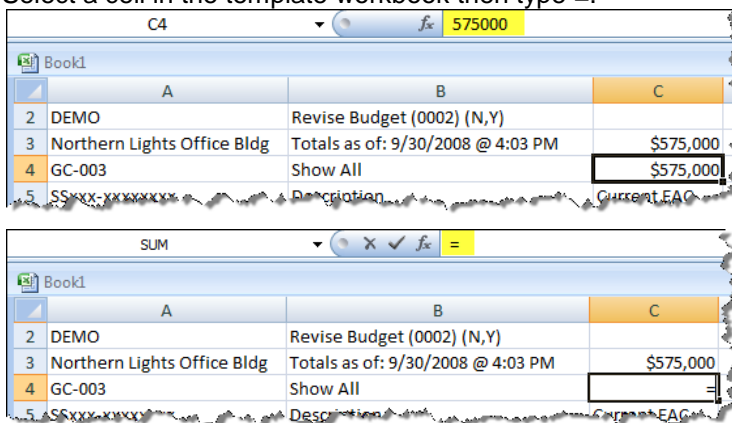
When this option is unchecked, Microsoft Excel will remove all zeros from the supplemental workbook, including zeros that exist in the source workbook.

- If you want to keep zeros where applicable you could use an IF statement in each of the cells that reference source data. For example, the formula `=[sfBFA1]DataG9` could be changed to read `=IF([sfBFA1]DataG9<>"",[sfBFA1]DataG9,"")`. With the IF statement, Microsoft Excel will evaluate the content in the source cell and, if it has a value, will use it, otherwise it will fill the supplemental workbook cell with an empty string. This is important if you plan to use AutoFilters sorting on non-blanks and some of the other advanced Excel functions. A zero is not non-blank whereas an empty string is.

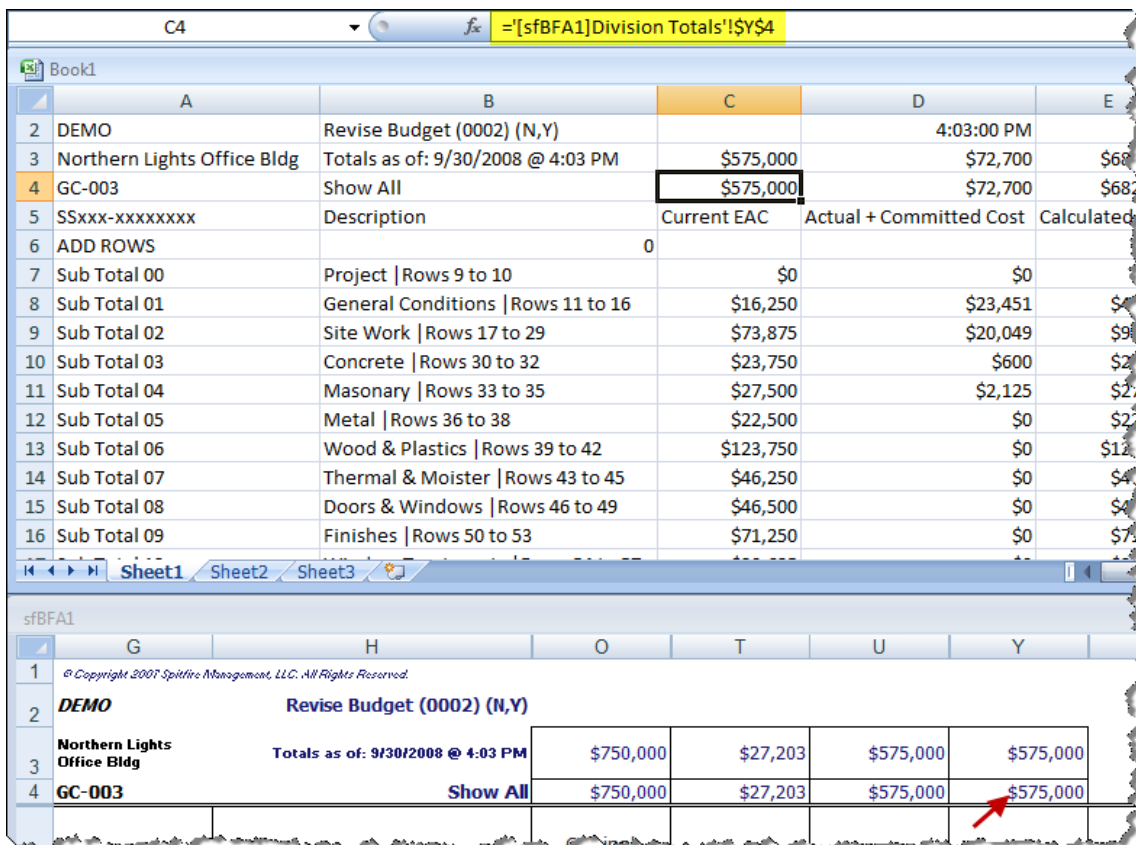
Map Data from the Source

To easily identify any generated printed documents, map the supplemental workbook data to appear as it does in the source workbook (BFA in our example). Both header and data cells need to be mapped.

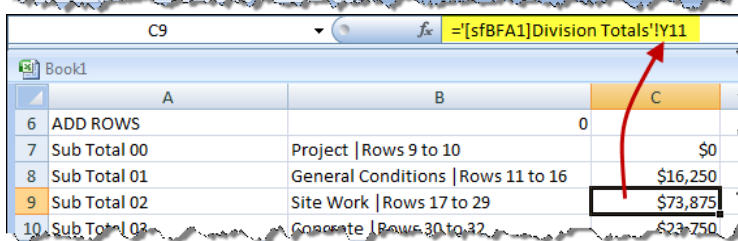
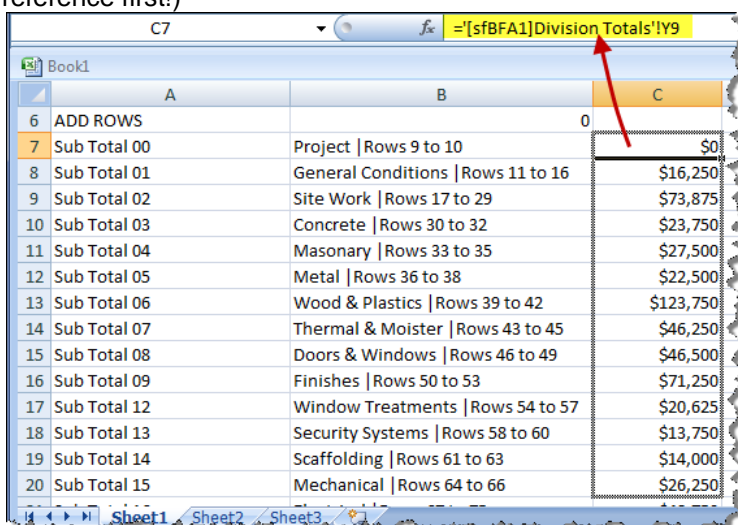
1. Select a cell in the template workbook then type =.



2. Using the mouse, select the cell you want mapped in the source workbook and press **Enter**. You may need to click twice when changing workbooks. The first click changes focus to the workbook and the second click changes focus to the cell. The cell formula in the template workbook should reflect the mapped cell in the source workbook, for example, **= [sfBFA1]Division Totals!\$Y\$4**, and the cell will display whatever is displayed in the source workbook in that cell.

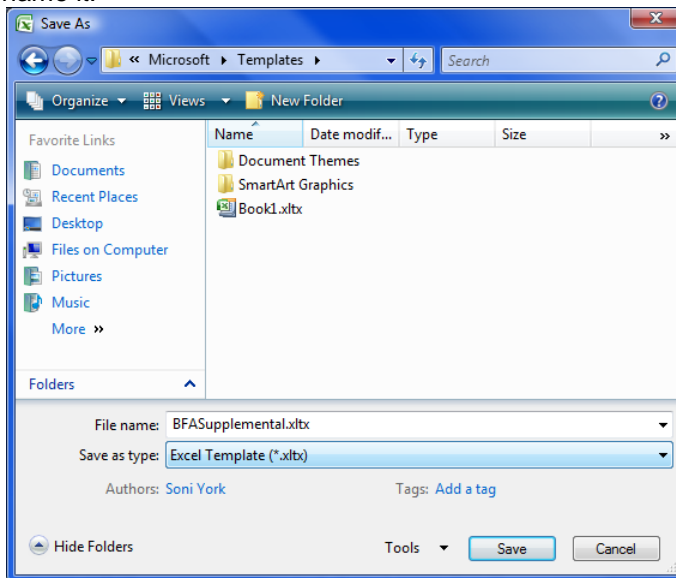


3. Delete the \$s in the formula bar to change the absolute reference to a relative reference. For example, = [sfBFA1]Division Totals!\$Y\$4 would become = [sfBFA1]Division Totals!Y4
4. Repeat this process to map header and data cells. After you map the first row of data cells, you can drag the cursor from the first cell down for as many rows as you will ever need and release. This will copy the mapping with the correct cell reference. (Make sure you have made the formula a relative reference first!)



Protect and Save the Template

1. (*optional*) Password-protect the template workbook. Remember to remove the protection on any cells designated for user input.
2. Save your template workbook as a Microsoft Excel template file (.xltx or .xltm). Decide where you want to save it, and what to name it.



3. Once named, you can save the template workbook as many times as needed while you work on it.

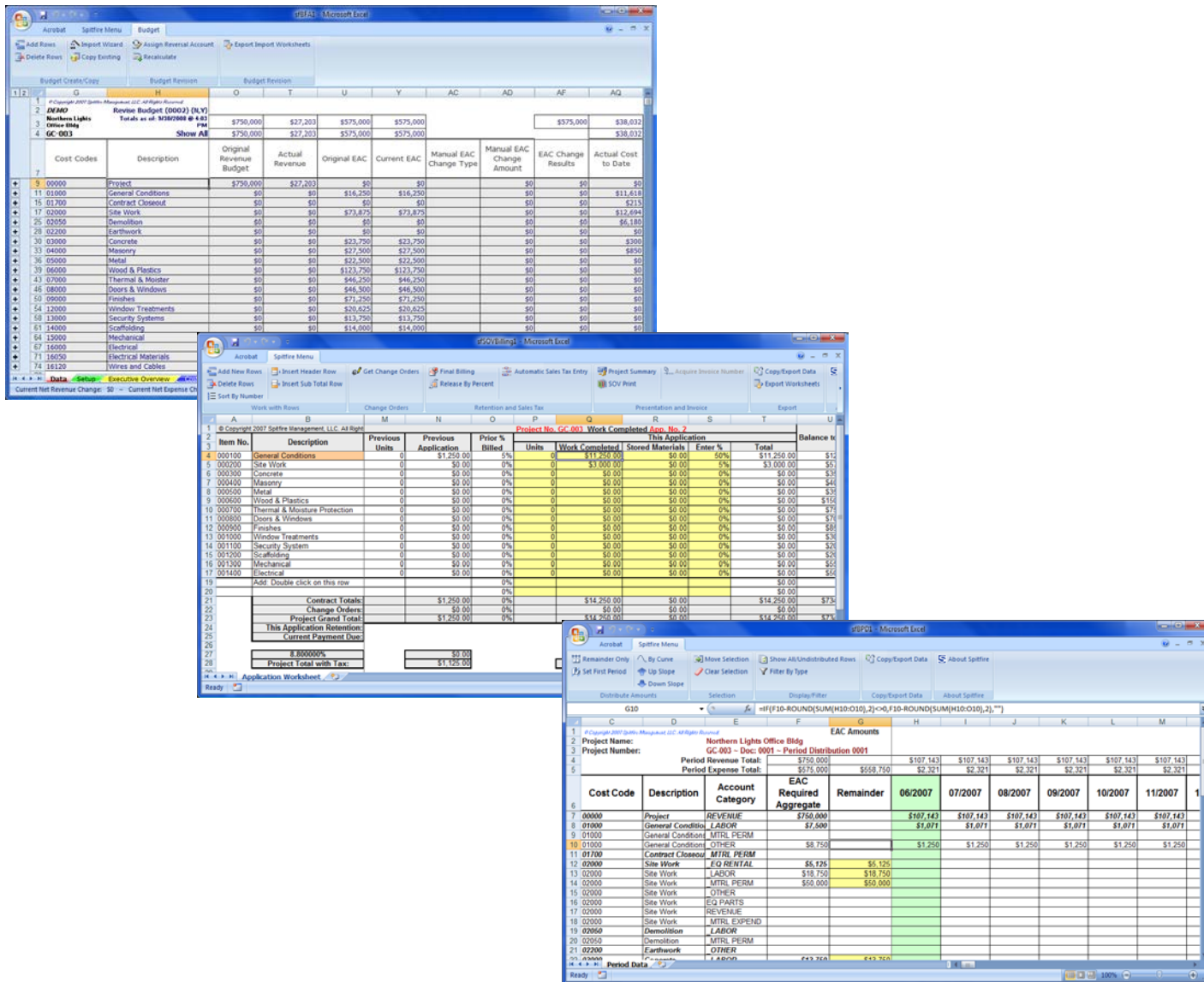
Close the Workbooks

1. After you are finished designing and saving the template workbook, close it.
2. Close the source workbook also. The supplemental workbook template is now ready to be used.

Use the Template to Create a Workbook

Open the Spitfire Workbook

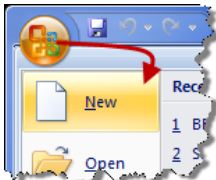
Because the supplemental workbook requires data from a source, you need to open the source workbook first, be it a BFA, SOV or PD workbook.



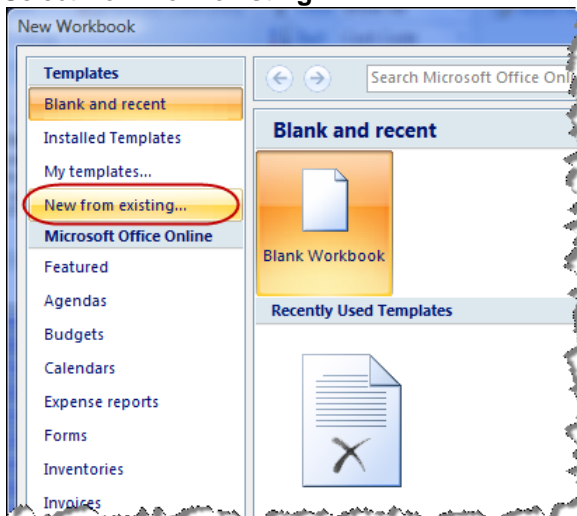
Note: Template workbooks are created for only one type of source workbook; you cannot use a BFA template from an SOV, for example. Similarly, if you created a template from a Division Total sheet in BFA, you must open that sheet again before opening the template workbook.

Open the Template Workbook

1. Once in the source workbook, select **New** from the Microsoft Button:



2. Select **New from existing...**



Note: once you've use the template once, it will likely appear in the **Recently Used Templates** area. Also, if you saved the template in its default location, you can find it by selecting the **My templates....** choice instead.

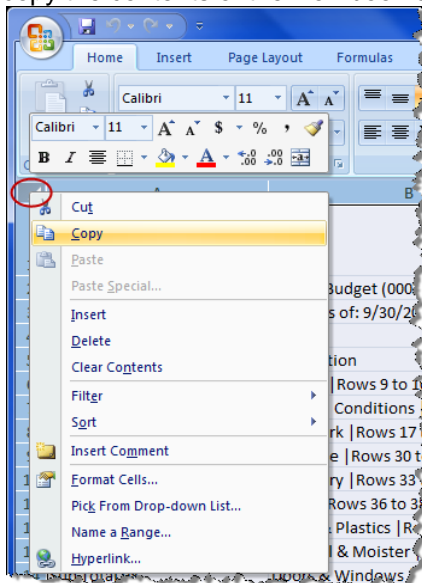
3. Find your template and click . Your supplemental workbook, with data from the source workbook, will open.

Save the Resulting Supplemental Workbook

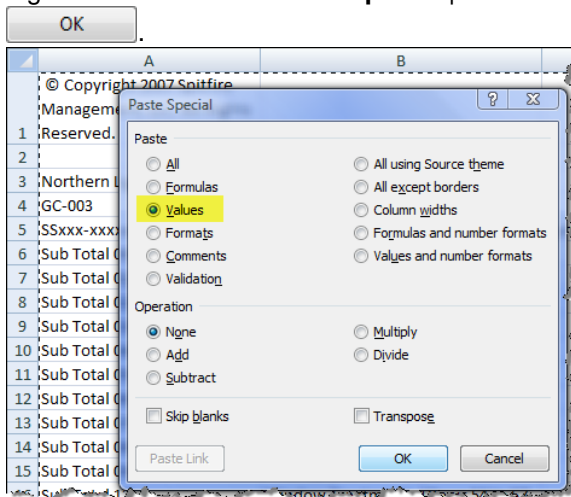
You need not save the resulting supplemental workbook (created from the source data through the template) but you might want to. Once saved, this workbook can be opened outside of Spitfire.

Before saving, however, one additional step is required. Since the workbook is supplemental to the source workbook, it acquires the data through the use of relative references between the two workbooks. To effectively re-open the resulting workbook outside of Spitfire, the contents of each cell must be converted from referential formulas to actual values. Doing so "breaks" the link and dependency on the source workbook.

1. In the supplemental workbook (and on the worksheet containing all the references to the source data), select the corner box at the intersection of the row and column headers. This will highlight the entire worksheet.
2. With the entire sheet highlighted, right-click and select **Copy** to copy the contents of the workbook onto the clipboard.



3. Select cell A1 on the same worksheet.
4. Right-click then select **Paste Special | Values** and click

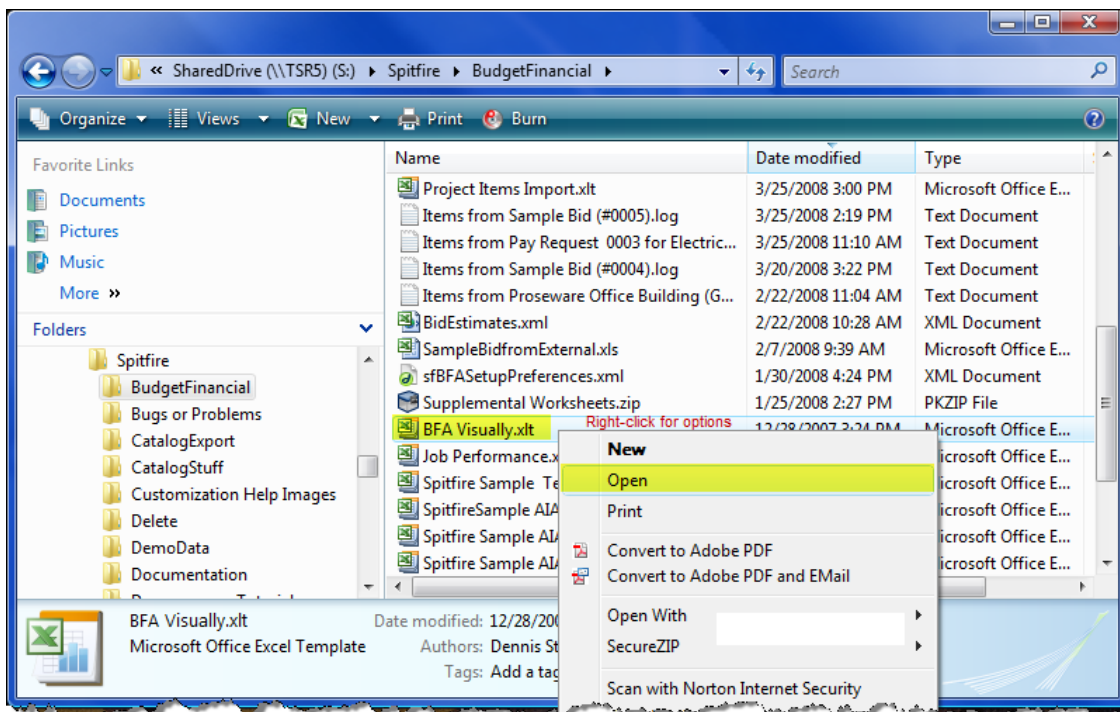


Look at the formula bar—what was a formula is now converted to a value. The workbook is now ready to be saved.

5. Save the resulting workbook as an .XLS or .XLSX file and then close it.

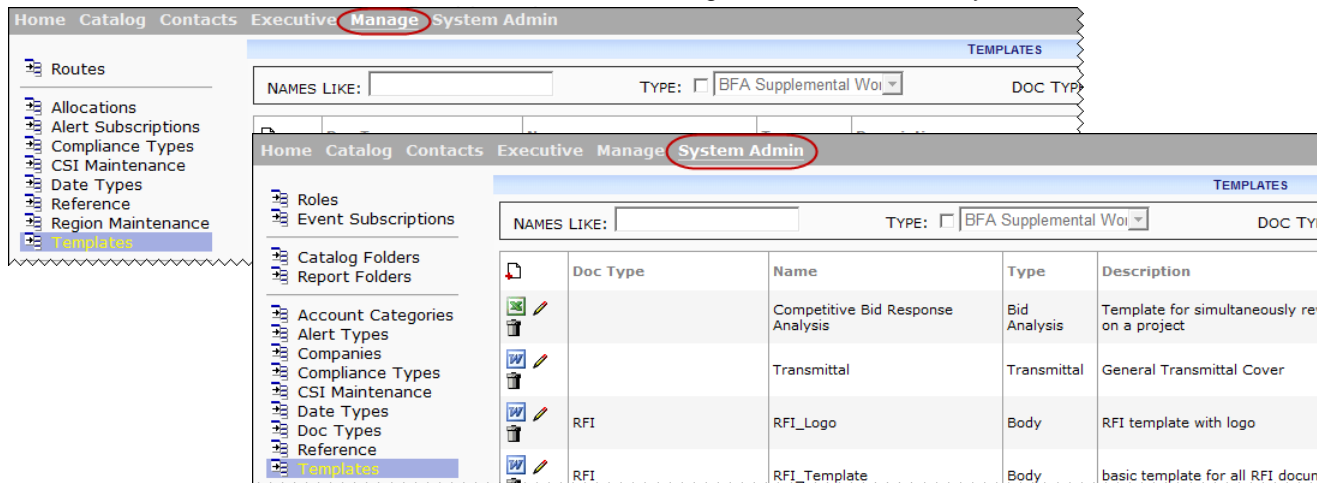
Modify the Supplemental Workbook

If you want to make changes to your template workbook (the .xltx or .xlt file) you must open it from the Open option and not by double-clicking on its filename. For example,



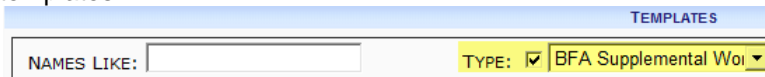
The Template Tool

You can also upload your template file through Spitfire's Template tool so that users have an easier time using it. You can access the Template tool either from the Manage Dashboard or the System Admin



Upload Your Template

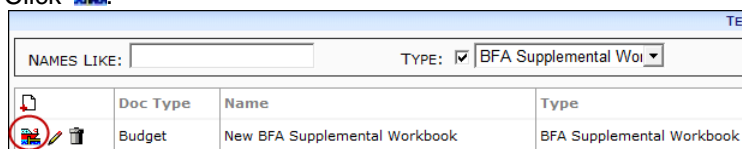
1. Go to the Templates tool in sfPMS as shown above.
2. Check the **Type** box and select either **BFA Supplemental Workbook** or **Period Distribution Supplemental Workbook**. If there are any supplemental workbooks already in Spitfire, they will be listed. You can have multiple supplemental workbook templates.



3. Click to add a row.

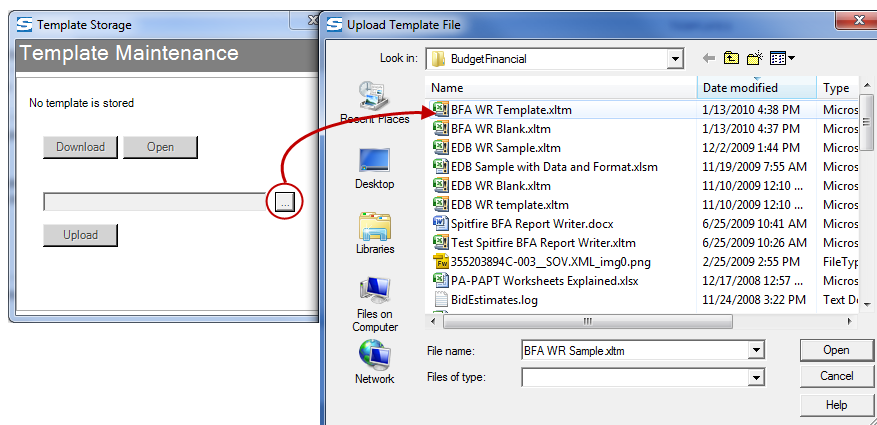
Doc Type	Name	Type	Description	Company	Doc Ref	Customer	Active	Updated
Budget	New BFA Supplemental V	BFA Supplemental Workbook	Extends BFA				<input checked="" type="checkbox"/>	

4. Change the **Doc Type** to the appropriate Doc type for your template.
 - o Note: you can also select a subtype, if desired.
5. Enter a **Name** for the template to reflect the name of your file.
6. Leave the Type as what you selected in step 2.
7. Enter a **Description** for the template file.
8. (optional) Look up a **Company** and/or **Doc Ref** for this template, if appropriate.
9. Click to accept your row.
10. Click to save.
11. Click .

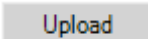


The Template Maintenance dialog box will appear.

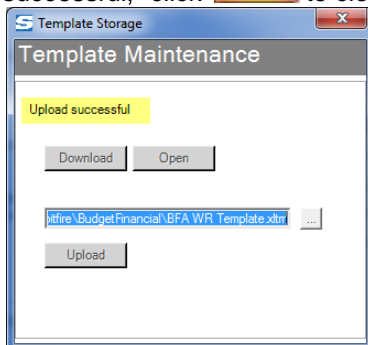
12. Click to browse for your supplemental workbook template file (it should have an .xltx or .xlsm extension).




13. Click .

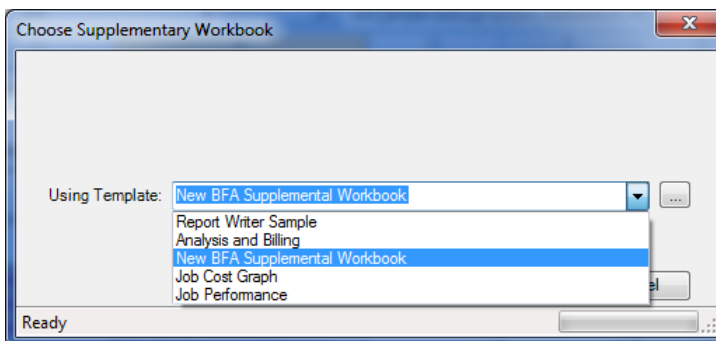
14. Back on the Template Maintenance dialog box, click .

15. When the Template Maintenance dialog box says “Upload successful,” click  to close it.



16. Back on the Templates tool, click  to save it again.

The next time you or someone else chooses the Supplemental Workbook option from a workbook, this newly uploaded template workbook will appear in the Using Template drop-down:



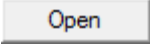
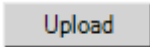




Note: if you have more than one template, all templates will appear in the drop-down. You would have to choose which one you want each time.

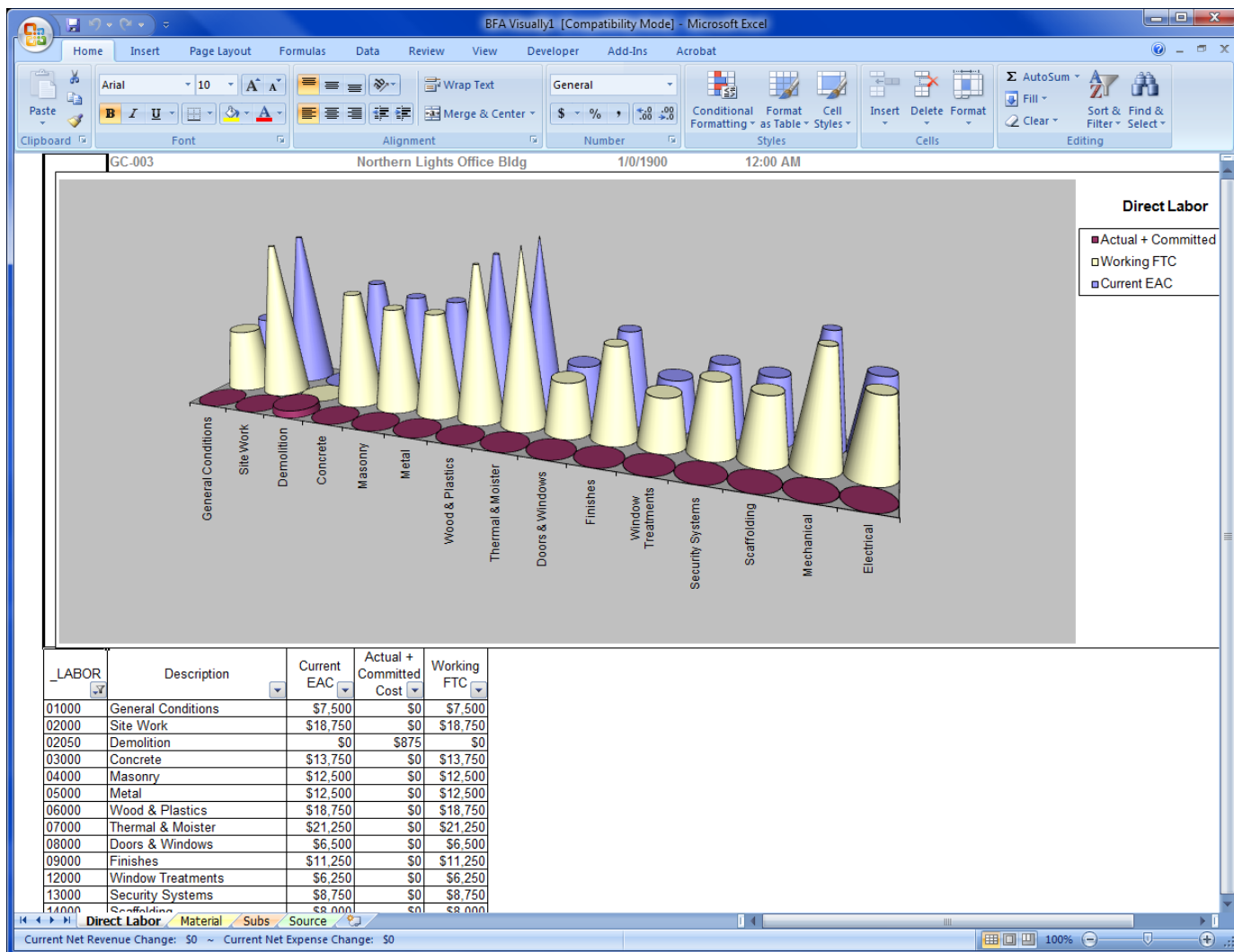
Re-upload Your Template

You may need to replace the supplemental template workbook with another.

- If, after uploading your template, you realize you want to change it, make your changes to your .xltx or .xltxm file on your computer. After you save the template file, you will need to replace your old version in sFPMS with your new version.
- If you want a totally different template workbook to be used instead of the current one, create your new .xltx or .xltxm file on your computer. After you save the template file, you will need to replace your current template with your new template.

1. Go back to the Templates tool on either the Manage or System Admin Dashboard.
2. Click the **Type** checkbox and select the correct template type. Your existing template(s) will appear.
3. Click  to open the Template Maintenance dialog box.
4. Click  to browse for your template file then click .
5. Back on the Template Maintenance dialog box, click .
6. When the Template Maintenance dialog box says "Upload successful," click  to close it.
7. Back on the Templates tool, click  to save it again.

Examples of Supplemental Workbooks



Variance Analysis Sept 17, 20071 [Compatibility Mode] - Microsoft Excel

5	Cost Codes	Description	Current EAC	Last Posted FTC	Variance Amount	Variance %	Comments	Working Forecast Revenue	Last Posted FTC
6	00000	Project	\$0	\$0	0			\$750,000	\$0
7	00000	REVENUE	\$0	\$0	0			\$750,000	\$0
8	01000	General Conditions	\$16,250	\$16,250	0	0.00%		\$0	\$16,250
9	01000	LABOR	\$7,500	\$7,500	0	0.00%		\$0	\$7,500
10	01000	MTRL PERM	\$0	\$0	0			\$0	\$0
11	01000	OTHER	\$8,750	\$8,750	0	0.00%		\$0	\$8,750
12	01700	Contract Closeout	\$0	\$0	0			\$0	\$0
13	01700	MTRL PERM	\$0	\$0	0			\$0	\$0
14	02000	Site Work	\$73,875	\$73,875	0	0.00%		\$0	\$73,875
15	02000	EQ RENTAL	\$5,125	\$5,125	0	0.00%		\$0	\$5,125
16	02000	LABOR	\$18,750	\$18,750	0	0.00%		\$0	\$18,750
17	02000	MTRL PERM	\$50,000	\$50,000	0	0.00%		\$0	\$50,000
18	02000	OTHER	\$0	\$0	0			\$0	\$0
19	02000	EQ PARTS	\$0	\$0	0			\$0	\$0
20	02000	REVENUE	\$0	\$0	0			\$0	\$0
21	02000	MTRL EXPEND	\$0	\$0	0			\$0	\$0
22	02050	Demolition	\$0	\$0	0			\$0	\$0
23	02050	LABOR	\$0	\$0	0			\$0	\$0
24	02050	MTRL PERM	\$0	\$0	0			\$0	\$0
25	02200	Earthwork	\$0	\$0	0			\$0	\$0
26	02200	OTHER	\$0	\$0	0			\$0	\$0
27	03000	Concrete	\$23,750	\$23,750	0	0.00%		\$0	\$23,750
28	03000	LABOR	\$13,750	\$13,750	0	0.00%		\$0	\$13,750
29	03000	MTRL PERM	\$10,000	\$10,000	0	0.00%		\$0	\$10,000
30	04000	Masonry	\$27,500	\$27,500	0	0.00%		\$0	\$27,500
31	04000	LABOR	\$12,500	\$12,500	0	0.00%		\$0	\$12,500
32	04000	MTRL PERM	\$15,000	\$15,000	0	0.00%		\$0	\$15,000
33	05000	Metal	\$22,500	\$22,500	0	0.00%		\$0	\$22,500
34	05000	LABOR	\$12,500	\$12,500	0	0.00%		\$0	\$12,500
35	05000	MTRL PERM	\$10,000	\$10,000	0	0.00%		\$0	\$10,000
36	06000	Wood & Plastics	\$123,750	\$123,750	0	0.00%		\$0	\$123,750
37	06000	LABOR	\$18,750	\$18,750	0	0.00%		\$0	\$18,750
38	06000	MTRL PERM	\$50,000	\$50,000	0	0.00%		\$0	\$50,000
39	06000	SUB	\$55,000	\$55,000	0	0.00%		\$0	\$55,000
40	07000	Thermal & Moister	\$46,250	\$46,250	0	0.00%		\$0	\$46,250
41	07000	LABOR	\$21,250	\$21,250	0	0.00%		\$0	\$21,250
42	07000	MTRL PERM	\$25,000	\$25,000	0	0.00%		\$0	\$25,000

Current Net Revenue Change: \$0 ~ Current Net Expense Change: \$0