

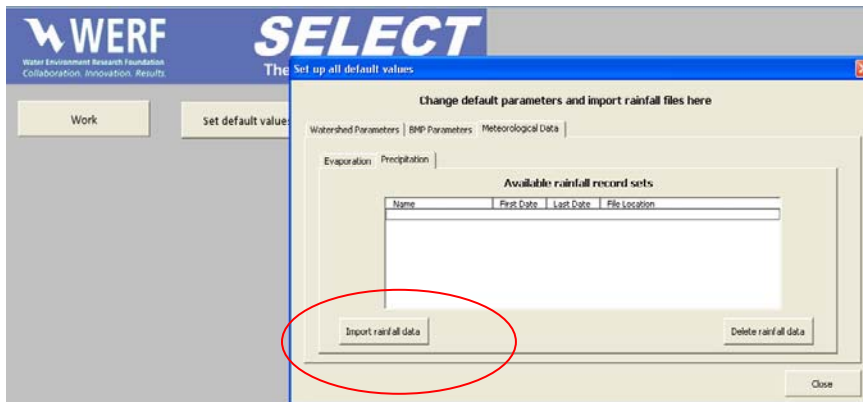
Quick Start Tutorial for BMP SELECT Model

This tutorial provides user instructions to run the model with the default watershed and BMP scenarios embedded in the BETA version of the model. Instructions on how to view model outputs are also provided. To make the model run, a user needs to import rainfall data. Instructions for how to import a rainfall data file and do a test run follow.

1. Download the files and store them somewhere convenient. One file is the spreadsheet, the other is a rainfall file.
2. Double click on the spreadsheet or open Excel and then open the downloaded file. When it asks, allow Excel to Enable Macros.
3. Click on the 'Set Default Values' button

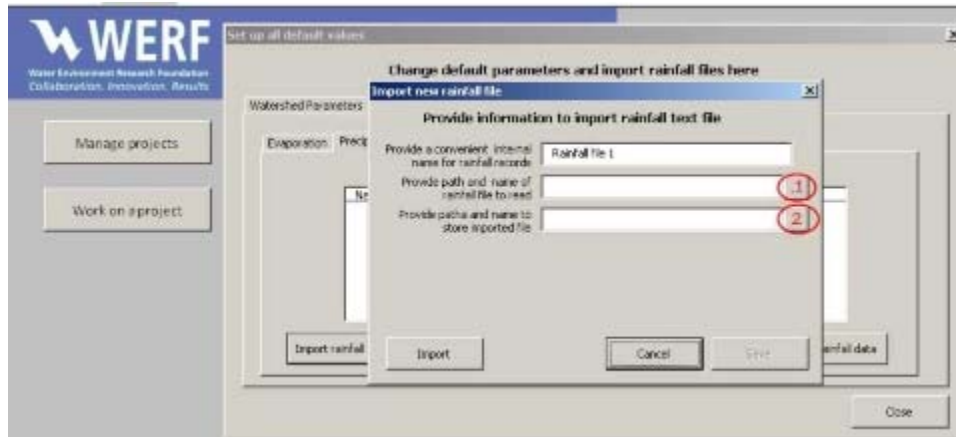


4. Find the Meteorological data panel and then the Precipitation panel, and click on the 'Import Rainfall data' button



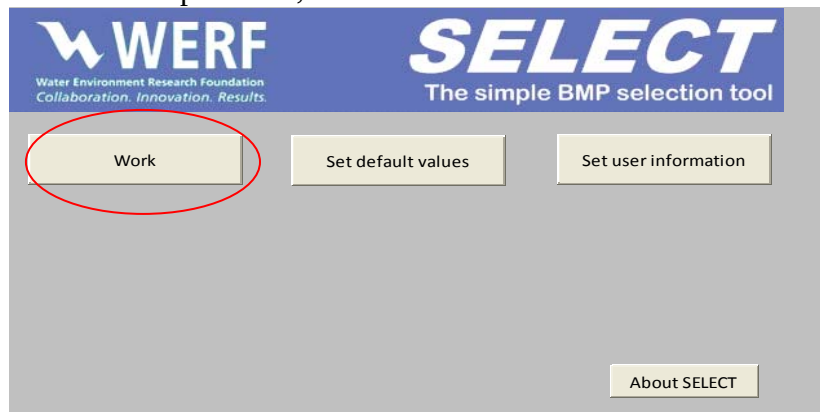
5. When the import form comes up,

- Click the first button and navigate to where you put the rainfall file, then click on the second button and find the location you would like to store the imported rainfall file.

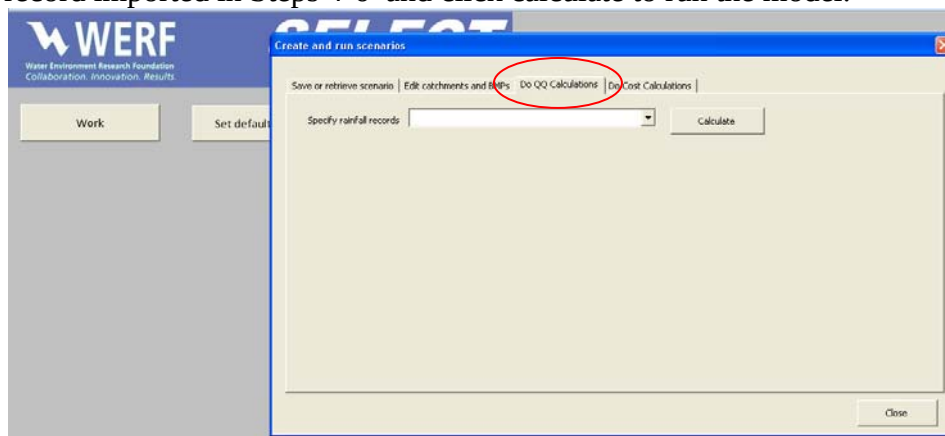


6. When the import is finished, a popup will tell you the import worked. Click 'OK'. Then save the rainfall file location data by clicking the 'Save' button.

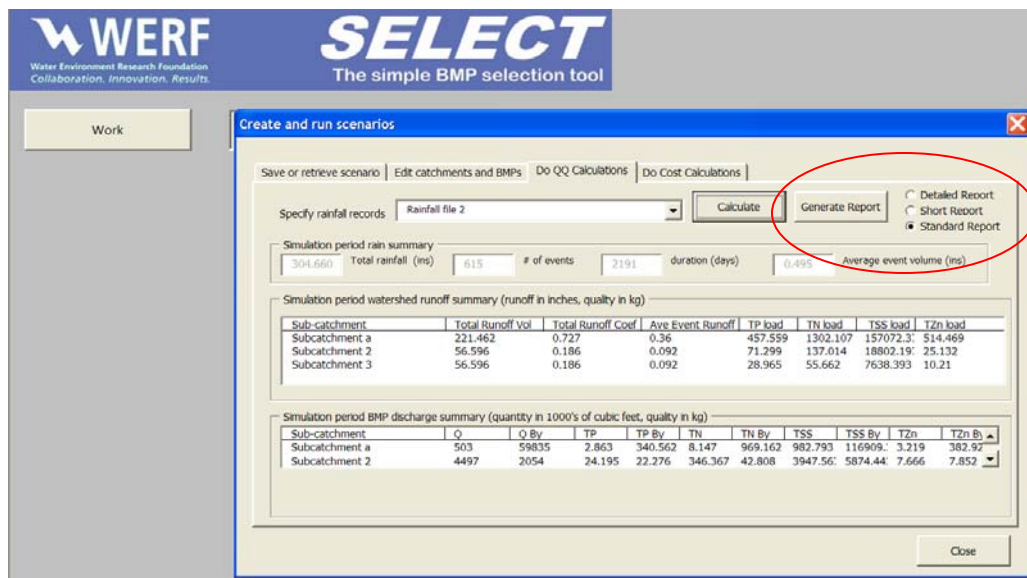
7. Close the open form, and then click the 'Work' button.



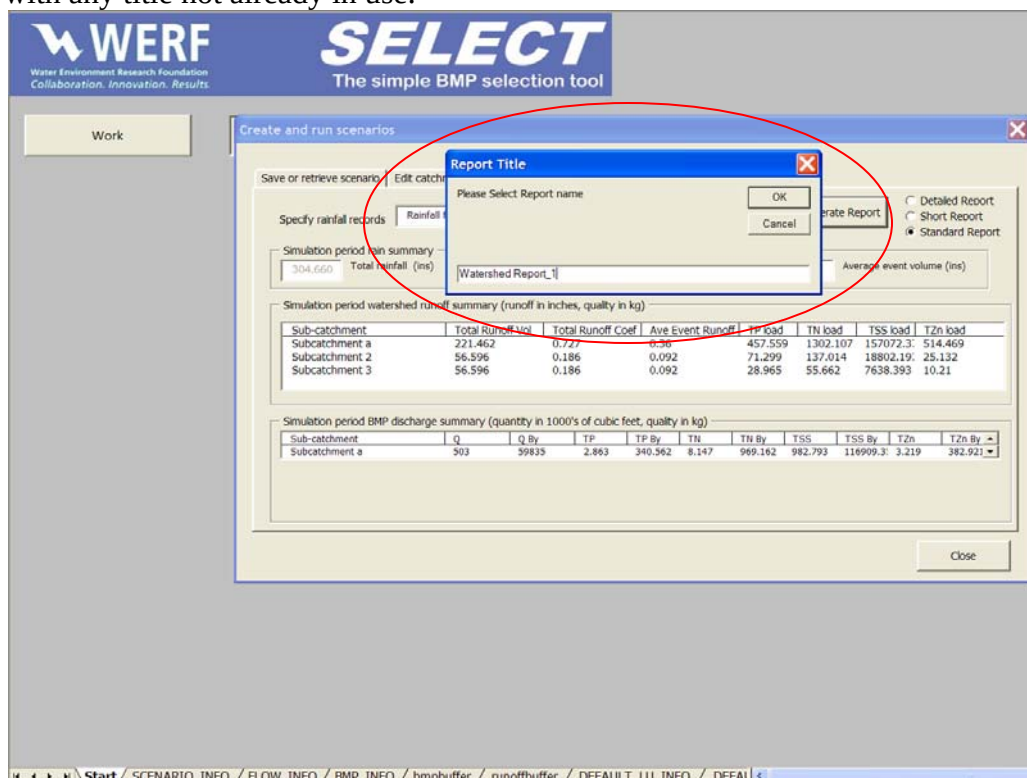
8. A new form will pop up. Find the 'Do QQ Calculations' tab, and click it. Specify the rainfall record imported in Steps 4-6 and click calculate to run the model.



9. After the model runs the window will fill with QQ calculations. Additionally a new button 'Generate Reports' will appear as well as three selectable report options: 'Detailed Report', 'Short Report' and 'Standard Report'.



10. Choose the 'Standard Report' option. Now click 'Generate Report' a new window will appear asking for a title for the report. 'Watershed Report' is the default title but can be replaced with any title not already in use.



11. Once you have selected a report name click the 'OK' button. The model will run and a new Excel worksheet will appear. To view the report close the 'Do QQ Calculations' window. You will notice a new tab at the bottom of the excel sheet appropriately titled with the report title. This tab will remain in the model unless deleted.

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	BMP Performance Report												SELECT model version 1.0
2													
3	User Name	Name of firm or organization								Report Date	7/1/2009		
4	User organization	Name of department or work group								Report Time	12:30 PM		
5													
6	Scenario Name	No name assigned for this scenario											
7													
8	Scenario Data												
9	Subwatershed Name	Area (acres)	Land Use	Cv	DS (ins)	BMP	Treated Ar	WQCV (ins)	Drawdown	% Loss	PPV (ins)		
10	Subcatchment a	100	Commercial	0.9	0.1	Permeable	25					12	
11	Subcatchment 2	32	Residential	0.23	0.1	Extended I	32	0.22	12	0			
12	Subcatchment 3	13	Residential	0.23	0.1	Wetland B	13	0.17	24	0			
13	Total Area	145					70						
14													
15	Scenario BMP Quality Data												
16	BMP Type	% Loss	TP (mg/l)	TN (mg/l)	TSS (mg/l)	TZn (mg/l)							
17	Permeable Pavement	0	0.14	1.15	18	0.0307							
18	Extended Detention	0	0.19	2.72	31	0.0602							
19	Wetland Basin	0	0.14	1.15	18	0.0307							
20													
21													
22	Scenario Land Use Quality Data												
23	Land Use Name		TP (mg/l)	TN (mg/l)	TSS (mg/l)	TZn (mg/l)							
24	Commercial		0.201	0.572	69	0.226							
25	Residential		0.383	0.736	101	0.135							
26													
27													
28	Rainfall	Name			Rainfall file 2								
29		From			01/01/90		To			12/31/95			
30		Duration (days)			2191		Total rain (ins)			304.66			
31		Number of events (ins)			615		Event average rainfall (ins)			0.495			
32							Annual average rainfall (ins)			50.61			
33													
34	Runoff	Quantity	TP	TN	TSS	TZn							
35	Total Over Period	89635.66	557.82	1494.78	183512.97	549.81							
36	Annual Average (c	14891.55	92.67	248.34	30487.78	91.34							
37													
38	BMPs	Quantity	TP	TN	TSS	TZn							
39	Annual Treated Di	977.04	5.08	63.66	893.70	1.94							
40	Watershed Report 1 / Start												

12. This process can be repeated for the other report types, 'Detailed Report' and 'Short Report' by clicking on the Start Tab and repeating Steps 7 through 11, selecting the desired report type. Examples of each report are shown below.

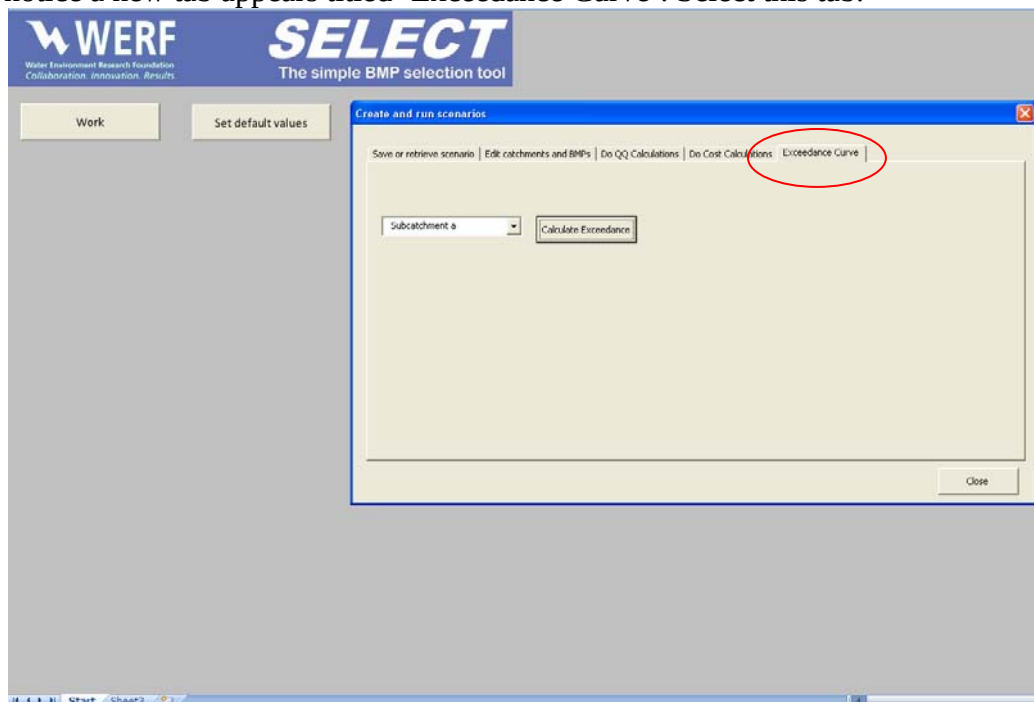
A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	BMP Performance Report												SELECT model version 1.0
2													
3	User Name	Name of firm or organization								Report Date	7/1/2009		
4	User organization	Name of department or work group								Report Time	12:38 PM		
5													
6	Scenario Name	No name assigned for this scenario											
7													
8	Scenario Data												
9	Subwatershed Name	Area (acres)	Land Use	Cv	DS (ins)	BMP	Treated Ar	WQCV (ins)	Drawdown	% Loss	PPV (ins)		
10	Subcatchment a	100	Commercial	0.9	0.1	Permeable	25					12	
11	Subcatchment 2	32	Residential	0.23	0.1	Extended I	32	0.22	12	0			
12	Subcatchment 3	13	Residential	0.23	0.1	Wetland B	13	0.17	24	0			
13	Total Area	145					70						
14													
15	Rainfall	Name			Rainfall file 2								
16		From			01/01/90		To			12/31/95			
17		Duration (days)			2191		Total rain (ins)			304.66			
18		Number of events (ins)			615		Event average rainfall (ins)			0.495			
19							Annual average rainfall (ins)			50.61			
20													
21	Runoff	Quantity	TP	TN	TSS	TZn							
22	Total Over Period	89635.66	557.82	1494.78	183512.97	549.81							
23	Annual Average (c	14891.55	92.67	248.34	30487.78	91.34							
24													
25	BMPs	Quantity	TP	TN	TSS	TZn							
26	Annual Treated Di	977.04	5.08	63.66	893.70	1.94							
27	Annual Bypassed	10577.93	63.49	174.29	21245.29	66.05							
28	Annual Total Disc	11554.96	68.57	237.96	22139.00	67.99							
29	Annual Total Percent Removed	26.01	4.18	27.38	25.57								
30													
31	Average Concentration (mg/l)		0.21	0.73	67.66	0.21							
32													
33													

Short Report

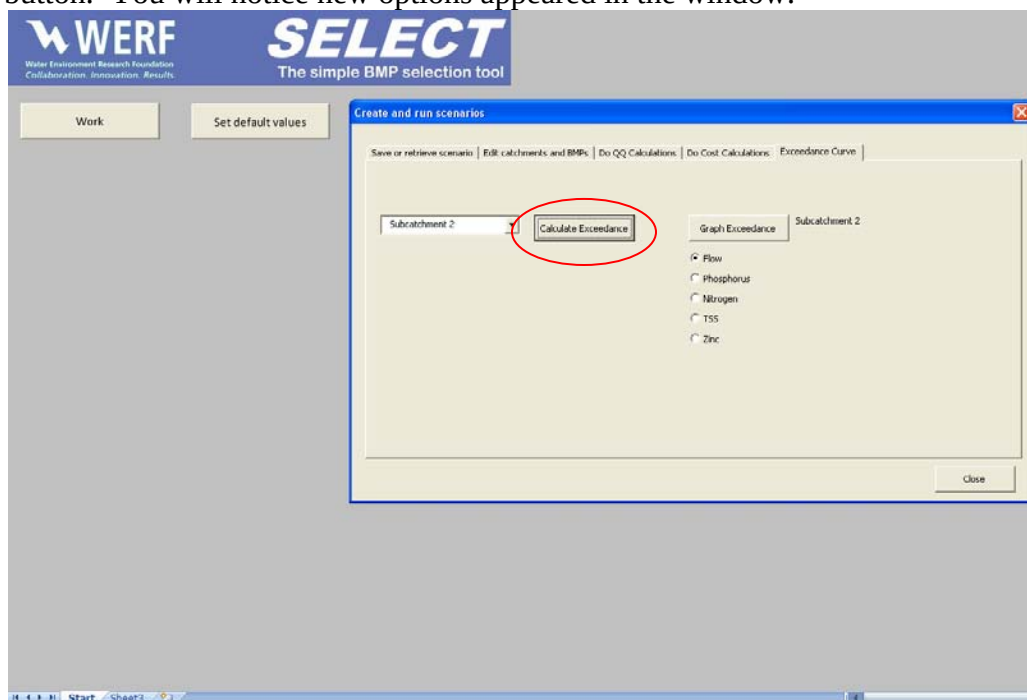
	A	B	C	D	E	F	G	H	I	J	K	L	M	N			
1		BMP Performance Report										SELECT model version 1.0					
2																	
3		User Name	Name of firm or organization									Report Date	7/1/2009				
4		User organization	Name of department or work group									Report Time	12:40 PM				
5																	
6		Scenario Name	No name assigned for this scenario														
7																	
8		Scenario Data															
9		Subwatershed Name	Area (acres)	Land Use	Cv	DS (ins)	BMP	Treated Ar	WQCV (ins)	Drawdown	% Loss	PPV (ins)					
10		Subcatchment a	100	Commercial	0.9	0.1	Permeable	25					12				
11		Subcatchment 2	32	Residential	0.23	0.1	Extended I	32	0.22	12	0						
12		Subcatchment 3	13	Residential	0.23	0.1	Wetland B	13	0.17	24	0						
13		Total Area	145														
14																	
15		Scenario BMP Quality Data															
16		Subwatershed Name	BMP Type	% Loss	TP(mg / l)	TN (mg/l)	TSS (mg/l)	TZn (mg/l)									
17		Subcatchment a	Permeable P	0	0.14	1.15	18	0.0307									
18		Subcatchment 2	Extended Def	0	0.19	2.72	31	0.0602									
19		Subcatchment 3	Wetland Basi	0	0.14	1.15	18	0.0307									
20																	
21																	
22		Scenario Land Use Quality Data															
23		Subwatershed Name	Land Use Name		TP(mg / l)	TN (mg/l)	TSS (mg/l)	TZn (mg/l)									
24		Subcatchment a	Commercial		0.201	0.572	69	0.226									
25		Subcatchment 2	Residential		0.383	0.736	101	0.135									
26		Subcatchment 3	Residential		0.383	0.736	101	0.135									
27																	
28																	
29		Rainfall	Name					Rainfall file 2									
30			From					01/01/90	To	12/31/95							
31			Duration (days)					2191	Total rain (ins)	304.66							
32			Number of events (ins)					615	Event average rainfall (ins)	0.495							
33									Annual average rainfall (ins)	50.61							
34																	
35		Runoff	Quantity	TP	TN	TSS	TZn										
36		Total Over Period	89635.66	557.82	1494.78	183512.97	549.81										
37		Annual Average (c	14891.55	92.67	248.34	30487.78	91.34										
38																	
39		BMPs	Quantitv	TP	TN	TSS	TZn										
40		Watershed Report_1 / Watershed Report_2 / Watershed Report_3 / Start / SCENARIO_INFO / FLOW_INFO / <															
Ready																	

Detailed Report

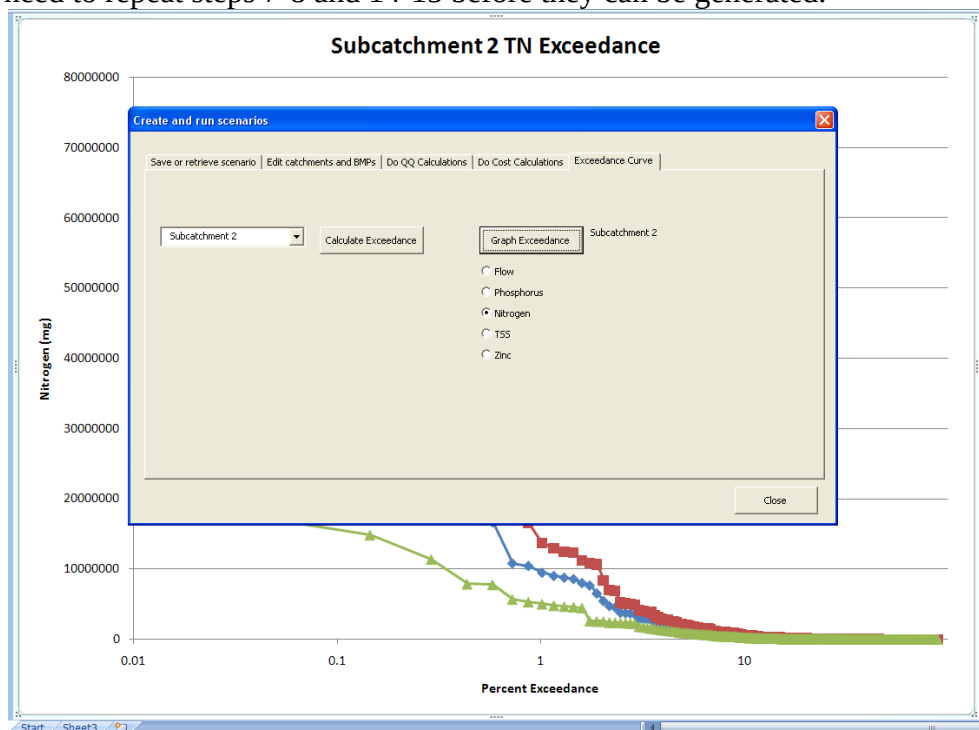
13. Run the model again by returning to the home screen and repeating steps 7-8. This time notice a new tab appears titled 'Exceedance Curve'. Select this tab.



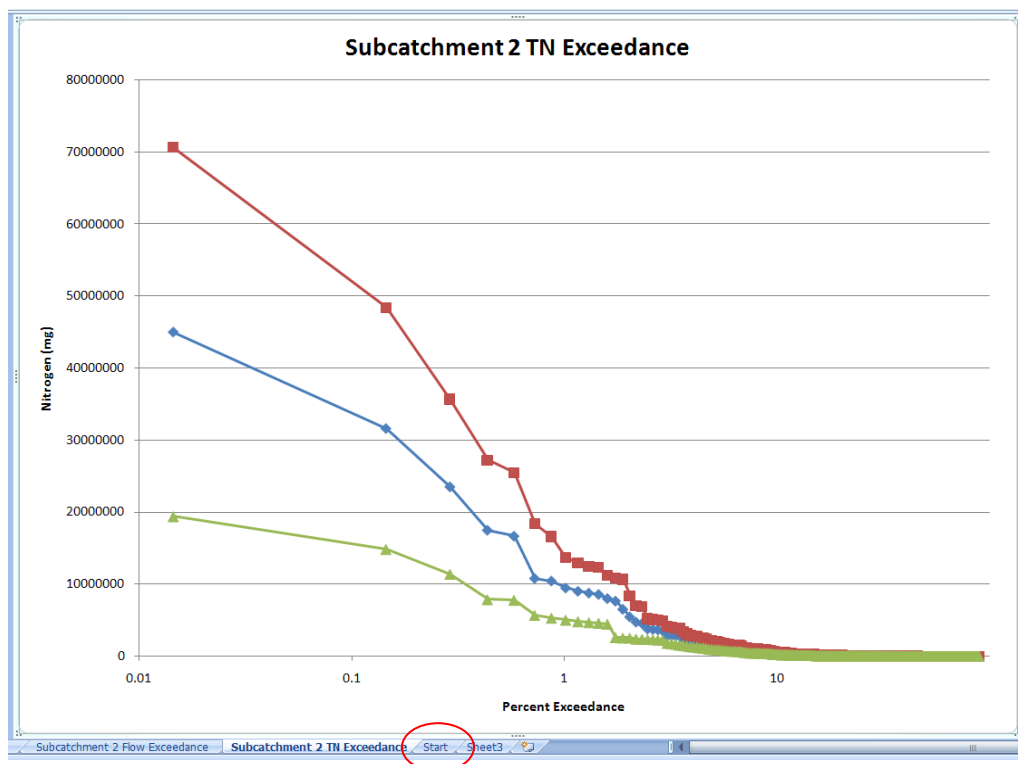
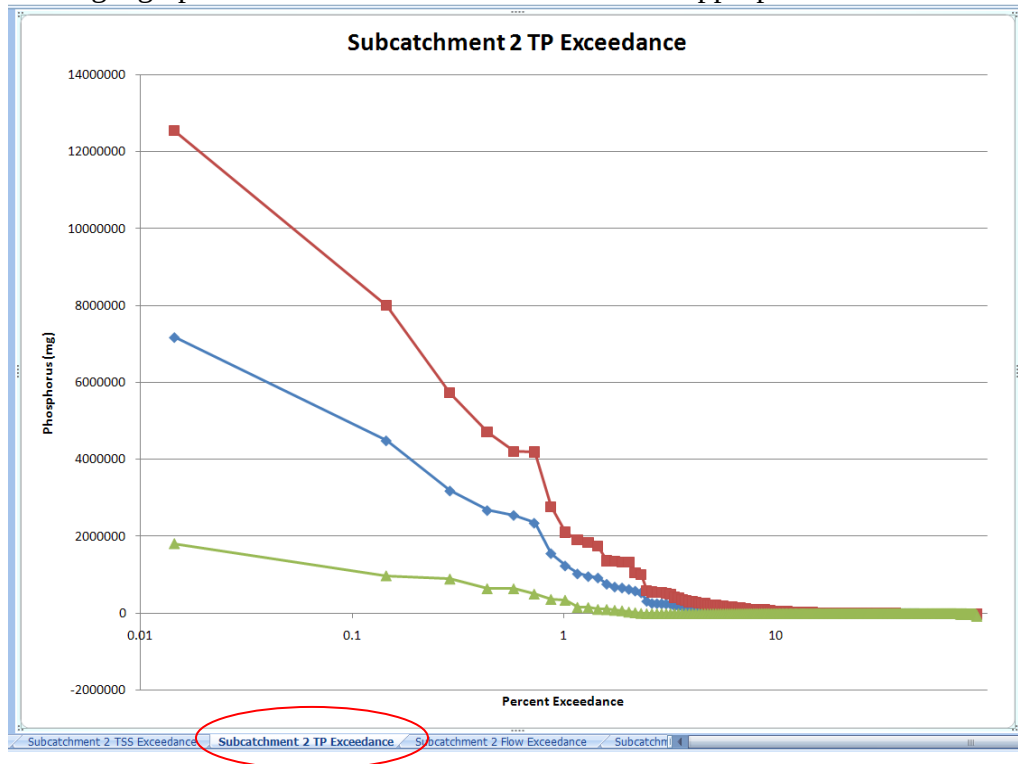
14. Choose a subcatchment from the drop down window then click the 'Calculate Exceedance' button. You will notice new options appeared in the window.



15. Select a model output parameter to graph (Flow, Phosphorus, Nitrogen, TSS or Zinc) then click the 'Graph Exceedance' button. A graph will appear behind the window. Close this window to fully see the graph, however if you want to generate other exceedance plots, do so before closing the window. If you close the window before generating additional plots you will need to repeat steps 7-8 and 14-15 before they can be generated.

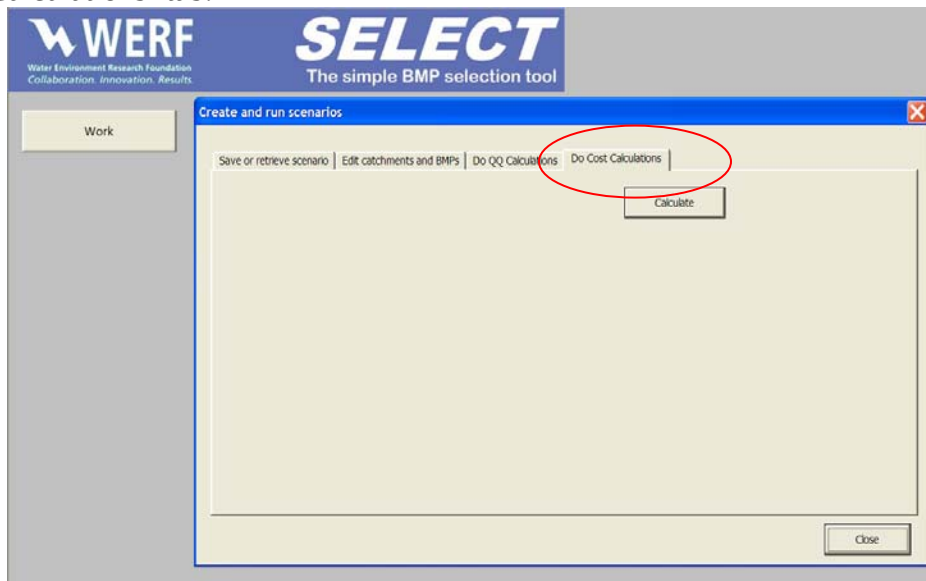


16. You can repeat step 15 for each subcatchment and each output parameter. In addition to creating a graph the model creates a new tab with an appropriate title at the bottom of the model.

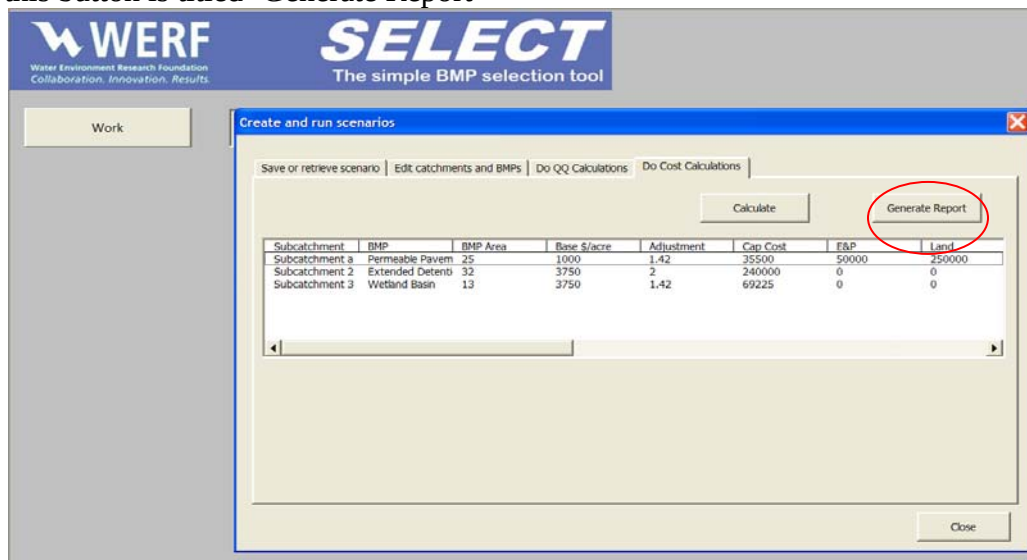


17. To run *Cost Calculations* return to the home screen, to do so click the ‘Start’ tab.

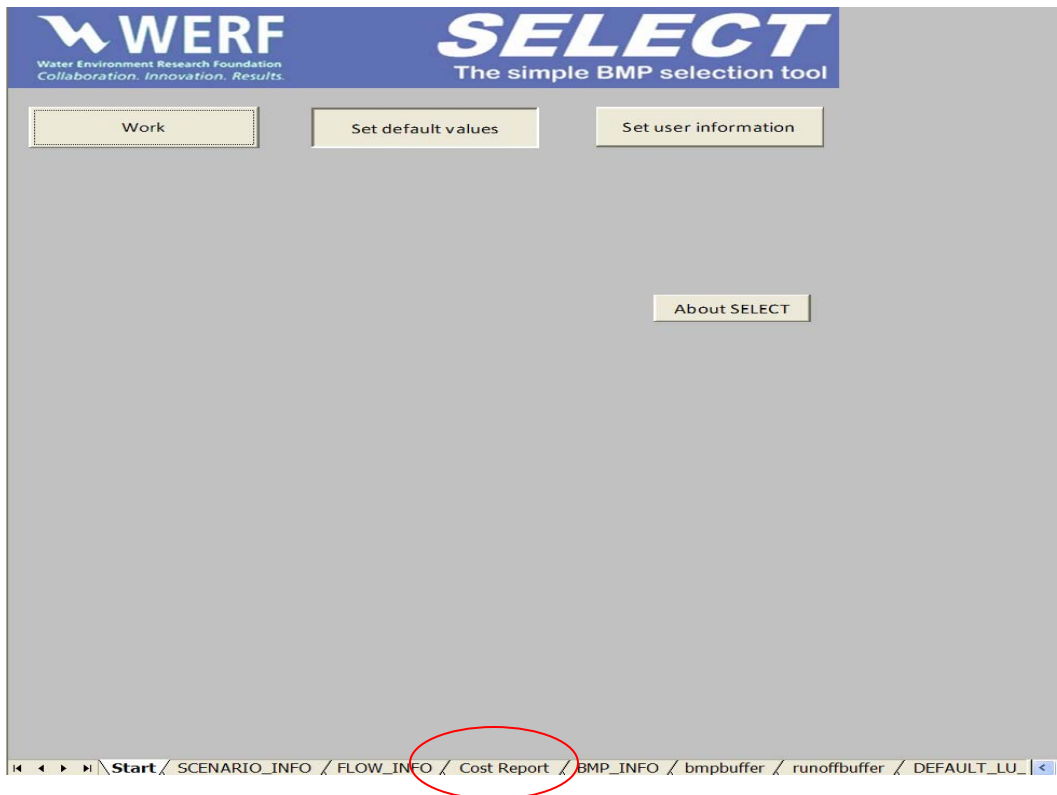
18. Now click on the ‘Work’ button and when the new window appears choose the ‘Do Cost Calculations’ tab.



19. Click the ‘Calculate’ button. The model will generate tabled data listing each BMP with the resulting cost relevant data. A new button will also appear to the right of the ‘Calculate’ button this button is titled ‘Generate Report’



20. To view a detailed cost report click the ‘Generate Report’. Next click the ‘Close’ button on the bottom right portion of the window. At the bottom of the Excel document a new tab labeled Cost Report will appear.



21. Click on the newly generated 'Cost Report' tab. The 'Cost Report' tab shows all the calculated cost data in a familiar Excel format.

	A	B	C	D	E	F	G	H	I	J	K	L
1	BMP Cost Report											SELECT model version 1.0
2												
3	User Name	Name of firm or organization									Report Date	
4	User organization	Name of department or work group									Report Time	
5												
6	Scenario Name	No name assigned for this scenario										
7												
8	Scenario Data											
9	Subwatershed Name	Area (acres)	BMP	BMP Area								
10	Subcatchment a	100	Permeable	25								
11	Subcatchment 2	32	Extended D	32								
12	Subcatchment 3	13	Wetland Ba	13								
13	Total Area	145		70								
14												
15	Capital Cost Data											
16	Subwatershed Name	BMP Area	Base \$/acre	Adjustmen	Cap Cost	E&P	Land	Other	Total			
17	Subcatchment a	25	\$1,000	1.42	\$35,500	\$50,000	\$250,000	\$0	\$335,500			
18	Subcatchment 2	32	\$3,750	2	\$240,000	\$0	\$0	\$0	\$240,000			
19	Subcatchment 3	13	\$3,750	1.42	\$69,225	\$0	\$0	\$0	\$69,225			
20	Total Capital Costs				\$344,725	\$50,000	\$250,000	\$0	\$644,725			
21												
22	O&M and Replacement Cost Data											
23	Subwatershed Name	Discount Rate	Life Span	O&M %	O&M \$	O&M PV	Replacement %	Replacement \$	NPV Replacement \$			
24	Subcatchment a	5.5	20	1	\$3,355	\$40,094	80	\$268,400	\$91,988			
25	Subcatchment 2	5.5	20	2.7	\$6,480	\$77,438	80	\$192,000	\$65,804			
26	Subcatchment 3	5.5	25	1.4	\$969	\$13,000	80	\$55,380	\$14,523			
27	Total Capital O&M and Replacement Costs					\$130,532			\$172,315			
28												
29	Grand Totals											
30	Subwatershed Name	Total NPV										
31	Subcatchment a	\$467,582										
32	Subcatchment 2	\$383,242										
33	Subcatchment 3	\$96,748										
34	Grand Total of All Costs	\$947,572										
35												
36												
37												
38												